

# **Risk Report 2019Q4**

Published 31 March 2020

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The Risk Report has been prepared by Realkredit Danmark's analysts for information purposes only. Realkredit Danmark will publish an updated Risk Report quarterly.

The Risk Report offers an update on the performance of mortgage collateral supporting mortgage bonds and mortgage covered bonds (covered bonds) issued by Realkredit Danmark.

Contents of the report falls into two parts. The first part contains general market information relevant to the performance of mortgage collateral. The second part contains Realkredit Danmark specific information. Contents of the report are:

## **1 Key Market Indicators**

- House Prices
- Homeowners Equity
- Geographical Dispersion
- Unemployment and Real Wage Growth
- Homeowner Affordability
- Foreclosures
- Danish economic outlook

## **2 Key Collateral Indicators**

- Dispersions Loan to Value Ratios
- Loan to Value Ratios and Borrower Classifications
- Mortgage Collateral Breakdowns — Total, Capital Centre S and Capital Centre T
- Borrower Exposure to Interest Rates
- Arrears and Repossessions
- Over Collateralisation and Capitalisation
- Supplementary Collateral
- Guarantees
- Market Risk Exposures and Liquidity

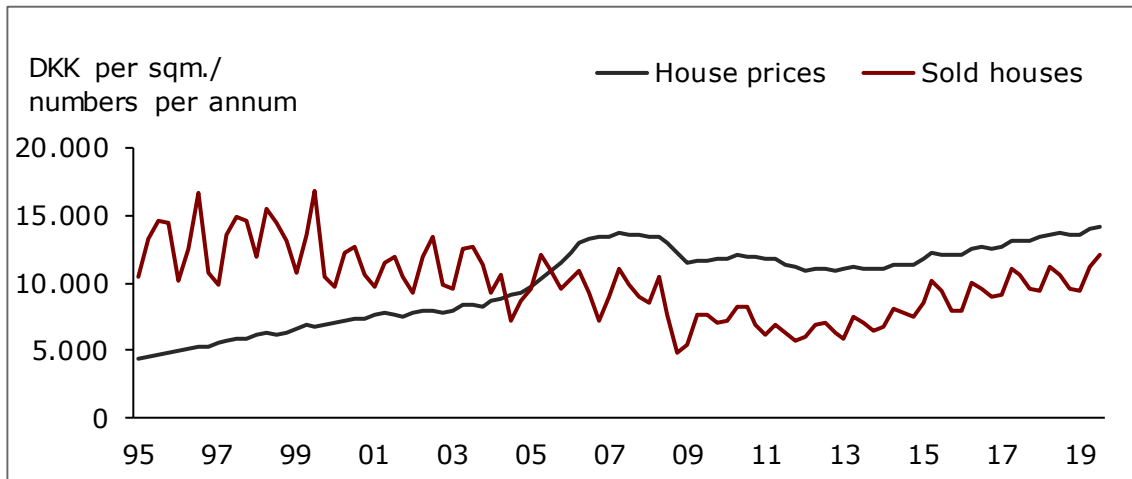
# Key Market Indicators

General Market Information

# 1 House Prices and Homeowners Equity

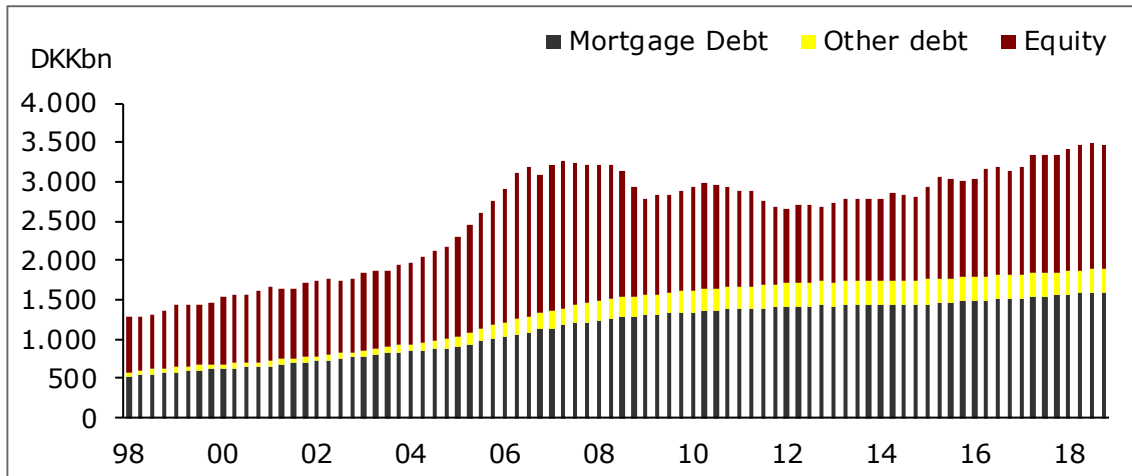
## House Price Trends

- House prices on the rise have been driven by historically low interest rates in combination with an economic upswing
- The Danish Central Bank expects an increase in house prices of around 3.5 per cent per annum in 2019
- Number of houses sold is back to more "normal" levels



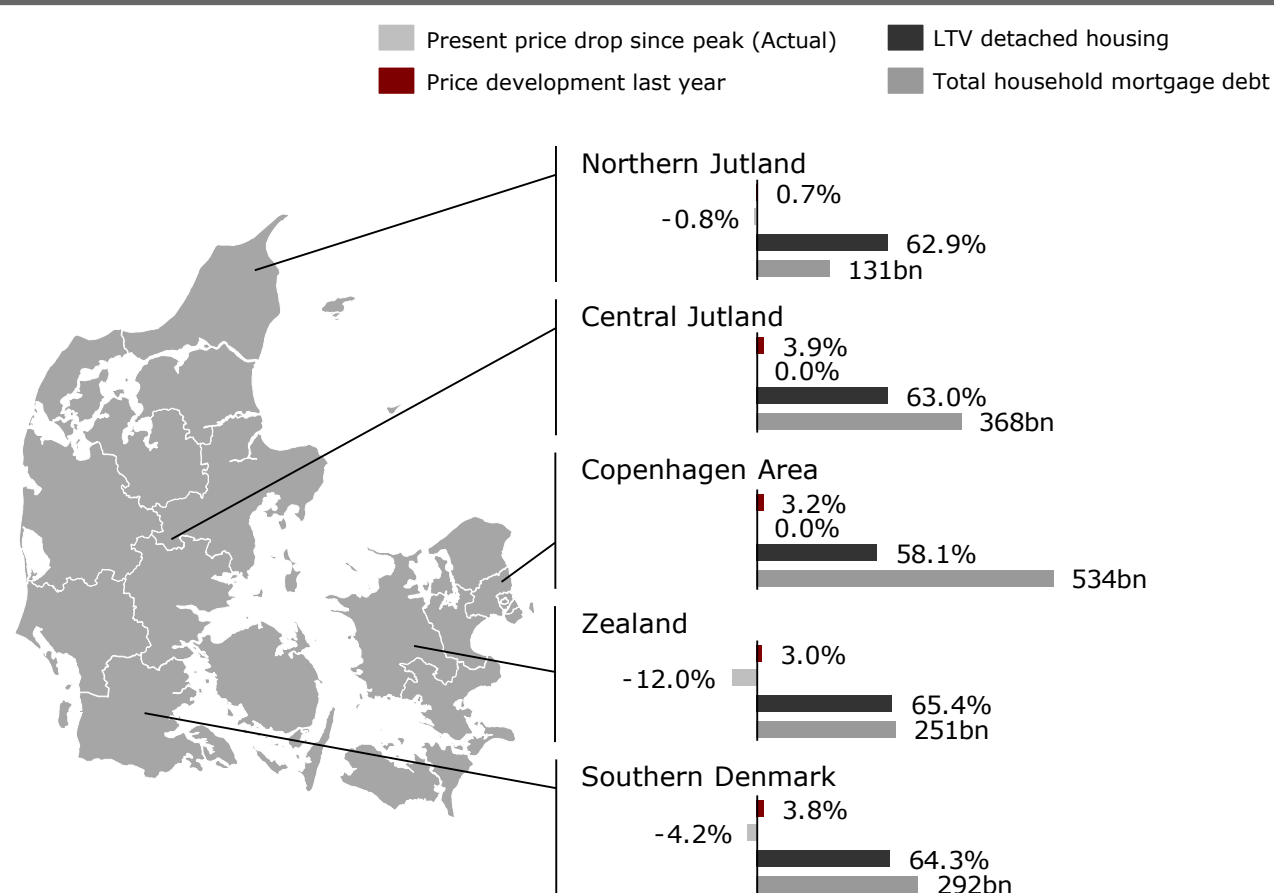
## Homeowners Equity

- Homeowners' equity was DKK 1,586bn end 2018Q4
- Since the beginning of 2012 homeowners' equity has risen by DKK 650bn
- In the same period total lending increased by DKK 178bn and thus the total value of the housing stock has increased by DKK 828bn



