## DANMARKS NATIONALBANK

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# Danish Government Borrowing and Debt 2019

- Denmark's central government debt amounted to 18 per cent of GDP at the end of 2019. The debt has decreased considerably since 2012, when it peaked after the financial crisis.
- The central government's financing requirement was met at record-low yields in 2019. The central government issued nominal bonds at an average yield to maturity of -0.33 per cent p.a. and an average maturity of 8 years. Interest costs on the central government debt totalled 0.6 per cent of GDP.
- In 2019, the central government purchased all the bonds issued for financing social housing. Since early 2018, the central government has purchased bonds for almost kr. 95 billion at market value.

## Low central government debt

### 18 per cent of GDP

Denmark's central government debt amounted to in 2019. Government debt fell to kr. 421 billion as the budget showed a surplus.

Read more

## Record-low yields

#### -0.33 per cent p.a.

was the average yield on nominal bonds issued by the Danish central government in 2019.

Read more

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## Central government debt and interest costs

#### Central government debt fell in 2019

A government budget surplus meant that the central government's debt fell to kr. 421 billion at end-2019, corresponding to 18 per cent of GDP, cf. Table 1. Government debt as a share of GDP has decreased considerably since 2012, when it peaked after the financial crisis, cf. Chart 1.

An increasing share of the central government debt reflects borrowing on behalf of government-owned companies (on-lending). Adjusted for on-lending, the central government debt totalled kr. 291 billion, or 13 per cent of GDP, at end-2019, cf. Table 1.

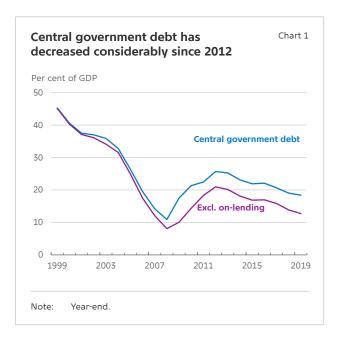
Denmark's gross government debt (EMU debt) was still among the lowest in Europe. At 33 per cent of GDP at end-2019, it was considerably below the reference value of 60 per cent of GDP laid down in the Stability and Growth Pact, cf. Chart 2. The low level of debt and healthy public finances helped to ensure that Denmark in 2019 remained among the few countries worldwide with the top credit rating (AAA/Aaa) and a stable outlook from the largest international credit rating agencies.<sup>1</sup>

#### Lower interest costs in 2019

In 2019, interest costs on the central government debt amounted to approximately kr. 13 billion, corresponding to 0.6 per cent of GDP. This is slightly lower than in 2018, cf. Chart 3. The decline in the central government interest costs is mainly attributable to existing debt being refinanced at very low rates of interest. Conversely, buy-backs of government bonds maturing after 2019 contributed to bringing forward future interest costs. When the central government buys back bonds with a coupon exceeding the current market yield, a capital loss is realised that is matched by correspondingly lower future interest costs. In 2019, the capital loss on buy-backs amounted to around kr. 2.5 billion.

	Kr. billion	Per cent
Domestic debt	612	27
Foreign debt¹	0	C
Collateral related to swaps	0	C
Central government's account <sup>2</sup>	-70	-3
Government funds	-34	-1
Bonds to finance social housing	-87	-4
Central government debt	421	18
On-lending	-131	-6
Central government debt adjusted for on-lending	291	13

- 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.



See (link) for an overview of the current ratings from Moody's, Standard & Poor's, Fitch Ratings, DBRS Rating and Scope Ratings. From the end of 2018, the central government has chosen to have a contractual relationship with one credit rating agency only.

#### **Public debt measures**

Box 1

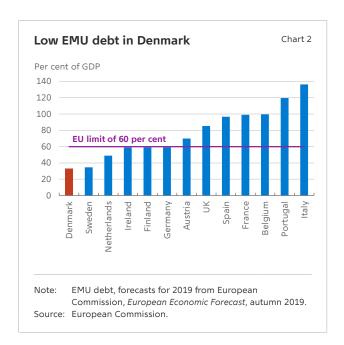
The central government debt, the EMU debt and the net general government debt are often used when calculating sovereign debt.

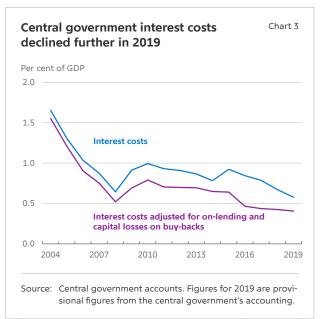
The central government debt is compiled as the nominal value of the central government's domestic and foreign debt less the balance on the central government's account at Danmarks Nationalbank, bonds to finance social housing and the assets of the three government funds: the Social Pension Fund, Innovation Fund Denmark and the Fund for Better Working Environment and Labour Retention. The central government debt is managed by Danmarks Nationalbank on behalf of the Ministry of Finance.

The EMU debt comprises the debt of the central, regional and local governments as well as social security funds and is calculated at nominal value. The debt is calculated on a gross basis, but the public sector may consolidate the debt with claims on itself. This means that e.g. the portfolios of bonds issued by public entities and held by the central gov-

ernment or government funds are subtracted from the EMU debt. On the other hand, the Social Pension Fund's portfolio of other listed bonds and the balance on the central government's account at Danmarks Nationalbank cannot be subtracted. According to the EU Stability and Growth Pact, the EMU debt must not, as a general rule, exceed 60 per cent of GDP.

The net general government debt comprises all financial assets and liabilities of the central, regional and local governments as well as social security funds. The central government's assets side includes the 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 general government debt is calculated at market value and is thus affected by value adjustments of government assets and liabilities. Internationally comparable calculations of net general government debt are made by the OECD and the IMF, among others.





In addition, the central government received kr. 1.4 billion in interest income from the government-owned companies in connection with on-lending. Adjusted for interest income from on-lending and interest costs brought forward, interest costs amounted to around kr. 9 billion or 0.4 per cent of GDP in 2019.

