

# Risk Report 2017Q4

Published 28 February 2018

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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

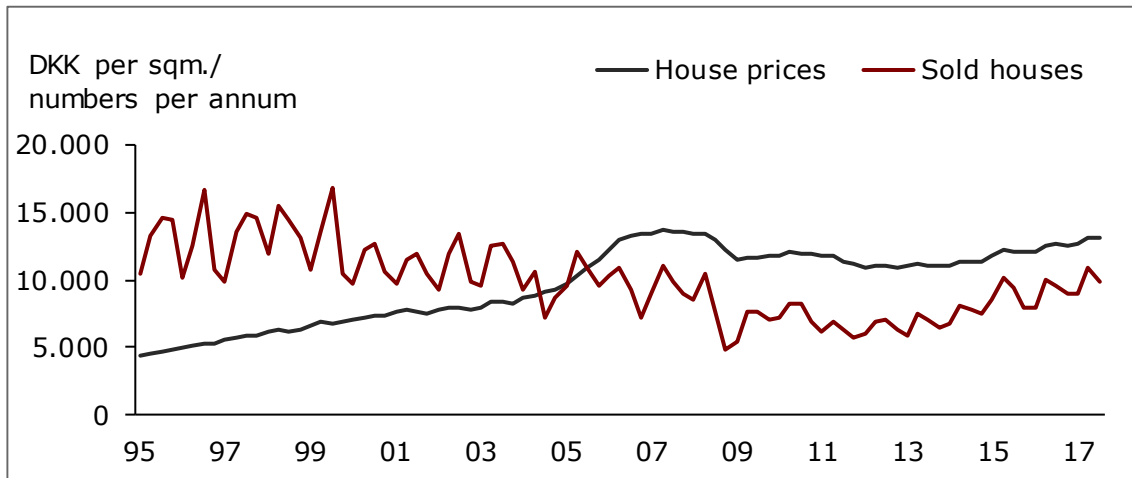
# Key Market Indicators

General Market Information

# 1 House Prices and Homeowners Equity

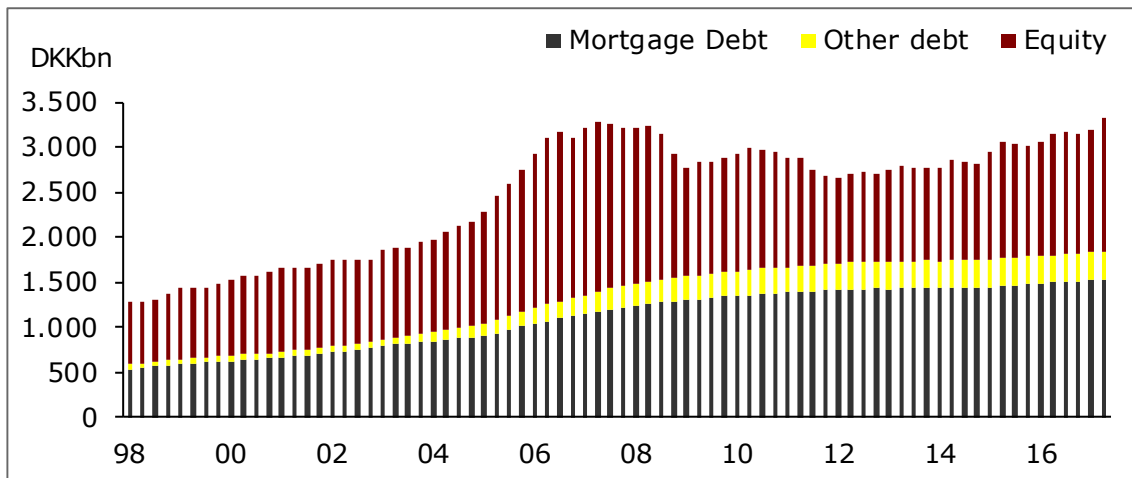
## House Price Trends

- 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 per cent per annum in 2018
- Number of houses sold is back to more "normal" levels