# 1 Geographical Dispersion

## Private lending in Denmark in total

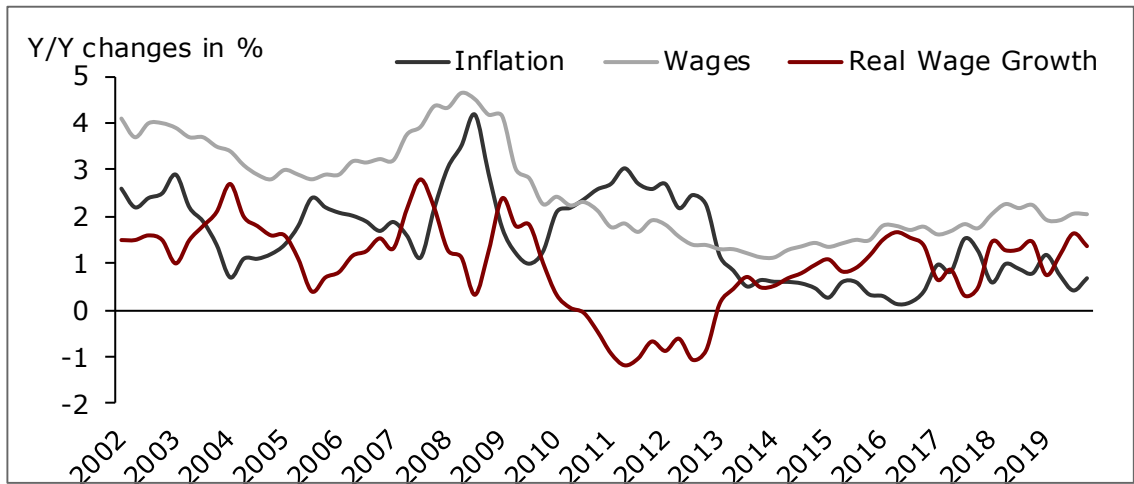


- House prices are generally increasing
- Total mortgage debt in the Copenhagen area is the highest in the country. However, LTV is only 58.1% and house prices are on the rise

# 1 Unemployment and Real Wage Growth

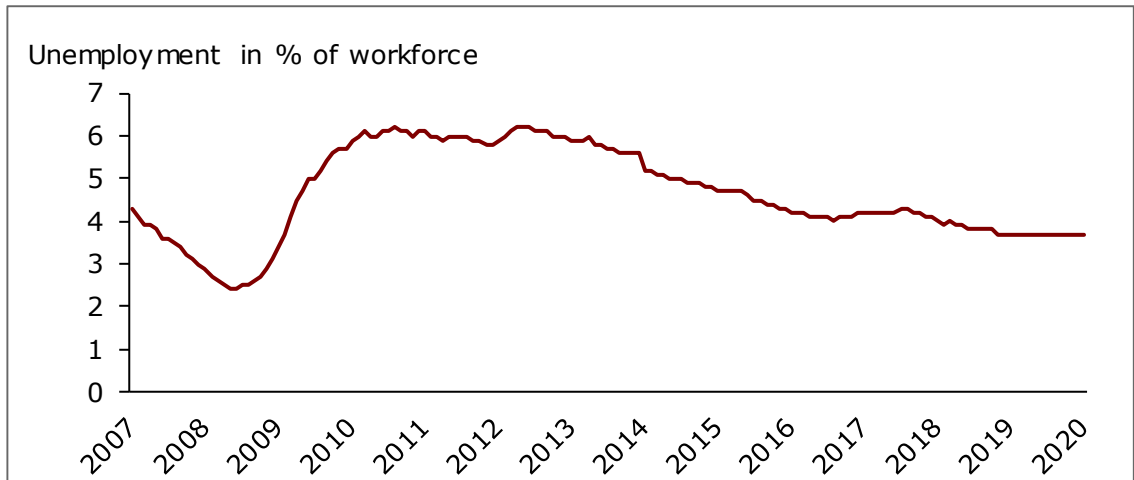
## Real Wage Growth

- Real wage growth in Q4 2019 stood at 1.37%.



## Unemployment

- Gross unemployment rate has declined over the past years and stood at 3.7 per cent end Q4 2019
- In a historical perspective unemployment is on a low level

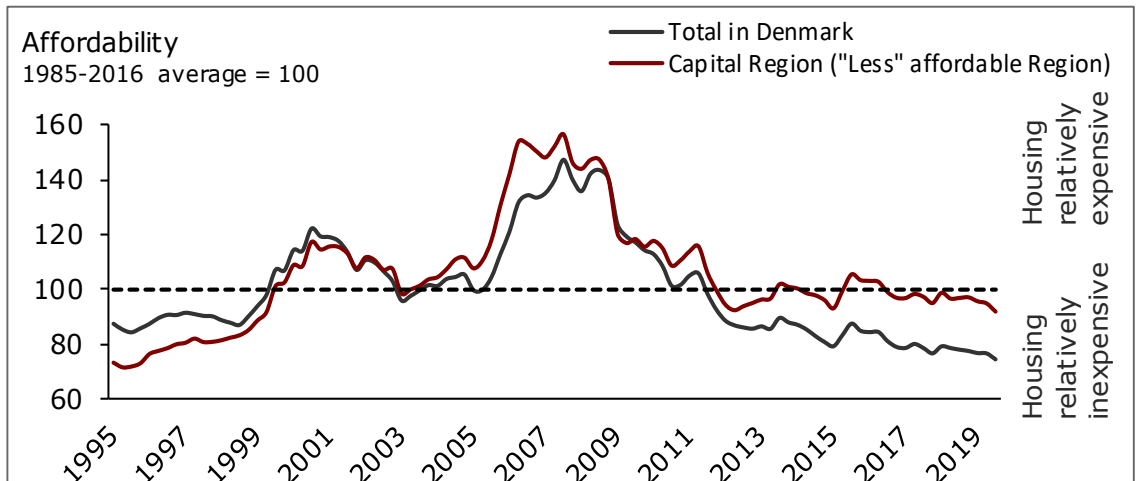


<sup>1</sup> Gross unemployment rate defined as net unemployment plus persons in activation schemes