#### Government borrowing

## Sales of government bonds were in accordance with the strategy

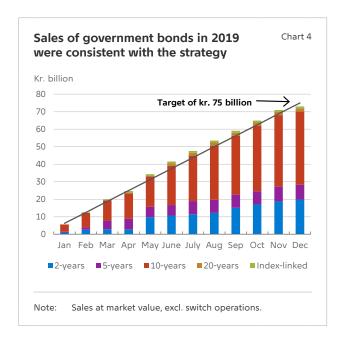
Bond issuance by the central government in 2019 via auctions and tap sales amounted to kr. 73 billion at market value, cf. Chart 4. This was consistent with the target, which was increased from kr. 65 billion to kr. 75 billion in July in response to an increased financing requirement. Bond sales were relatively evenly distributed across the year, albeit with a slight overweight of issuance in the 2nd half of the year, when the target was higher. The average sales volume per auction was around kr. 2.6 billion in 2019, cf. Chart 5.

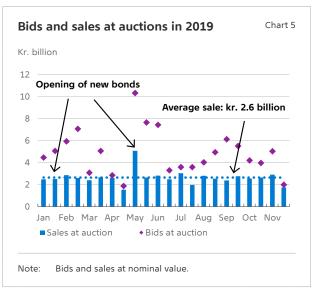
#### Focus on 2- and 10-year series

Issuance took place in all on-the-run issues, but in line with the strategy, most of the new issues were in the 2- and 10-year nominal bond series that were opened in the 1st half of 2019. This reflects a wish to build up the new series to the level of liquid benchmark securities. Larger bond series are normally characterised by higher liquidity than series with low outstanding volumes. This makes it possible for market participants to trade rapidly and at low costs, even if the volumes are large.

Demand for the various maturity segments fluctuated over the year. Especially during the summer, demand was mainly concentrated on the long maturity segments, notably the new 10-year bond. The increased demand for long-term government bonds primarily reflected a shortage of bonds with long duration among institutional investors as a result of falling interest rates. After the new 2-year bond opened in May, and particularly during the autumn, interest in the short maturity segment picked up again.

Investor interest in the index-linked bond was limited in 2019, and the central government's sales via





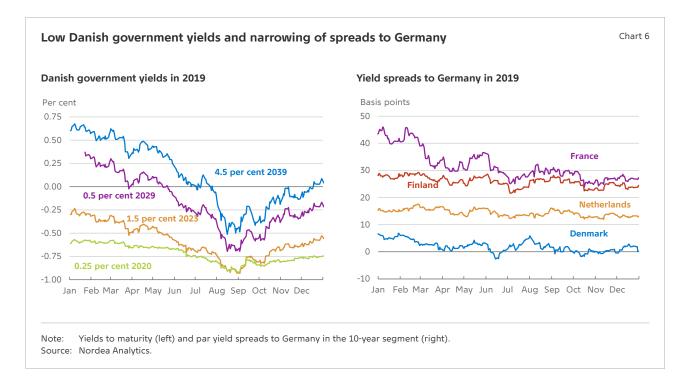
auctions and on tap amounted to only just over kr. 1 billion at market value. According to market participants, the limited interest in the index-linked segment reflects expectations of relatively low inflation for a lengthy period of time. On the other hand, several investors have expressed a continued interest in switching from 0.1 per cent 2023i to 0.1 per cent 2030i, cf. Table 2.

#### Central government issuance at record-low yields

Danish government bonds were issued at historically low yields in 2019. The average yield to maturity on nominal bonds was -0.33 per cent p.a., cf. Table 3. The low financing costs mainly reflected a substantial fall in long-term yields over the year.

Central government issuance in 2019		Table 2
Kr. million, market value	Auctions and tap	Switch operation:
0.25 per cent 2020	2,872	
0.25 per cent 2022	16,988	5,156
1.5 per cent 2023	5,955	2,72
1.75 per cent 2025	2,458	1,54
0.5 per cent 2027	1,456	
0.5 per cent 2029	40,319	7,97
0.1 per cent 2030i	1,116	3,532
4.5 per cent 2039	1,827	
Total	72,991	20,928

	Average maturity, years	Average yield per cent p.a
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
2019	7.8	-0.33



On the whole, Danish government yields mirrored the development in international yields in 2019, falling to record-low levels over the summer. In August, the yield to maturity on a 10-year government bond fell to around -0.7 per cent p.a., while the yield on a 20-year bond was -0.5 per cent p.a., cf. Chart 6 (left). The development in yields reflected factors such as a deteriorating global growth outlook and increased risk aversion, which boosted demand for bonds with high

ratings. During the autumn, yields rose again, to around the pre-summer level, on account of the postponement of Brexit and optimism in relation to the trade negotiations between the USA and China. Despite the increase, Danish government yields were still at a very low level at end-2019 compared with previous years.

The yield spread to Germany narrowed in 2019 and was close to zero for the 10-year maturity segment at year-

end, cf. Chart 6 (right). This was partly attributable to institutional investors' demand for Danish government securities with long duration for hedging of interest rate risk. In the autumn, duration increased in the mortgage credit market, which usually contributes to widening of the spread. However, the yield spread remained narrow, one reason being that increased foreign interest in Danish long-term mortgage bonds had squeezed the spread between long-term government and mortgage bonds. This increased investor demand for long-term government bonds.

## The outstanding volume of T-bills was kr. 24 billion at the end of the year

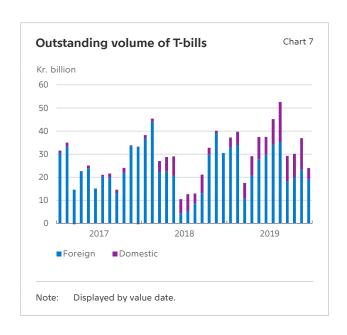
The T-bill programme gives the central government access to short-term financing and is part of the government's liquidity reserve. The outstanding volume in the programme can vary substantially. The target for outstanding T-bills is around kr. 30 billion, which ensures sufficient build-up of the individual series. At end-2019, the outstanding volume in the programme was kr. 24 billion. T-bills were issued with an average yield to maturity of -0.7 per cent p.a. and an average maturity of 3.5 months.

T-bills are held mainly by non-resident investors, and demand can vary considerably over the year, cf. Chart 7. The fluctuations in demand from dollar-based investors are ascribable to, inter alia, how favourable it is to swap between dollars and kroner, as well as investors' willingness to lend dollars.

Domestic interest in T-bills should be viewed in the light of factors such as the banks' and mortgage credit institutions' use of T-bills in their liquidity management. For example, mortgage credit institutions may have excess liquidity in connection with refinancing as they have not been able to buy back redeemed bonds before the payment date since September 2015. Especially in connection with large refinancing booms, when there are fewer alternative investment options, part of the excess liquidity is placed in T-bills.