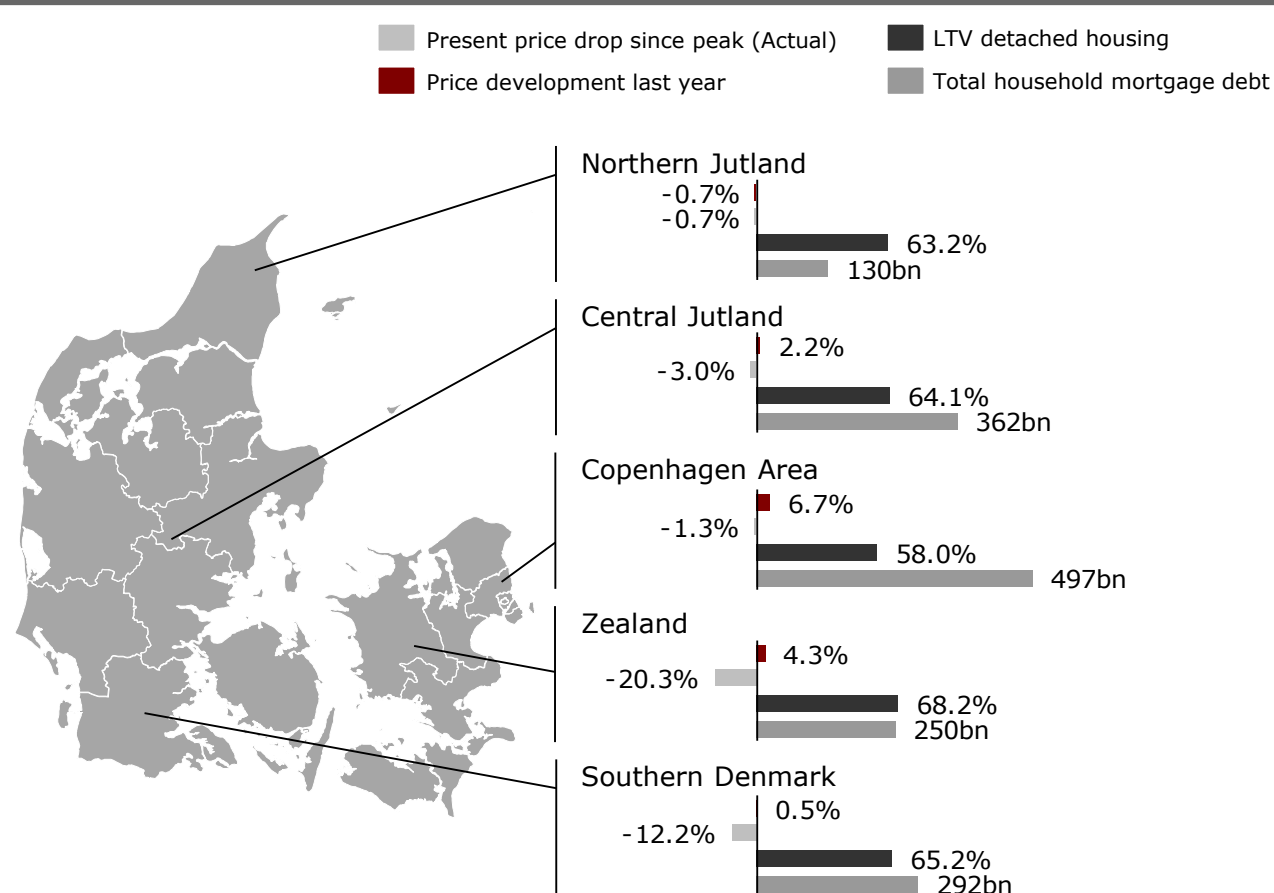
## Homeowners Equity

- Homeowners' equity was DKK 1,494bn end 2017Q2
- Since the beginning of 2012 homeowners' equity has risen by DKK 558bn
- In the same period total lending increased by DKK 124bn and thus the total value of the housing stock has increased by DKK 682bn