# 1 Homeowner Affordability and Foreclosures

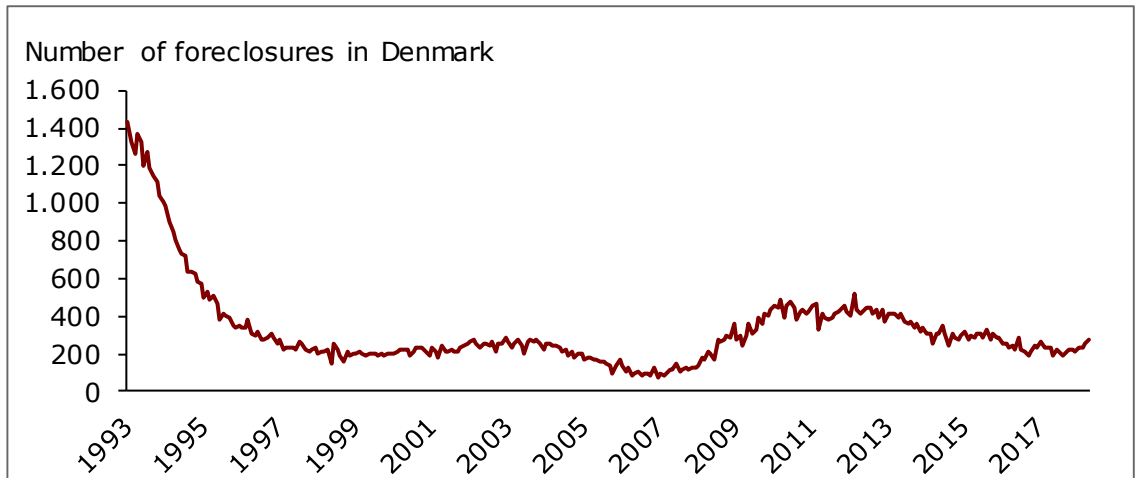
## Homeowner Affordability

- Housing remains affordable compared to a 30 year average. However, the Capital region is very close to average (index 100)
- Recent house price inflation is off-set by low interest rates
- The likely impact of interest rate hikes would be a downward trend in house prices.



## Foreclosures

- The number of foreclosed properties in Denmark in December 2019 was 186
- The number of foreclosures is at "normal levels"
- The duration of a foreclosure is approx. 6 months from missed payments to completion



# 1 Political measures and outlook

Denmark <span style="color: grey;">■</span> Euro Zone <span style="color: blue;">■</span>	2019		2020		2021	
GDP	2.2	1.2	1.2	0.5	1.4	1.3
Private Consumption	1.9	1.3	1.8	1.0	2.0	1.3
Fixed investments	2.9	4.2	0.5	0.3	1.3	1.6
Export	1.9	2.5	0.9	1.4	2.0	2.5
Unemployment %	3.7	7.6	3.8	7.5	3.8	7.4

## Danish Economy Outlook

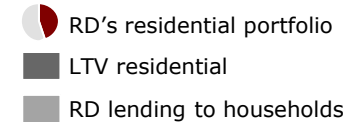
- The growth in the Danish and European economy is expected to be 1.2 and 0.5 percent, respectively, in 2020
- Interest rates are a key element in the household economy
- In September the ECB lowered its key policy rate from -0,4% to -0,5%. We expect unchanged policy rate over the coming 12 months
- The Danish Central Bank followed suit and lowered the deposit rate from -0.65% tp -0.75% p.a.
- In general the Danish Central Bank follows the ECB due to the fixed exchange rate regime vis-à-vis the euro. No independent rate hikes are expected the coming 12 months



# Key Collateral Indicators

Realkredit Danmark Specific Information

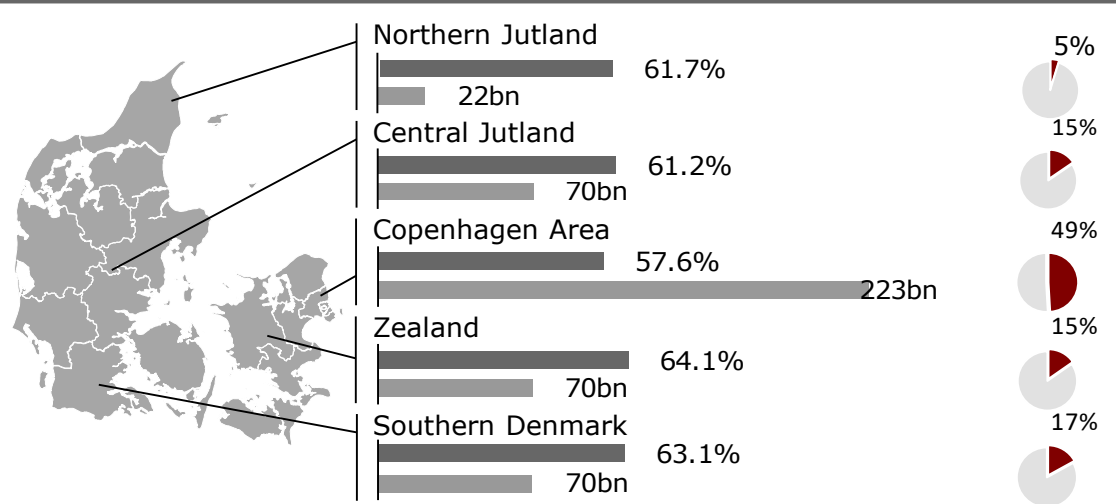
## 2 Dispersion and Loan to Value Ratios



### Dispersion of RD's residential portfolio

- RD's loan portfolio is concentrated in the Copenhagen area and on Zealand
- Homeowner equity remains highest in the Copenhagen area which also is the region with the smallest LTV
- The affordability ratio in the capital region is now very close to index 100

### Geographical Dispersion in Realkredit Danmark



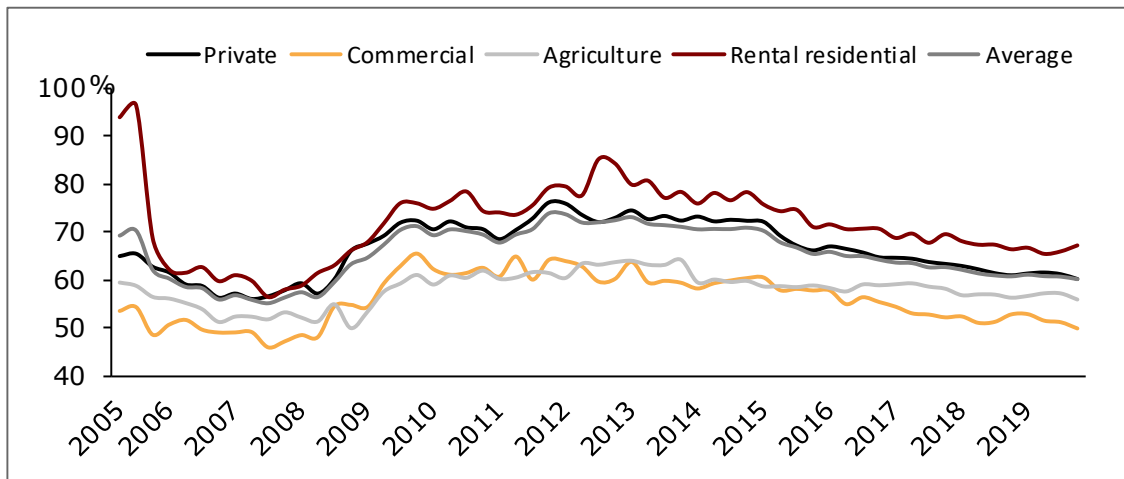
### Loan To Value Ratios

- Covered bonds are secured by a first claim on the mortgage collateral and the reserves of the issuer
- LTV ratios of the mortgage collateral are maximised by legislation at 80% in residential segments and 60% in commercial segments (70% if the outmost 10% are secured by additional collateral). Lending beyond these limits is prohibited
- LTV ratios are monitored on an ongoing basis based on current market values of the property and current prepayment value of the mortgages
- 39% of mortgage collateral securing covered bonds issued by Realkredit Danmark has a current LTV ratio of 20% or less. More than 71% has a current loan to value ratio lower than 40%
- Foreclosure costs are typically less than 15% of the outstanding loan balance

## 2 Loan To Value and Borrower Classifications

### Loan to Value

- Average loan to value ratios across market segments are 60.1% in Q4 2019 compared to 60.7% in Q4 2018
- LTV's for Commercial and Agriculture are based on few observations to confirm correct price levels