#### Broad investor base for Danish government bonds

In 2019, Danish government bonds were held by a wide range of investors in terms of sector and geography, cf. Chart 8 (right). With an ownership share of approximately 50 per cent, the Danish insurance and pension sector was the largest investor group, especially in the long maturity segments. It is natural for this investor group to invest in long-term government bonds to hedge its long-term pension commitments.



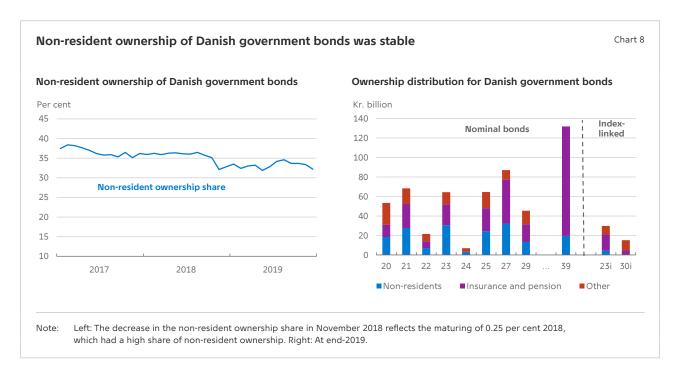
Non-resident ownership of Danish government bonds was virtually unchanged in 2019, at a level of around 33 per cent, cf. Chart 8 (left). In 2019, demand for Danish government bonds was particularly high from North American and European investors.

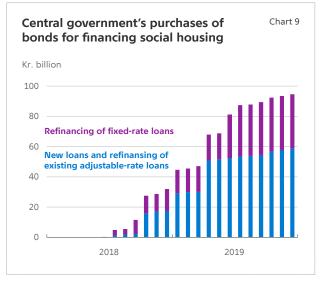
## The central government purchased all bonds for financing social housing

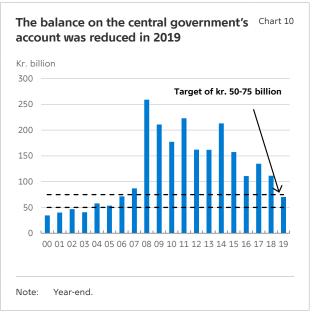
In 2019, the central government purchased all bonds issued to finance social housing, equivalent to just under kr. 63 billion at market value, cf. Chart 9. This means that so far the central government has purchased all government-guaranteed mortgage bonds issued and all bonds issued by KommuneKredit for financing social housing at a yield corresponding to the government yield. These bonds are used for financing new construction and refinancing existing adjustable-rate mortgages. Add to this fixed-rate callable loans that have been refinanced as government-guaranteed loans at the instigation of the Danish Transport, Construction and Housing Authority. All in all, the central government has purchased bonds for almost kr. 95 billion at market value since the beginning of 2018. Of this, approximately kr. 35 billion related to refinancing of fixed-rate loans. This means that all fixed-rate loans in the social housing sector have been refinanced as government-guaranteed loans.

## Balance on central government account reduced to pre-2008 level

In 2019, a large part of the financing requirement was met by drawing on the central government's







account, which led to a reduction of the balance on the account by kr. 41 billion to around kr. 70 billion at year-end, cf. Chart 10. A balance of around kr. 50-75 billion is still assessed to be a sufficient liquidity reserve for the central government.

## The central government's financing requirement towards 2024 is approximately kr. 85 billion p.a.

The central government's issuance strategy is determined on the basis of a medium-term strategy laying down the overall framework for the sale of government securities and contributing to a predictable and stable issuance policy. The strategy is aimed at building up liquid benchmark series in the key maturity segments and issuance of government securities that are attractive for a wide range of investors.

The central government's average financing requirement in bonds is forecast at around kr. 85 billion p.a. towards 2024, cf. Chart 11. The difference between the central government's sale of bonds and its

financing requirement from year to year is absorbed by the central government's account.

#### No loans in foreign currency in 2019

No bonds denominated in foreign currency were issued in 2019. Hence, the central government's foreign debt consists only of commitments related to currency swaps concluded in connection with the hedging of risk on on-lending in dollars to Danish Ship Finance.

The central government may raise short-term foreign loans in markets with great depth. This can be done via its two Commercial Paper programmes, one European and one US programme. These programmes were tested in June and worked as intended.

#### Trading in the secondary market

## The central government was active in the secondary market

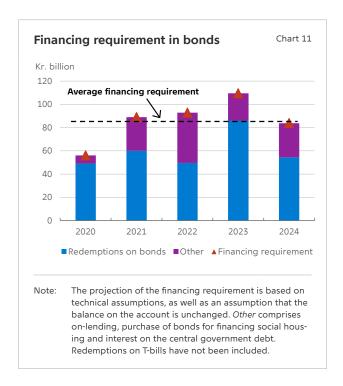
In 2019, the central government contributed to a liquid and well-functioning market for government securities via switch operations, buy-backs and tap sales, cf. Chart 12. Among other things, the central government's activity in the market supports the primary dealers' ability to make liquidity available to investors on a current basis, thereby making it easier and cheaper to trade in Danish government securities.

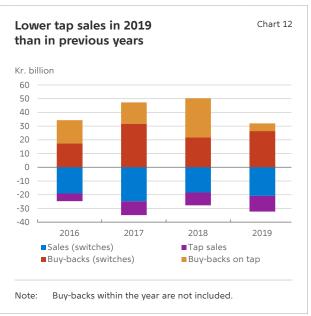
## Switch operations helped to build up the two new bond series

In 2019, 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. This contributed to increasing the outstanding volume and hence to improving liquidity in the new series. At the end of 2019, the outstanding volumes in the new 2- and 10-year series had been built up to kr. 21 and 45 billion, respectively, around one-fifth via switch operations. Total bond buy-backs and issuance in connection with switch operations in 2019 amounted to kr. 26 and 21 billion, respectively, cf. Table 4.

## The central government was active via tap sales and buy-backs

Issuance of government bonds mainly takes place via auctions but is to a limited extent supplemented





by tap sales in the secondary market. In 2019, central government sales on tap amounted to kr. 11 billion, which is in line with sales in the preceding years, cf. Chart 12.