# 1 Geographical Dispersion

## Private lending in Denmark in total

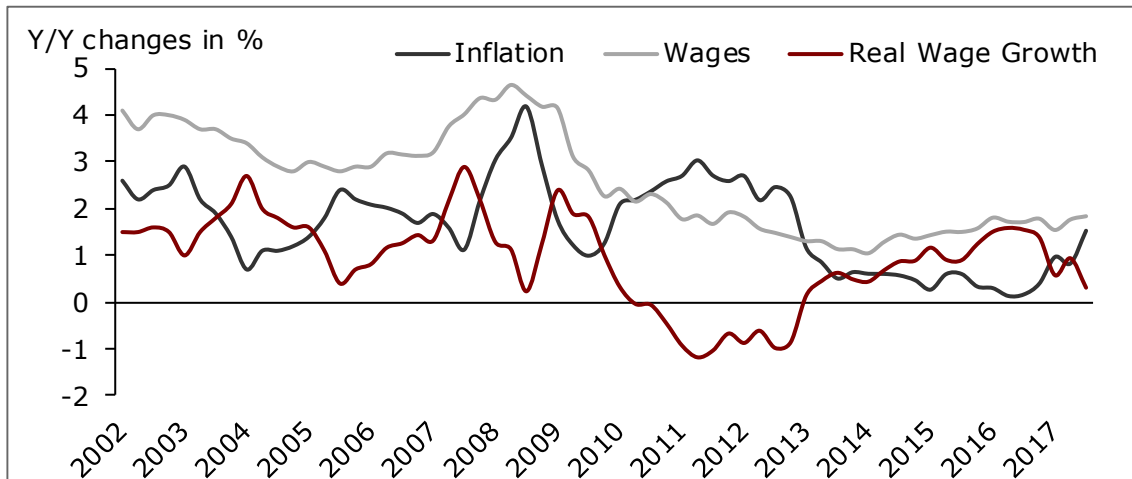


- House prices are generally increasing – however, prices in Northern Jutland are still struggling
- Total mortgage debt in the Copenhagen area is the highest in the country. However, LTV is only 58.0% and house prices are on the rise

# 1 Unemployment and Real Wage Growth

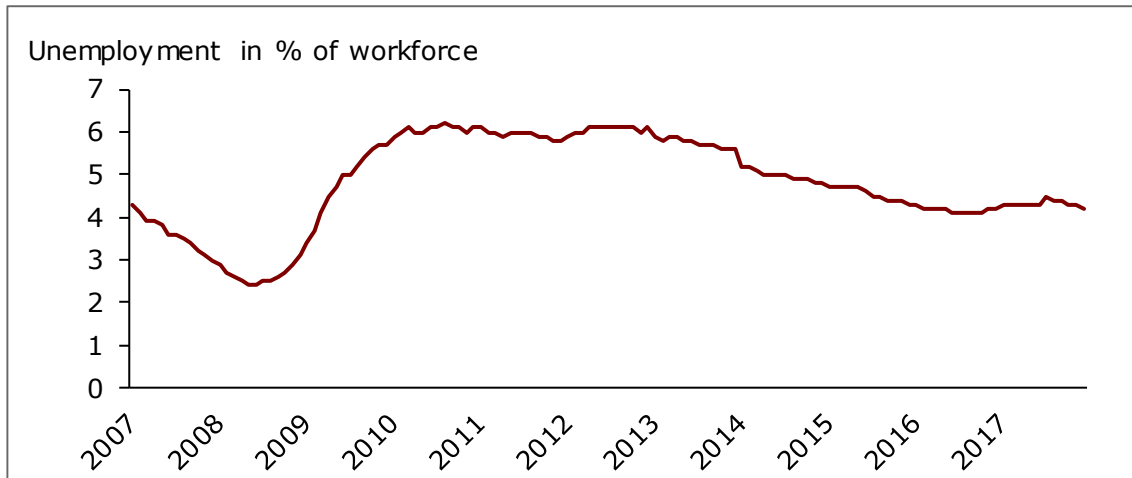
## Real Wage Growth

- Real wage growth in Q3 2017 stood at 0.3%.