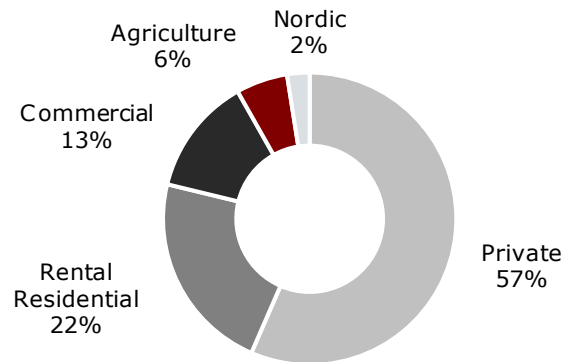
### Borrower Classifications

- Borrowers' financial strength is classified on a scale from 1 to 11, 1 being the highest score
- Approx. 2bn of total lending is secured by mortgages above the 80% LTV limit for which the borrowers' financial strength is classified 8-11 — equivalent to 0.3% of the portfolio

DKKbn	Rating Category (Scaled 1-11)			
	1-3	4-7	8-11	Total
LTV				
0-20 %	89	218	11	318
20-40 %	60	180	10	250
40-60 %	34	116	8	157
60-80 %	13	42	4	58
> 80 %	8	12	2	21
Total	203	568	34	805

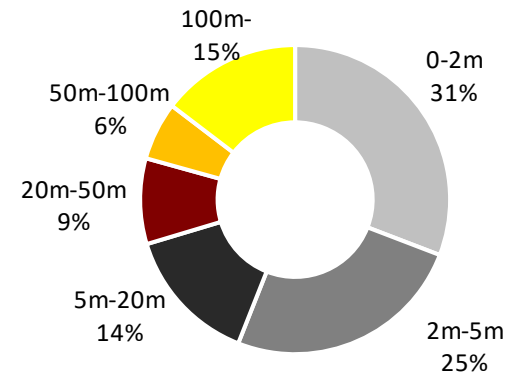
## 2 Collateral Breakdowns — Total portfolio

### Borrower Segmentation



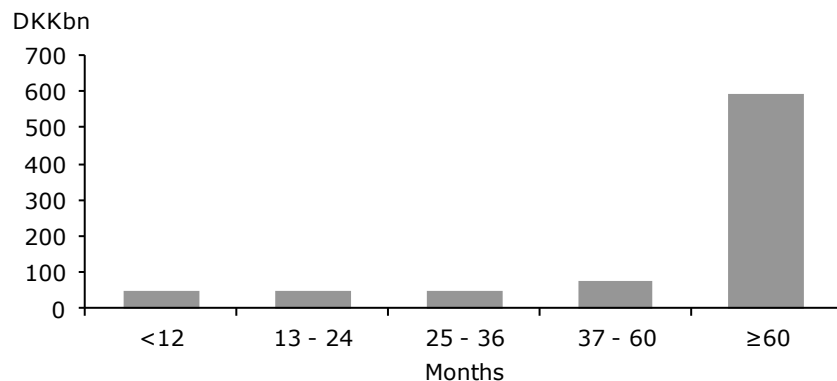
Note: Total lending distributed on segments

### Outstanding Loan Balance



Note: Total lending distributed on outstanding loan balances

### Portfolio Seasoning *defined by duration of customer relationship*



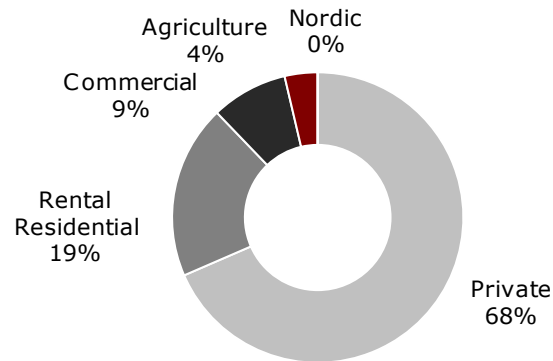
### Outstanding Debt in DKKbn by LTV ratio

Segment	0-20%	20-40%	40-60%	60-80%	>80%	Total DKKbn
Private	172	145	96	37	5	455
Commercial	54	42	20	3	2	121
Agriculture	18	15	10	2	1	46
Rental Residential	74	48	32	16	14	184
Weighted dist.	39%	31%	20%	7%	3%	100%
Total, DKKbn	318	250	157	58	21	805

Average LTV: 60.1%

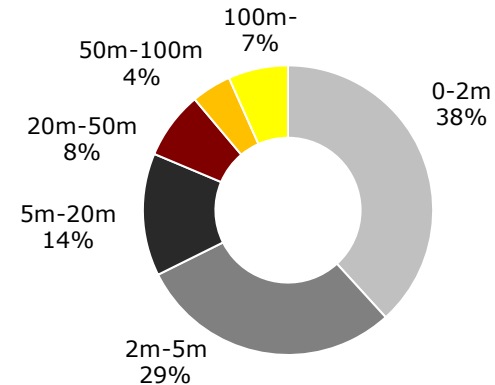
## 2 Collateral Breakdowns — Capital Centre S

### Borrower Segmentation



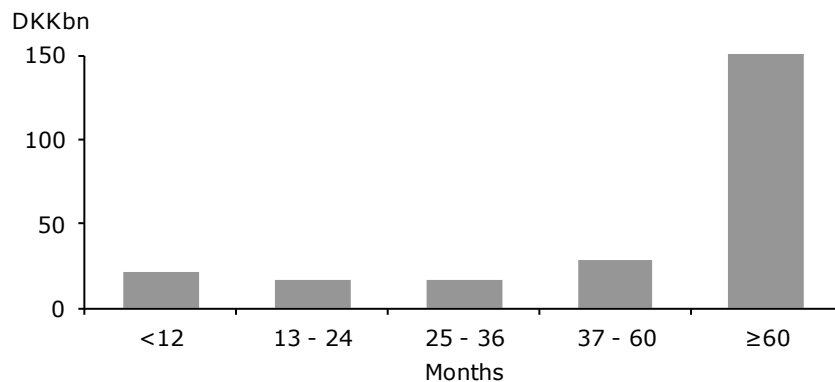
Note: Total lending distributed on segments

### Outstanding Loan Balance



Note: Total lending distributed on outstanding loan balances

### Portfolio Seasoning *defined by duration of customer relationship*



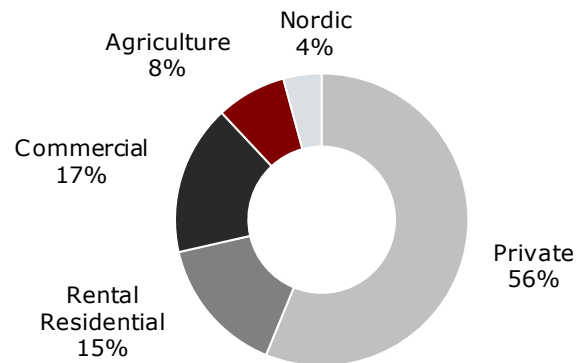
### Outstanding Debt in DKKbn by LTV ratio

Segment	0-20%	20-40%	40-60%	60-80%	>80%	Total DKKbn
Private	67	58	40	19	2	185
Commercial	8	8	5	1	1	23
Agriculture	3	3	3	1	0	10
Rental Residential	26	13	8	4	2	52
Weighted dist.	38%	30%	21%	9%	2%	100%
Total, DKKbn	104	82	56	24	5	271

Average LTV: 57.9%

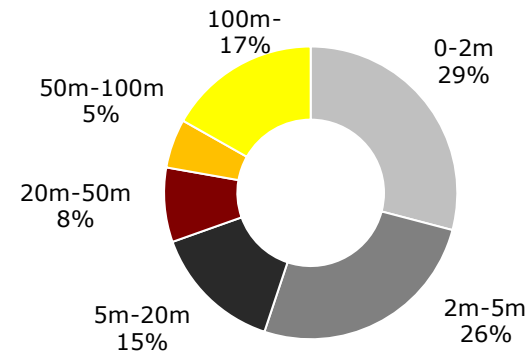
## 2 Collateral Breakdowns — Capital Centre T