The central government can buy back bonds maturing after the current year, e.g. to smooth the redemption profile from year to year. The volume of buy-backs without switch operations (buy-backs on tap) was substantially lower in 2019 than in the preceding years, cf. Chart 12, and primarily reflected buy-backs of 7 per cent 2024 from the government funds. The lower volume of buy-backs should be viewed against the background of a particularly high financing requirement in 2019 due to the central government's purchase of bonds for financing social housing.

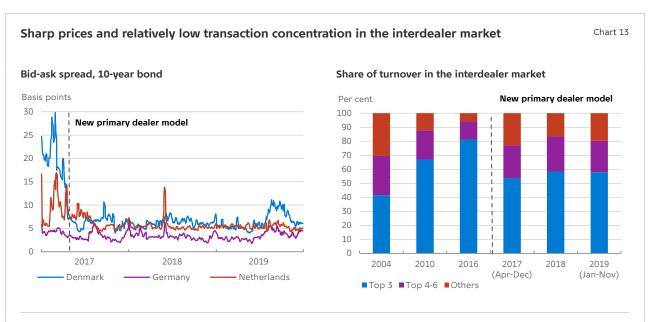
## The primary dealer model supports trading in the secondary market

The Danish primary dealer model gives banks an increased incentive to quote sharp two-way prices in the interdealer market. During the summer of 2019, the spread between purchase and sales prices (the bid-ask spread) for Danish bonds widened a little, as did the German one, cf. Chart 13 (left). This was driven by, inter alia, increased demand for liquidity in the interdealer market in response to diving interest rates. As the markets calmed down again, the spread

Switch operations in 2019	1	Table 4
Kr. million, market value	Buy-backs	Issuance
3 per cent 2021	7,630	
0.25 per cent 2022	-	5,156
1.5 per cent 2023	1,671	2,727
0.1 per cent 2023i	3,538	
7 per cent 2024	1,902	
1.75 per cent 2025	6,918	1,541
0.5 per cent 2027	4,800	
0.5 per cent 2029	-	7,97
0.1 per cent 2030i	-	3,532
Total	26,459	20,928

narrowed, and by end-November it was back at the pre-summer level. The rapid return to normal bid-ask spreads indicates that the primary dealer model is still functioning well.

As regards trading in the interdealer market, the concentration on individual banks is still lower than



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 of primary dealers' purchases and sales of Danish government securities.

before the adjustment of the primary dealer model, cf. Chart 13 (right). Sydbank ceased to be a primary dealer in Danish government bonds during 2019, but is expected to rejoin the system. This has not had any impact on the turnover in or pricing of Danish government securities.

The responses of several large Danish and international investors point to a well-functioning market where liquidity enables trading for large amounts without any major impact on market prices. Several investors have indicated that they are willing to take active positions because of the high liquidity. This helps to create an active marketplace and a positive spiral for market liquidity.

## 7 per cent 2024 no longer included in the price-quoting system

For some time, 7 per cent 2024 have had a low outstanding volume. During most of 2019, it was just over kr. 11 billion, of which kr. 7 billion was held by the government funds. When the actual outstanding volume is so low, it can at times be difficult to quote prices for the bond, which can reduce its tradability. So in December 2019 it was decided to give investors the opportunity to switch to the more liquid on-therun issues. At the same time, the central government bought back and cancelled bonds for just under kr. 3.5 billion in this series from the government funds. Combined with the switch operations, these buy-backs contributed to reducing the outstanding volume in this series to just under kr. 7 billion at end-2019.<sup>2</sup> Against that background, the primary dealers' market making obligations were updated, so that future price quotation for this bond would be on a best-effort basis. But the primary dealers still quote sharp bid and ask prices in this series.

#### **Securities lending**

The central government's primary dealers have access to the securities lending facilities of the central government and the Social Pension Fund, which allows them to borrow government securities against collateral for up to 5 banking days. This helps to ensure a liquid and efficient secondary market for Danish government securities, as the securities lending facility helps to support market making for primary dealers.

As part of the normalisation of the fee for the securities lending facility and to create a further incentive for trading among market participants, the fee was raised from 0.10 to 0.20 per cent with effect from 10 May 2019.

#### Management of market risk

Management of market risk is a key element in the administration of central government debt and supports the overall target of government debt policy: to cover the central government financing requirement at the lowest possible long-term costs, while taking the degree of risk into account. The central government's risk management focuses mainly on risks in connection with interest rate developments, as the central government's exchange rate and credit risks are very limited.

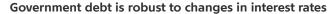
The central government's interest rate risk is the risk of higher costs for the central government if it has to obtain financing at higher interest rates in the future. This risk depends on the debt level and the combination of short-term and long-term bonds, among other factors. In risk management, the average fixed interest period - or duration - is used as a guide for management of the interest rate risk on the debt portfolio. When the duration is high, the rate of interest on a large part of the debt is locked for many years. That ensures a slow pass-through to the central government's interest costs if interest rates rise. Conversely, when the duration is low, the pass-through is faster, but the expected interest costs on the debt are usually also lower.

## The central government debt is robust to rises in interest rates

The duration remains high in a historical and international context. The long fixed-interest period and low central government debt mean that the government has a very low exposure to rising interest rates. If, say, all interest rates rise by 3 percentage points at the beginning of 2020, this will not increase the central government's net interest

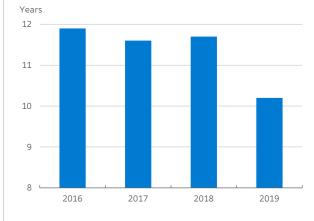
<sup>2</sup> Adjusted for the portfolios of the government funds, the outstanding volume was just over kr. 3 billion at end-2019.

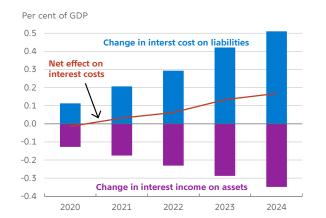
Chart 14



#### Pass-through from 3 percentage point interest rate increase







Note: Left: Average duration calculated without discounting. Right: Changes in interest costs on permanent parallel shift in the yield curve at the beginning of 2020.

Source: Danmarks Nationalbank.

## The duration of the central government debt depends on the balance on the central government's account at Danmarks Nationalbank

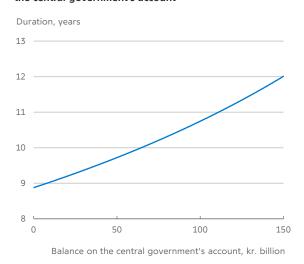
Box 2

Interest rate risk on the central government debt, measured by its duration, is calculated on a consolidated basis, i.e. both assets and liabilities in the government debt portfolio are included in the calculation. Since the balance on the central government's account at Danmarks Nationalbank is an asset in the government debt portfolio, it has an impact on the duration of the government debt.