## Unemployment

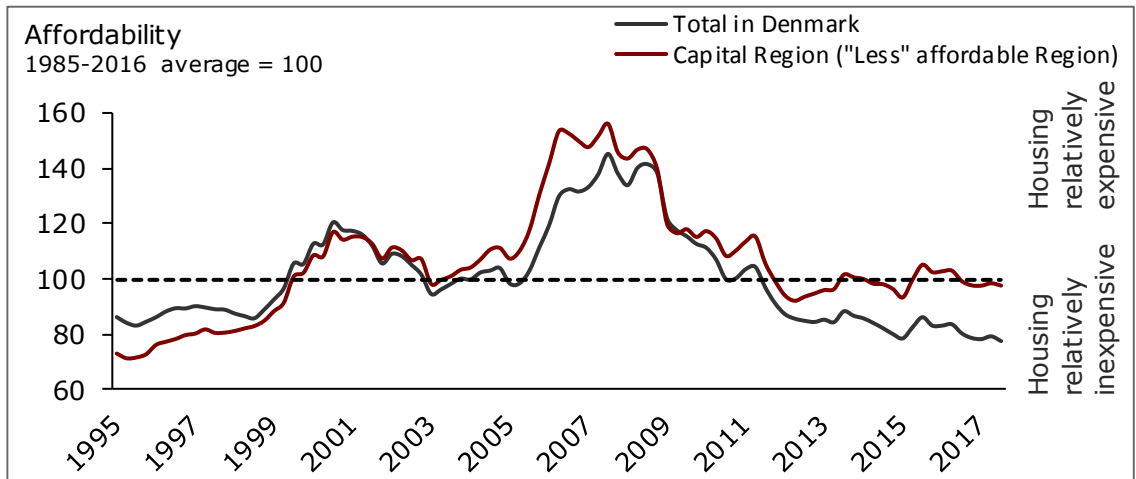
- Gross unemployment rate has declined over the past years and stood at 4.2 per cent end Q4 2017
- In a historical perspective unemployment is on a low level



# 1 Homeowner Affordability and Foreclosures

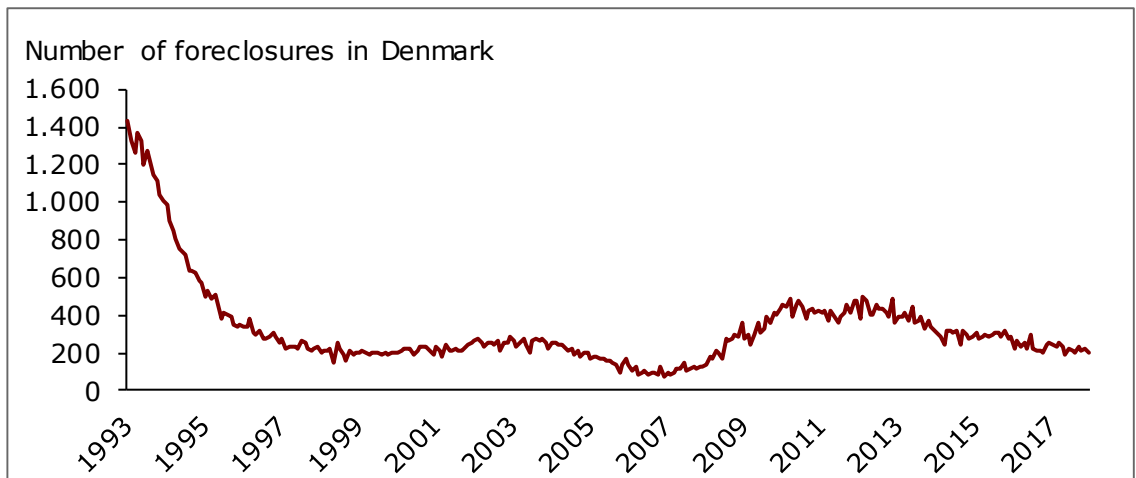
## Homeowner Affordability

- 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 2017 was 197
- The number of foreclosures is now back to "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>	2017		2018		2019	
GDP	2.0	2.5	2.0	2.0	1.9	1.8
Private Consumption	1.7	1.8	2.0	1.9	2.5	1.9
Fixed investments	1.9	3.2	5.5	4.1	4.3	4.2
Export	3.6	5.0	2.7	3.9	2.6	3.4
Unemployment %	4.3	9.1	4.1	8.4	4.0	8.0

## Danish Economy Outlook

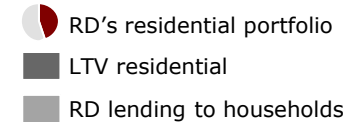
- The growth in the Danish and European economy is expected to be 2.0 in 2018
- Interest rates are a key element in the household economy
- Certificates of deposit rate currently stands at -0.65% p.a.
- We expect interest rates to start increasing in 2018