### Borrower Segmentation



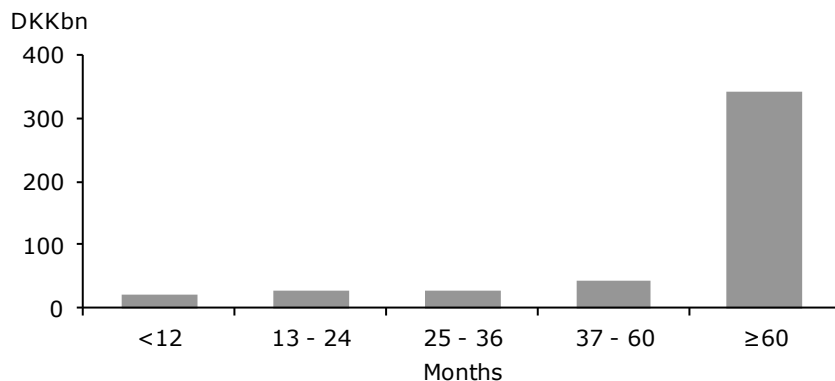
Note: Total lending distributed on segments

### Outstanding Loan Balance



Note: Total lending distributed on outstanding loan balances

### Portfolio Seasoning *defined by duration of customer relationship*



### Outstanding Debt in DKKbn by LTV ratio

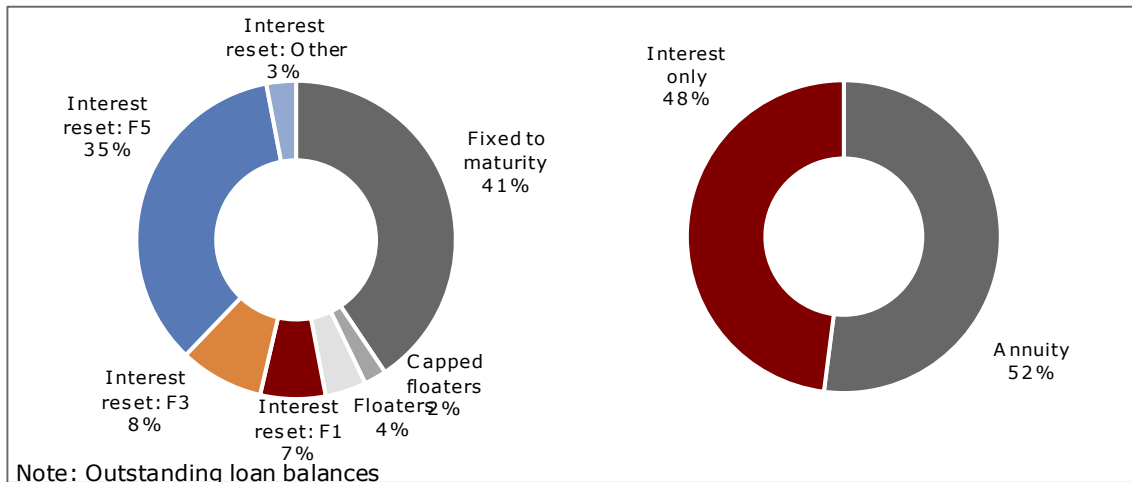
Segment	0-20%	20-40%	40-60%	60-80%	>80%	Total DKKbn
Private	100	84	54	18	3	259
Commercial	43	32	14	2	1	92
Agriculture	15	12	7	2	0	36
Rental Residential	29	22	15	6	3	74
Weighted dist.	41%	33%	20%	6%	1%	100%
Total, DKKbn	188	150	90	28	6	462

Average LTV: 56.1%

## 2 Borrower Exposure to Interest Rates

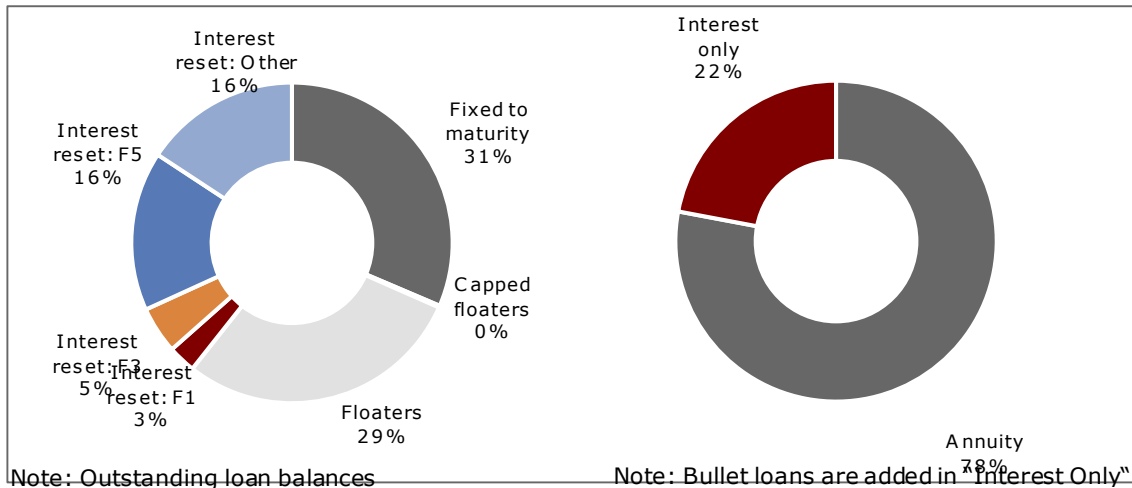
### Private Segment

- Homeowners must be able to service a 30-year fixed rate annuity loan of 4% for Realkredit Danmark to underwrite floating rate loans
- Originally, fixed rate mortgages were standard in the Danish market, but now interest reset accounts for 53%
- Expectations are for this percentage to decline since 30Y fixed rates are now only 0.5%
- Negative interest rates has been a reality for a while now



### Corporate Segments

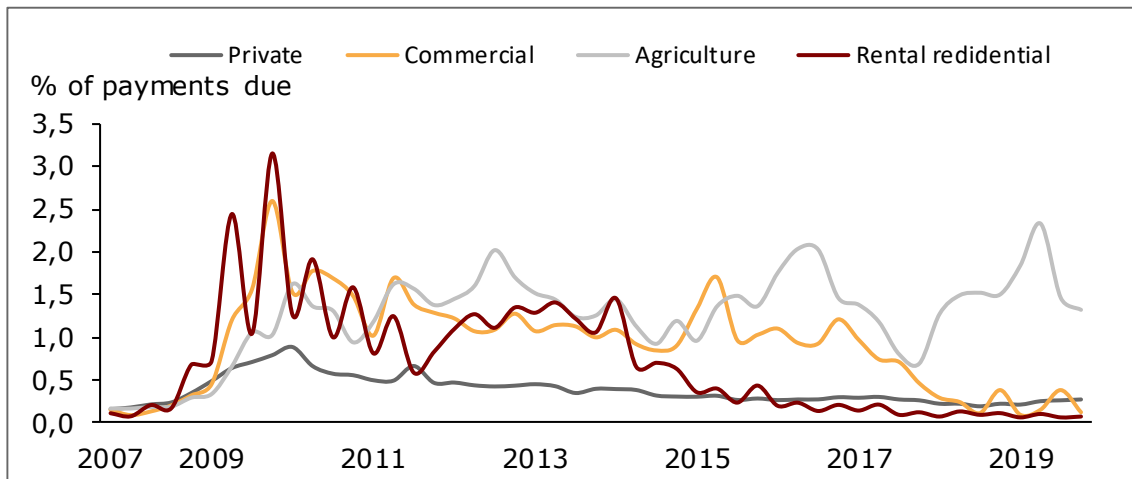
- 31% of all lending in corporate segments is fixed rate to maturity
- 69% are either interest reset (typically, rates are reset every 1, 3 or 5 years) or floating rate (base rates are either 6M CIBOR, 3M EURIBOR or 6M CITA)
- Bullets and Interest only loans make up 22% of corporate lending