A balance on the central government's account hedges interest rate risk from short-term liabilities, such as short-term loans or swap payments. Consequently, the duration of the government debt portfolio increases with the balance on the central government's account, cf. the chart.

The close correlation between the balance on the central government's account and the duration of the central government debt means that the average duration will fluctuate, even if the maturity profile of the issuances remains unchanged.

## The duration increases with the balance on the central government's account



Note: The duration has been calculated without discounting on the basis of the government debt portfolio on 30 December 2019.

Source: Danmarks Nationalbank.

costs in 2020, cf. Chart 14 (right). The interest rate pass-through will gradually increase to just over 0.15 per cent of GDP after 5 years. The low pass-through to net interest costs in the first years is primarily attributable to the balance on the central government's account, as the higher interest rates will immediately be reflected in the remuneration of the balance.

#### The duration was reduced 2019

In line with the strategy, the duration of the central government debt was reduced to an average of 10.2 years in 2019, down from 11.7 years in 2018, cf. Chart 14 (left). The reduction did not reflect a change in issuance strategy, but was driven primarily by normalisation of the central government's account, which is a short-term asset in the consolidated risk management, cf. Box 2.

## On-lending and government guarantees

A number of government-owned companies may raise loans directly from the central government, on-lending, cf. Box 3. In 2019, on-lending by the central government amounted to kr. 31 billion nominally, cf. Table 5. The largest borrowers were the Metro Company, Femern Belt and Energinet. At year-end, the total outstanding volume of on-lending was kr. 131 billion, corresponding to an increase of kr. 14 billion relative to 2018.

#### Even distribution of on-lending in 2019

In 2019, the on-lending raised was evenly distributed across the year, cf. Chart 15. An even distribution of the companies' borrowing across the year enables

On-lending in 2019				Table 5
Kr. billion, nominal value	Portfolio end-2018	Borrowing in 2019	Redemptions in 2019	Portfolio end-2019
Infrastructure				
Femern Landworks	2.6	2.1	-0.8	3.9
The Great Belt Bridge	17.0	3.1	-2.9	17.3
Øresund Landworks	10.3	1.3	-0.9	10.7
Energinet	25.5	3.7	-0.5	28.7
Femern Belt	6.2	5.6	0.0	11.8
Fjord Link Frederikssund	0.7	0.1	0.0	0.8
The Metro Company	22.0	11.6	-4.2	29.4
Greater Copenhagen Light Rail	0.4	1.1	-0.4	1.1
Sund & Bælt Holding	0.3	0.7	-0.3	0.7
CPH City & Port Development	13.9	1.0	-2.2	12.7
Other				
Danish Ship Finance	1.8	0.0	-0.8	0.9
DR (Danish Broadcasting Corporation)	3.0	0.4	-0.5	2.9
EKF (Danish Export Credit Agency)	12.9	0.0	-3.0	9.8
Investment Fund for Developing Countries	-	0.1	0.0	0.1
Total	116.5	30.7	-16.4	130.7

Note: On-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. This difference is reflected in a similar change in the value of the central government's hedge portfolio.

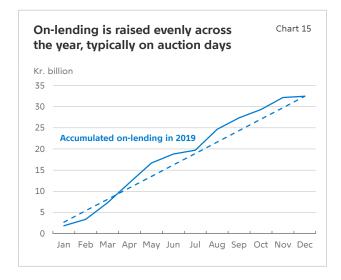
#### On-lending Box 3

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.

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 yields.

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



interest risk diversification and strengthens the central government's risk management.

## First on-lending to the Danish SDG Investment Fund

In 2017, the Folketing (Danish parliament) decided that the Danish SDG Investment Fund, managed by the Investment Fund for Developing Countries, should have access to on-lending. In 2019, the Fund made use of this facility for the first time, borrowing a total of kr. 142 million.

#### Fewer government loan guarantees

In recent years, government-owned companies have tended to opt for on-lending rather than government-guaranteed borrowing. On-lending is usually the less expensive option as the loan is

Loan guarantees administered by
Danmarks Nationalbank on behalf
of the central government

Table 6

End-2019	Kr. million	Per cent of GDP
The Great Belt Bridge	2,285	0.1
Øresund Landworks	439	0.0
Femern Landworks	22	0.0
Øresundsbro Konsortiet I/S	11,976	0.5
DSB (Danish State Railways)	749	0.0
DR (Danish Broadcasting Corporation)	436	0.0
Danish Guarantee Fund for Non-life Insurers	534	0.0
Kalaallit Aiports International A/S (KAIR INT)	0	0.0
Total	16,442	0.7
Total	16,442	0.7

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

financed by issuing government bonds, which are typically more liquid than government-guaranteed issuances.

At end-2019, Danmarks Nationalbank administered government loan guarantees amounting to kr. 16 billion, equivalent to 0.7 per cent of GDP, cf. Table 6. This represents a reduction of kr. 3 billion relative to the preceding year.

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. In addition, the central government guarantees a number of smaller credit facilities. In 2019, the Danish Guarantee Fund for Non-life Insurers received a guarantee for an overdraft facility in order to ensure more favourable borrowing conditions.

The central government also issues guarantees not administered by Danmarks Nationalbank. These guarantees have primarily been given to international organisations and export credits. According to the national accounts, the Danish government had issued guarantees totalling kr. 365 billion, or 16 per cent of GDP, in 2018.

#### Government funds

## Danmarks Nationalbank manages the assets of three government funds

On behalf of the central government, Danmarks Nationalbank manages the assets of the Social Pension Fund, Innovation Fund Denmark and the Fund for Better Working Environment and Labour Retention. 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 2019, the Social Pension Fund, SPF, had assets totalling kr. 28 billion nominally, cf. Table 7. SPF's nominal bond portfolio has been gradually reduced since 1995 as transfers from SPF exceed the current returns.