## 2 Arrears and Repossessions

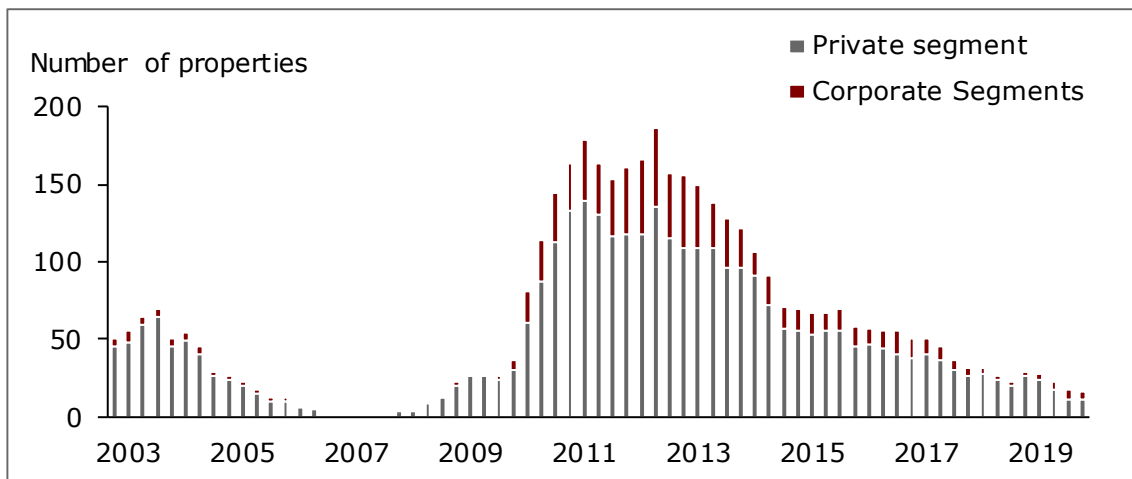
### Arrears (3 months)

- Total arrears stood at 0.25% end Q4 2019
- Arrears are rather volatile in the Rental residential segment. Down to 0.07% from a high of 3.15% in Q4 2009
- Arrears in the Commercial segment is now 0.12%.
- Arrears in agriculture has decreased to 1.32% in Q4 2019. The recent volatility is due to the development in few individual loans
- The Private segment is rather stable - now 0.27%



### Repossessions

- The stock of repossessed properties stood at 16 end Q4 2019 — down by 1 since Q2 2019
- This compares to a total stock of mortgage collateral of 442,976

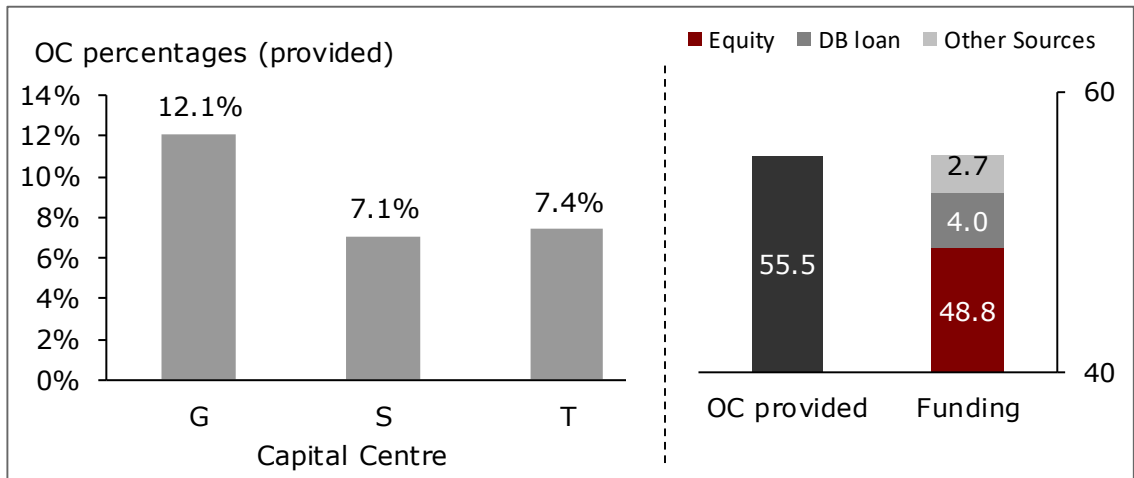




## 2 Over Collateralization and Capitalization

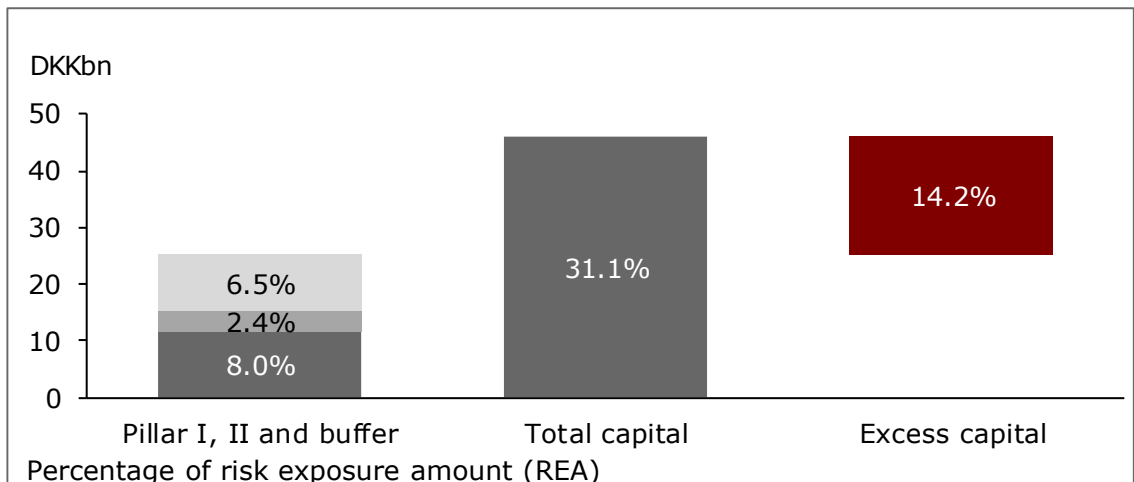
### Over Collateralisation

- Covered bonds issued by Realkredit Danmark are secured by mortgage collateral and reserves
- Reserves are invested in government exposures, covered bonds and bank exposures
- In case of bankruptcy Over Collateralisation will also be comprised by bondholders preferential claim



### Capitalisation

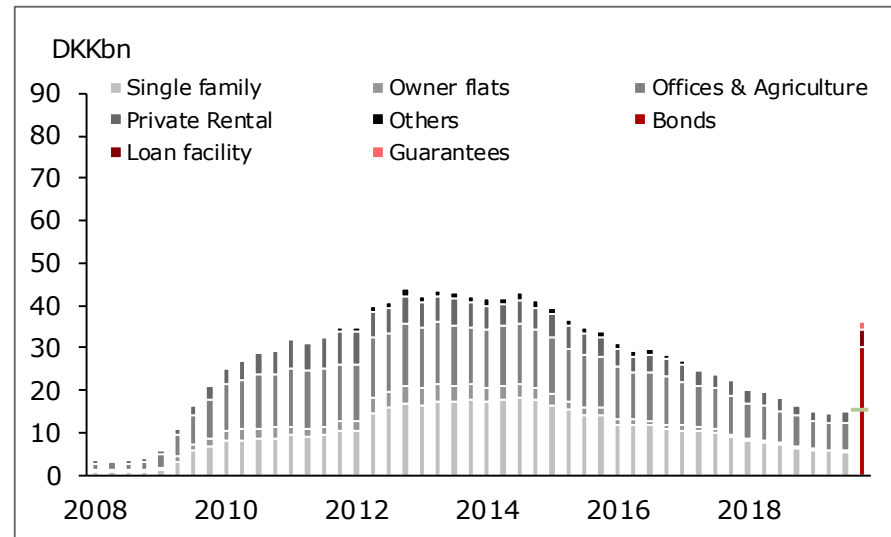
- End Q4 2019, Realkredit Danmark's solvency need was calculated at 15.4bn
- Including the combined buffer requirement, the capital need was 25.1bn
- With total capital of 46.2bn, Realkredit Danmark had 21.1bn in excess of the requirement including combined buffers