In 2019, kr. 13.4 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,

Nominal value, kr. billion	SPF	Innovation Fund Denmark	Fund for Better Working Environment and Labour Retention	Share of outstanding per cent
0.25 per cent bullet loan 2020	2.5	-	-	4.7
3 per cent bullet loan 2021	7.4	4.0	0.7	17.5
1.5 per cent bullet loan 2023	8.3	2.7	-	17.0
7 per cent bullet loan 2024	2.4	1.1	-	51.6
1.75 per cent bullet loan 2025	-	2.1	-	3.2
0.5 per cent bullet loan 2027	-	3.7	-	4.3
Government bonds, total	20.5	13.6	0.7	5.9
Mortgage bonds maturing in 2020, nominal	1.7	-	-	
Balance of account	5.4	0.1	0.0	
Total	27.6	13.7	0.7	

partly by selling government bonds maturing in 2019 and 2024. SPF did not buy any bonds in 2019. With the current level of transfers, SPF's assets are expected to have been depleted by around the end of 2021, after which SPF is expected to be wound up.

SPF's market risk is managed using a band for the average Macaulay duration over the year. In 2019, the band was 2.5 years  $\pm 0.5$  year. The duration ended at 2.2 years. The lower duration reflects the shorter expected remaining life of SPF.

At end-2019, the assets of Innovation Fund Denmark amounted to kr. 14 billion nominally. In accordance with the strategy, the assets of the Fund have been invested more or less evenly in short-term, medium-term and long-term Danish government bonds. In 2019, the Fund transferred kr. 400 million to the Ministry of Higher Education and Science.

At end-2019, the assets of the Fund for Better Working Environment and Labour Retention amounted to 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 redemption of bonds 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 made no transfers in 2019.

#### Green issuance

Danmarks Nationalbank and the Ministry of Finance are looking into the possibility of adding a green element to the Danish issuance programme in a way that ensures a continued well-functioning and liquid market for Danish government bonds. This work will continue until a final political decision on green issuance is made.

A liquid government bond market is essential, as a high degree of tradability means that investors are willing to pay a higher price for the bonds. Ultimately, this leads to lower financing costs for the Danish government. High liquidity is ensured e.g. by having a sufficiently high outstanding volume in the individual bond series.

and expen	diture in	2019	
Kr. million	SPF	Innovation Fund Denmark	Fund fo Better Working Environment and Labour Retention
Revenue:			
Interest etc.1	1,183	246	-2
Expenditure:			
Transfer to relevant ministry	13,350	400	
Pension yield tax²	4	-	
Net revenue	-12,171	-154	-7
Net		-154	

- 2. Pension yield tax is payable on the return for the preceding

The introduction of green issues will normally lead to fragmentation of the issuance programme, as the number of bond series will increase and the volume in each series decrease. This may lead to loss of liquidity and hence to higher financing costs for the Danish government. Conversely, green issues may widen the investor base by attracting green investors. The market for green bonds is growing steadily, and in general demand for green assets is deemed to be high.

Against this background, work is underway to develop a new model for green issuance that will make it possible to meet the rising demand for green assets without compromising liquidity in the market for Danish government securities.

A more extensive description of the model for green issuance can be found at Danmarks Nationalbank's website (link).

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

Thorsten Meyer Larsen

Head of monetary policy operations and Government Debt

tml@nationalbanken.dk +45 3363 6131

BANKING AND MARKET

## Danish government borrowing and debt 2019

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Central-Government Debt year-end 2009-1	9 (continues	next page)			Table
Kr. million	2009	2010	2011	2012	2013
A. Loan					
Domestic debt					
- Fixed-rate bonds, nominal	505,973	556,900	606,627	620,695	615,90
- Inflation-linked bonds¹	-	-	-	10,207	23,25
- Fisheries Bank bonds	995	887	786	684	594
- Lottery bonds	100	-	-	-	
- Treasury bills	-	25,460	44,200	44,940	32,300
- Index-linked loans and loan package	-8,197	2,974	2,974	-1,490	-1,490
- Currency swaps from kroner to euro (net) <sup>2</sup>	-10,956	-9,808	-8,660	-7,512	-6,364
Domestic debt, total	487,915	576,413	645,927	667,524	664,198
Foreign debt³					
- in dollars	10,218	9,901	8,957	7,662	6,21
- in euro	129,351	104,811	102,861	82,338	69,689
- in other currencies and multi-currency	19	18	-	-	
Foreign debt, total	139,588	114,731	111,818	90,000	75,908
Domestic and foreign debt, total	627,509	691,144	757,745	757,524	740,10
B. Collateral related to swaps <sup>4</sup>	-	-	-	-	3,596
C. Government deposits with Danmarks Nationalbank <sup>5</sup>	-210,932	-177,282	-223,100	-161,991	-161,95
D. The Social Pension Fund, The Fund for Better Working Environment and Labour Retention and The Danish National Innovation Fund					
- Government securities	-77,720	-75,511	-69,351	-70,859	-65,550
- Other securities	-37,376	-52,075	-51,393	-37,902	-32,352
The three funds, nominal value, total	-115,096	-127,587	-120,744	-108,761	-94,902
E. Bonds to finance social housing	-	-	-	-	
Central-government debt, total (A+B+C+D+E)	301,481	386,275	413,901	486,771	486,84
Central-government debt, per cent of GDP	17.5	21.3	22.4	25.7	25.:

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

<sup>1.</sup> Inflation-linked bonds are compiled as indexed value at end-year.

<sup>2.</sup> Currency swaps from kroner to euro less currency swaps from euro to kroner.

<sup>3.</sup> Foreign loans are compiled after end-exposure.

<sup>4.</sup> Cash-collateral for the market value of the swap portfolio. A positive number means the counterparties net have posted collateral.

<sup>5.</sup> Deposits include deposits of the government funds.

Central-Government Debt year-end 2009-1	L9 (continu	ıed)				Table
Kr. million	2014	2015	2016	2017	2018	2019
A. Loan						
Domestic debt						
- Fixed-rate bonds, nominal	637,617	584,356	572,020	570,222	543,732	543,075
- Inflation-linked bonds¹	35,531	35,667	38,193	38,765	43,897	44,95
- Fisheries Bank bonds	507	424	343	272	200	129
- Lottery bonds	-	-	-	-	-	
- Treasury bills	29,800	29,840	27,180	32,740	30,400	23,980
- Index-linked loans and loan package	-	-	-	-	-	
- Currency swaps from kroner to euro (net) <sup>2</sup>	-5,215	-4,067	-2,942	-1,872	-1,022	-400
Domestic debt, total	698,240	646,220	634,794	640,127	617,207	611,74
Foreign debt³						
- in dollars	5,778	5,047	3,795	2,152	1,244	49
- in euro	53,207	28,223	8,044	-	-	
- in other currencies and multi-currency	-	-	-	-	-	
Foreign debt, total	58,986	33,270	11,839	2,152	1,244	49
Domestic and foreign debt, total	757,225	679,490	646,633	642,279	618,450	612,23
B. Collateral related to swaps <sup>4</sup>	3,804	2,859	1,610	1,005	690	26
C. Government deposits with Danmarks Nationalbank <sup>5</sup>	-213,099	-157,376	-110,928	-134,689	-111,674	-70,41
D. The Social Pension Fund, The Fund for Better Working Environment and Labour Retention and The Danish National Innovation Fund						
- Government securities	-64,825	-62,399	-63,233	-52,084	-48,454	-32,26
- Other securities	-25,259	-17,172	-8,834	-7,432	-1,675	-1,67
The three funds, nominal value, total	-90,084	-79,571	-72,067	-59,516	-50,129	-33,94
E. Bonds to finance social housing	-	-	-	-	-30,298	-86,78
Central-government debt, total (A+B+C+D+E)	457,846	445,402	465,249	449,079	427,039	421,36
Central-government debt, per cent of GDP	23.1	21.9	22.1	20.6	19.0	18.

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

<sup>1.</sup> Inflation-linked bonds are compiled as indexed value at end-year.

<sup>2.</sup> Currency swaps from kroner to euro less currency swaps from euro to kroner.

<sup>3.</sup> Foreign loans are compiled after end-exposure.

<sup>4.</sup> Cash-collateral for the market value of the swap portfolio. A positive number means the counterparties net have posted collateral.

<sup>5.</sup> Deposits include deposits of the government funds.

Central government's financing requirement 2017-19			Table 2
Kr. billion	2017	2018	2019
Current, investment and lending budget	30.9	41.4	na.
On-lending of government loans	-1.4	-48.5	na.
Distributed capital losses on issue and due interest <sup>1</sup>	3.0	2.6	na.
Other capital items <sup>2</sup>	-12.6	-2.7	na.
Net cash balance	20.0	-7.2	7.7
Net financing requirement (= -Net cash balance)	-20.0	7.2	-7.7
Redemption on long-term domestic government debt <sup>3</sup>	84.5	95.9	135.9
Redemption on T-bills <sup>4</sup>	27.2	32.7	30.4
Domestic financing requirement⁵	91.7	135.8	158.6
Redemption on long-term foreign government debt <sup>6</sup>	9.3	1.0	0.8
Redemption on Commercial Paper <sup>4</sup>	0.0	0.0	0.0
Financing requirement	101.0	136.8	159.4

Source: Central Government Accounts. 2019 are based on Danmarks Nationalbank's end-year specification, which may differ from accounting Chartes.

- 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 colleteral related to swaps. From 2019 also including transactions related to financing of social housing, which was previously included under "On-lending of government loans".
- $_{\mbox{\scriptsize 4.}}$  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 de	ebt 2015-19				Table 3
Kr. billion	2015	2016	2017	2018	2019
Domestic debt	21.6	21.5	18.5	15.6	14.2
Foreign debt	-0.2	0.1	0.0	-0.1	-0.1
Central government's account at Danmarks Nationalbank	0.6	0.3	0.2	0.8	0.5
Government funds	-3.2	-4.1	-1.5	-1.2	-1.4
Bonds for financing social housing	-	-	-	-0.0	-0.0
Central-government debt	18.8	17.8	17.1	15.1	13.2
Central-government debt, per cent of GDP	0.9	0.8	0.8	0.7	0.6
On-lending	-2.5	-2.1	-2.0	-1.5	-1.4
Central-government debt, adjusted for on-lending	16.4	15.7	15.2	13.6	11.8
Central-government debt, adjusted for on-lending, per cent of GDP	0.8	0.7	0.7	0.6	0.5

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

Source: Central Government Accounts. Figures for 2019 are provisional figures from the central government's accounting.

ISIN code	Coupon per cent	Name	Opened	Redemption date	Issuance, kr. million, nominal	lssuance kr. millior market valu
Government bonds						
DK0009923641	0.25	Bullet loan 2020	17 May 2017	15 Nov 2020	2,830	2,87
DK0009923997	0.25	Bullet loan 2022	8 May 2019	15 Nov 2022	21,480	22,14
DK0009923054	1.5	Bullet loan 2023	4 Sep 2012	15 Nov 2023	7,970	8,68
DK0009923138	1.75	Bullet loan 2025	20 May 2014	15 Nov 2025	3,480	3,99
DK0009923567	0.5	Bullet loan 2027	25 Jan 2017	15 Nov 2027	1,420	1,45
DK0009923807	0.5	Bullet loan 2029	23 Jan 2019	15 Nov 2029	45,280	48,29
DK0009923724	0.1	DGBi 2030	7 Feb 2018	15 Nov 2030	4,075	4,64
DK0009922320	4.5	Bullet loan 2039	11 Nov 2008	15 Nov 2039	960	1,82
Government bonds,	total				87,495	93,91
T-bills						
DK0009816993	0	T-bill 2019 I	30 Aug 2018	1 Mar 2019	2,660	2,66
DK0009817025	0	T-bill 2019 II	29 Nov 2018	3 Jun 2019	19,400	19,42
DK0009817108	0	T-bill 2019 III	27 Feb 2019	3 Sep 2019	30,900	30,96
DK0009817371	0	T-bill 2019 IV	28 May 2019	2 Dec 2019	25,180	25,24
DK0009817454	0	T-bill 2020 I	30 Aug 2019	2 Mar 2020	22,480	22,53
DK0009817538	0	T-bill 2020 II	28 Nov 2019	2 Jun 2020	1,500	1,50
T-bills, total					102,120	102,34
Domestic issuance, to	otal				189,615	196,26