# Supplementary Collateral — Total in S and T

## Buffer in Capital Centres S and T

- End Q4 total OC provided was DKK 52.5bn in Capital Centres S and T of which 4.0bn was funded by a lending facility.
- DKK 18.3bn are used to cover the LCR floor requirement and may not be used as supplementary collateral
- Supplementary Collateral of DKK 15.1bn is required and loss guarantees of DKK 1.7bn are utilised i.e. a net requirement of DKK 13.4
- Hence, buffer for further growth in need for supplementary Collateral is DKK 20.8bn
- If the OC is insufficient to comply with Supplementary Collateral requirements, RD can transfer OC from the General Capital Centre or further utilise/write new loss guarantees within the 15% limitation of issued bonds



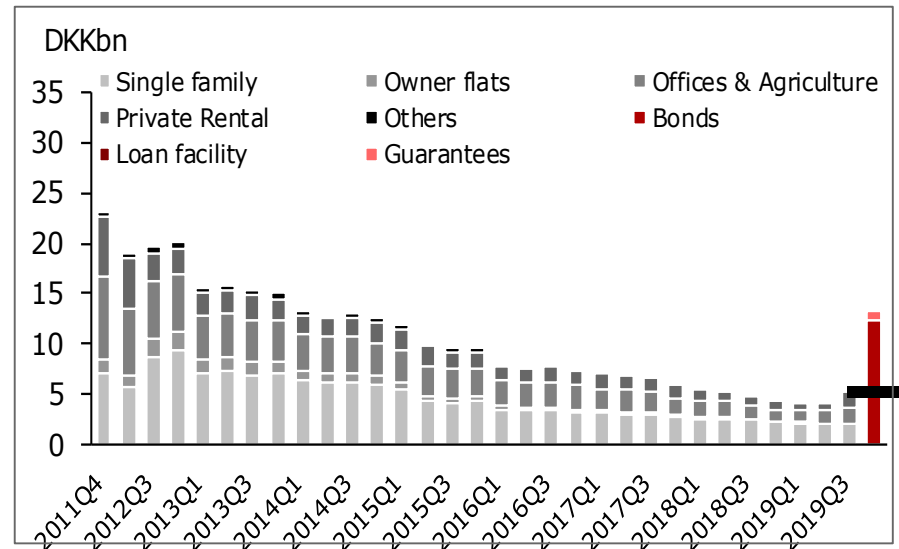
## Supplementary Collateral requirements

- If LTV limits are breached during the term of the loan the mortgage loan will only be eligible with the part that comply with the LTV limits. If eligible collateral is insufficient, Supplementary Collateral must be provided
- Increased need for Supplementary Collateral is due to
  - House price deflation
  - Properties selected for supervision
  - Refinancing and remortgaging of loans
  - Increased market value on bonds
- Loss Guaranties and eligible bonds can be used as Supplementary Collateral (bonds which also are used to comply with the solvency requirement) but no other asset types are eligible

# Supplementary Collateral — S

## Buffer in Capital Centre S

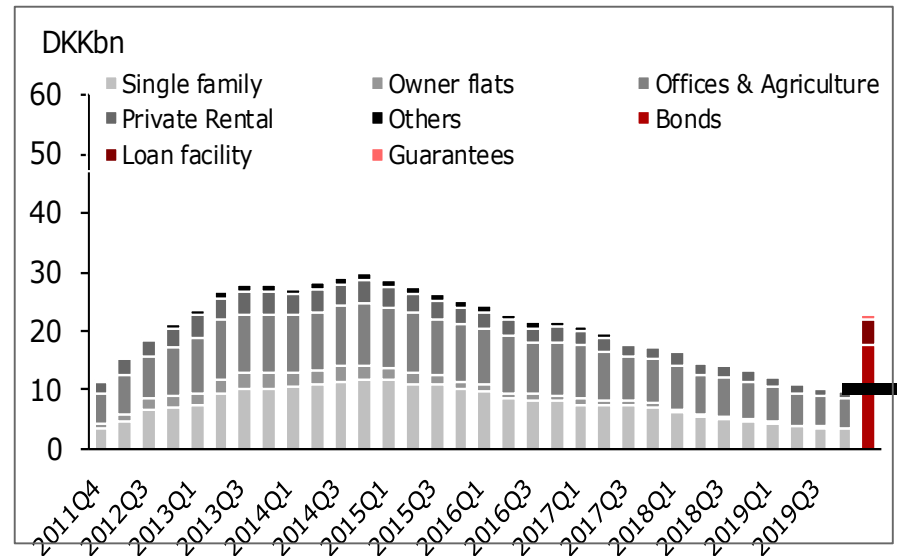
- End Q4 2019 total OC provided was DKK 19.2bn in Capital Centre S
- DKK 6.8bn are used to cover the LCR floor requirement and may not be used as supplementary collateral
- Supplementary Collateral of DKK 5.2bn is required and loss guarantees of DKK 0.9bn are utilised i.e. a net requirement of DKK 4.3bn
- Hence, buffer for further growth in need for supplementary Collateral is DKK 8.1bn
- If the OC is insufficient to comply with Supplementary Collateral requirements, RD can transfer OC from the General Capital Centre or Capital Centre T or further utilise/write new loss guarantees within the 15% limitation of issued bonds



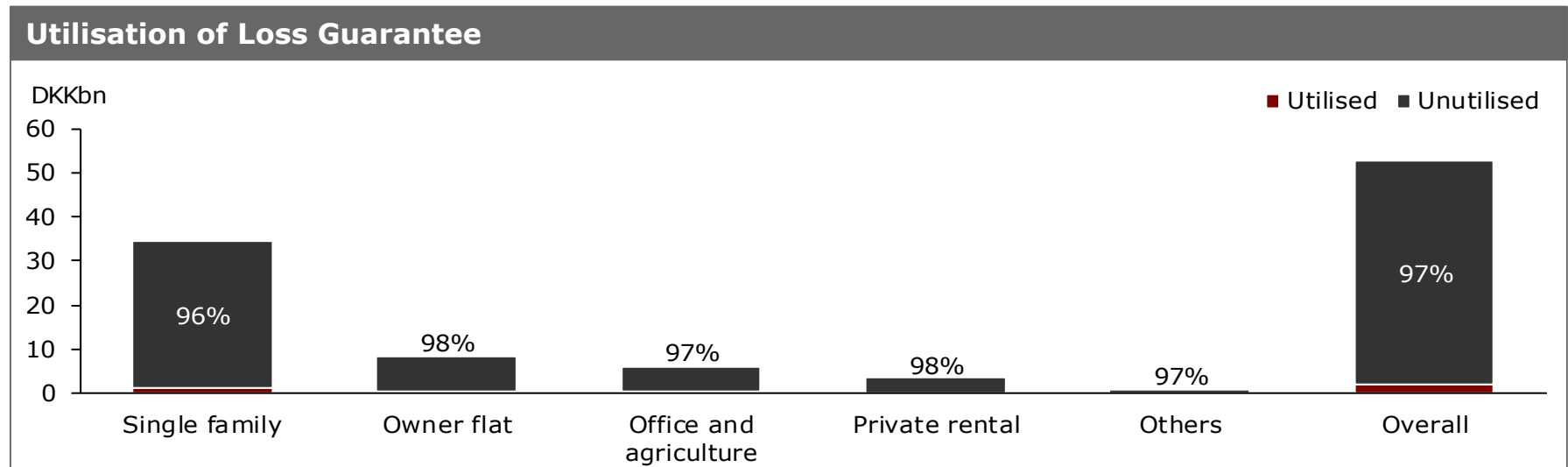
# Supplementary Collateral — T

## Buffer in Capital Centre T

- End Q4 2019 total OC provided was DKK 33.3bn in Capital Centre T of which 4.0bn was funded by a loan facility
- DKK 11.5bn are used to cover the LCR floor requirement and may not be used as supplementary collateral
- Supplementary Collateral of DKK 9.9bn is required and loss guarantees of DKK 0.8bn are utilised i.e. a net requirement of DKK 9.1bn
- Hence, buffer for further growth in need for supplementary Collateral is DKK 12.7bn
- If the OC is insufficient to comply with Supplementary Collateral requirements, RD can transfer OC from the General Capital Centre or Capital Centre S or further utilise/write new loss guarantees within the 15% limitation of issued bonds



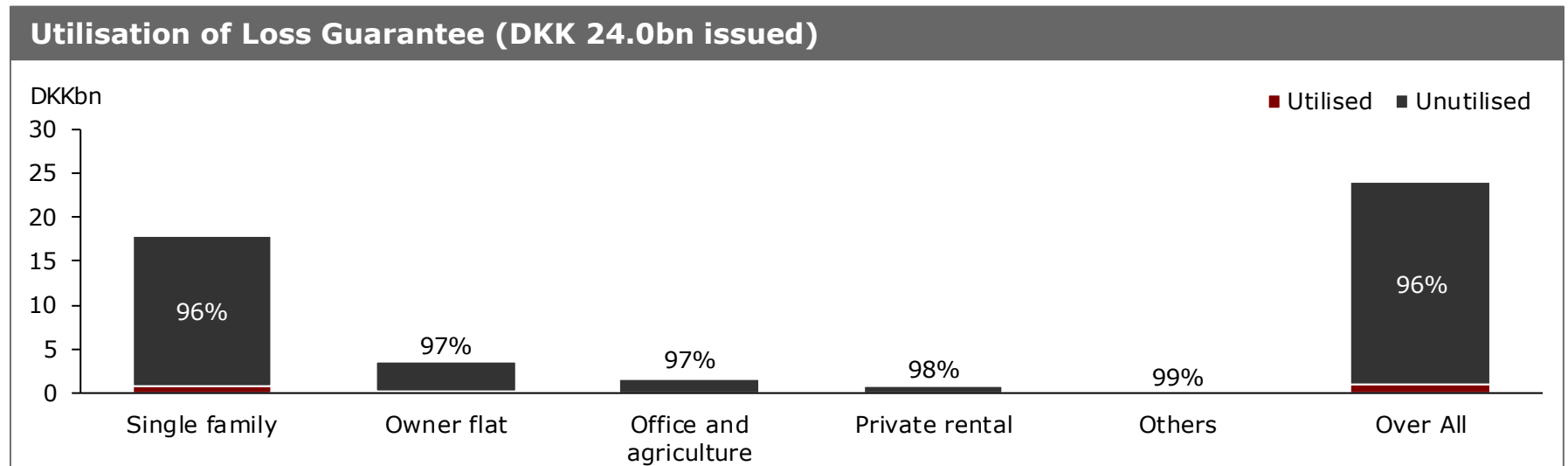
# Guarantees — Total



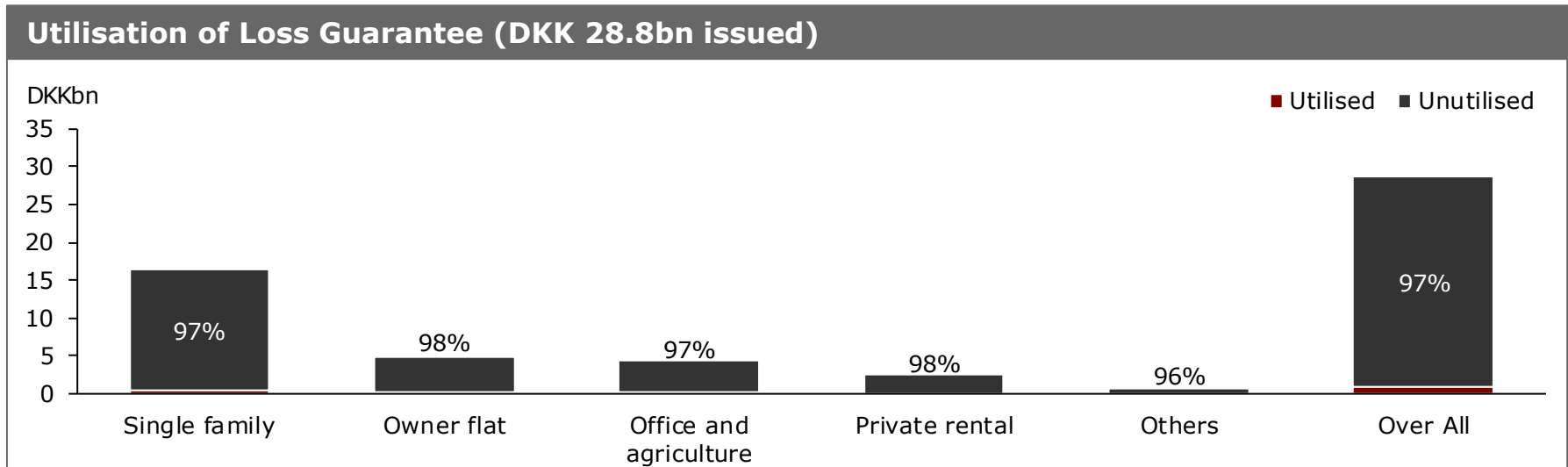
## Loss Guarantees issued by Danske Bank (DKK 52.8bn)

- RD loans disbursed through Danske Bank has a Loss Guarantee
- Loss Guarantees covers the outmost LTV limited to 20% of the maximum lending corresponding to LTV from 60–80% for Single Family Housing and 40–60% for Corporate and Holiday Housing
- Maturity of 8 years with an amortization equivalent to the covered loan
- Loss Guarantee covers losses obtained from forced sales including costs

# Guarantees — S



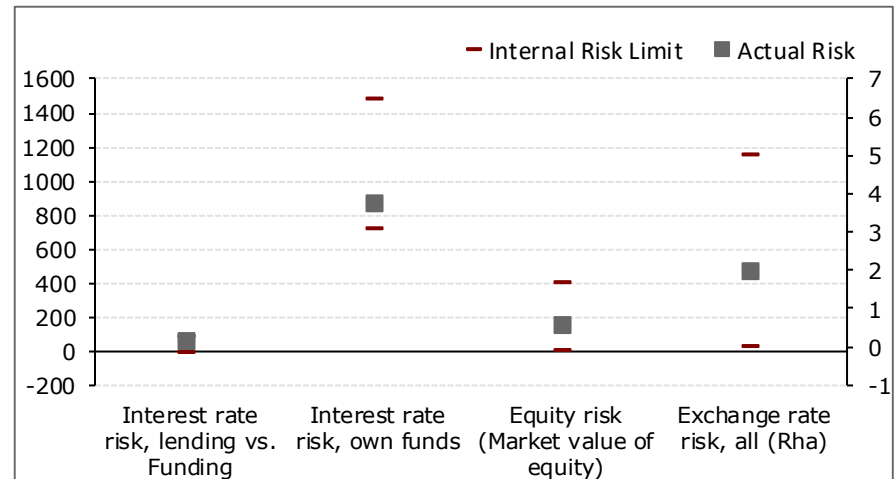
# Guarantees — T



## 2 Market Risk Exposure and Liquidity

### Market Risk Exposures

- Realkredit Danmark operates subject to the specific balance principle
- In adherence with the principle Realkredit Danmark issues covered bonds on a daily basis to match loan origination and employs a pass through structure i.e. bond terms mirror loan terms
- Market risk exposures are, therefore, limited. End Q4 2019 interest rate risk on lending vs. funding stood at DKK 43.3m
- Derivatives are not employed for hedging imbalances on lending and funding





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