Central-government domestic de	ot as or end-2	1019				Table 5.
	Outstanding	lasusassas		Outstanding	Dadamahian	ICI
Kr. million, nominal value	amount end-2018	Issuance 2019	tions 2019	amount end-2019	Redemption date	ISI cod
Government bonds, fixed interest rate						
Bullet loans						
4 per cent bullet loan 2019	62,732	-	62,732	-	15 Nov 2019	DK000992240
0.25 per cent bullet loan 2020	50,555	2,830	-	53,385	15 Nov 2020	DK000992364
3 per cent bullet loan 2021	74,320		6,065	68,255	15 Nov 2021	DK000992267
0.25 per cent bullet loan 2022	-	21,480	-	21,480	15 Nov 2022	DK000992399
1.5 per cent bullet loan 2023	57,970	7,970	1,525	64,415	15 Nov 2023	DK000992305
7 per cent bullet loan 2024	11,699	-	4,820	6,879	10 Nov 2024	DK000991813
1.75 per cent bullet loan 2025	67,615	3,480	6,515	64,580	15 Nov 2025	DK000992313
0.5 per cent bullet loan 2027	87,990	1,420	2,420	86,990	15 Nov 2027	DK000992356
0.5 per cent bullet loan 2029	-	45,280	-	45,280	15 Nov 2029	DK000992380
4.5 per cent bullet loan 2039	130,850	960	-	131,810	15 Nov 2039	DK000992232
Inflation-linked bonds¹						
0.1 per cent inflation-linked 2023	32,886	-	3,304	29,745	15 Nov 2023	DK000992293
0.1 per cent inflation-linked 2030	11,011	4,103	-	15,212	15 Nov 2030	DK000992372
Uamortisable						
5 per cent Dansk-Islandsk Fond 1918	1	-	-	1	Perpetual	
Government bonds, fixed interest rate, total	587,628	87,523	87,381	588,032		
T-bills						
T-bill I 2019	29,420	2,660	32,080	-	1 Mar 2019	DK000981699
T-bill II 2019	980	19,400	20,380	-	3 Jun 2019	DK000981702
T-bill III 2019	-	30,900	30,900	-	3 Sep 2019	DK00098171
T-bill IV 2019	-	25,180	25,180	-	2 Dec 2019	DK00098173
T-bill I 2020	-	22,480	-	22,480	2 Mar 2020	DK00098174
T-bill II 2020	-	1,500	-	1,500	2 Jun 2020	DK00098175
T-bills, total	30,400	102,120	108,540	23,980		
Fisheries Bank of Denmark Bonds						
5 per cent 2019	50	-	50	0	1 Nov 2019	DK000960462
5 per cent 2025	151	-	22	129	1 Nov 2025	DK000960489
Fisheries Bank Bond, total	200	-	71	129		
Domestic government securities, total	618,229	189,643	195,992	612,141		
Swaps from kroner to dollar	-1,022	-	-622	-400		
Central-government domestic debt, total	617,207	189,615	195,370	611,741		

<sup>1.</sup> 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.

	per cent	Name	date	kr. million
Loan	-	-	-	
Other foreign debt		Currency sv	vap in dollar²	497
Foreign debt, total				497

	Krone interest rate swaps	Euro interest rate swaps			
Expiry year	Net exposure, kr. million	Net exposure, million euro	Net exposure, kr. million		
2020	-	-			
2021	-	-			
2022	-	-			
2023	-	-			
2024	-	-			
2025	-	-150	-1,12		
2026	-	-650	-4,85		
2027	600	-			
2028	600	-			
Interest-rate swaps, total	1,200	-800	-5,970		

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.

<sup>1.</sup> Converted to kroner on the basis of the following exchange rate as of 30 December 2019: euro = 746.97.

Kr. million	2015	2016	2017	2018	201
On-lending					
DR (Danish Broadcasting Corporation)	3,140	3,140	3,002	3,044	2,90
Danish Ship Finance <sup>1</sup>	5,902	4,534	2,775	1,751	88
EKF (Danish Export Credit Agency)	15,810	14,933	13,248	12,853	9,80
Energinet.dk	18,216	20,924	22,980	25,505	28,72
Femern Belt	1,950	2,350	2,550	6,200	11,75
Femern Landworks	725	1,325	1,425	2,600	3,90
The Financial Stability Company	800	-	-	-	
Fjord Link Frederikssund	-	530	530	650	75
Investment Fund for Development Countries	-	-	-	-	14
The Metro Company	10,140	15,035	17,585	21,990	29,44
The Danish North Sea Fund	-	-	-	-	
SSI (Statens Serum Institut)	387	387	-	-	
The Great Belt Bridge	16,143	15,696	15,110	17,040	17,27
Sund og Bælt Holding	400	500	500	300	65
CPH City & Port Development	15,500	14,800	14,450	13,850	12,70
Øresund Landworks	10,062	10,342	10,302	10,322	10,72
Greater Copenhagen Light Rail	100	100	-	350	1,10
Ireland	2,985	2,974	-	-	
Total	102,260	107,569	104,457	116,456	130,74
Guarantees					
DR (Danish Broadcasting Corporation)	816	796	776	436	43
The Danish State Railways	4,632	3,117	3,526	1,687	74
Femern Belt	-	36	-	-	
Femern Landworks	-	39	4	6	2
Fjord Link Frederikssund	-	-	-	-	
The Danish Guarantee Fund for Non-life Insurers	-	-	-	-	53
Kalaallit Airports International A/S (KAIR INT)	-	-	-	-	
The Great Belt Bridge	7,176	6,239	5,971	3,955	2,28
Sund og Bælt Holding	28	4	100	-	
Øresund Landworks	456	517	495	447	43
The Øresund Bridge	15,011	14,202	13,009	13,189	11,97
Total	28,120	24,950	23,882	19,720	16,44

Note: Guarantees are inclusive of guaranteed swaps.

Outstanding amount in the inflation-linked loans are measured at indexed nominal value at year-end.

<sup>1.</sup> Re-lending in dollar to Danish Ship Finance is calculated to kroner.

			Fund for Better Working			
Kr. million,	Govern-	Social Pen-	Environment and	Innovation	Total buy-backs	Hereof buy-backs in
market value	ment	sion Fund	Labour Retention	Fund Denmark	from the market	switch operations
4 per cent bullet loan 2019	41,566	-11,832	-	-3,431	26,302	
3 per cent bullet loan 2021	6,553	-	698	1,077	8,327	7,630
1.5 per cent bullet loan 2023	1,671	-	-	-	1,671	1,67
0.1 per cent DGBi 2023i	3,538	-	-	-	3,538	3,536
7 per cent bullet loan 2024	6,628	-3,660	-	-1,065	1,902	1,902
1.75 per cent bullet loan 2025	7,367	-	-	-	7,367	6,918
0.5 per cent bullet loan 2027	2,596	-	-	4,031	6,627	4,800
Total	69,918	-15,493	698	611	55,734	26,459