# Key Collateral Indicators

Realkredit Danmark Specific Information

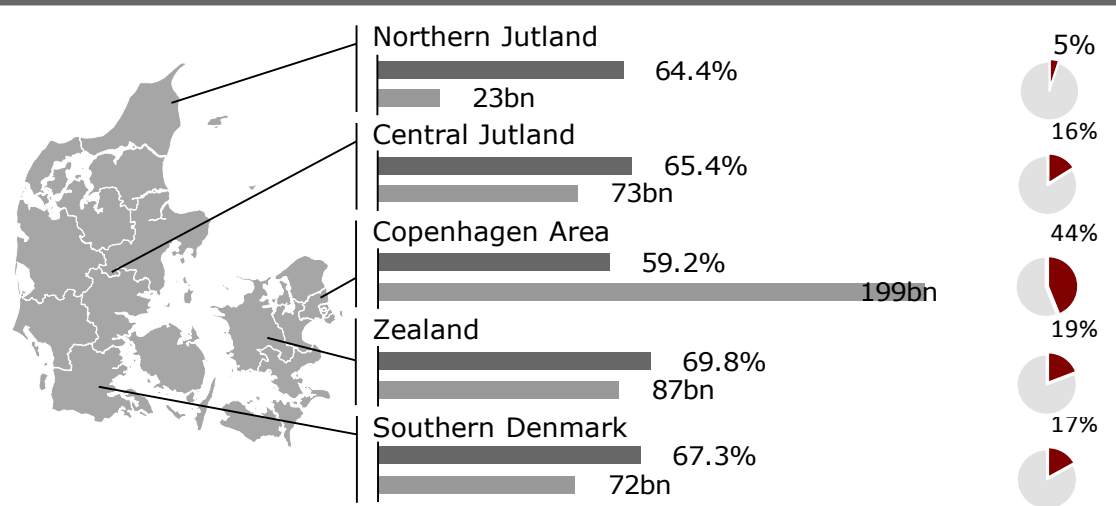
## 2 Dispersion and Loan to Value Ratios



### 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



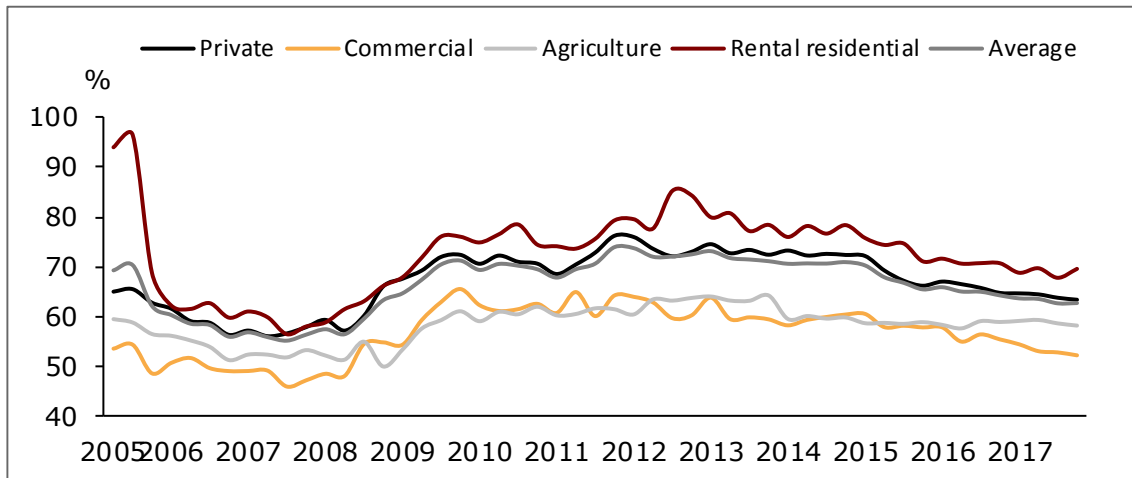
### Loan To Value Ratios

- 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
- 38% of mortgage collateral securing covered bonds issued by Realkredit Danmark has a current LTV ratio of 20% or less. More than 69% 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 62.7% in Q4 2017 compared to 64% in Q4 2016
- LTV's for Commercial and Agriculture are based on few observations to confirm correct price levels



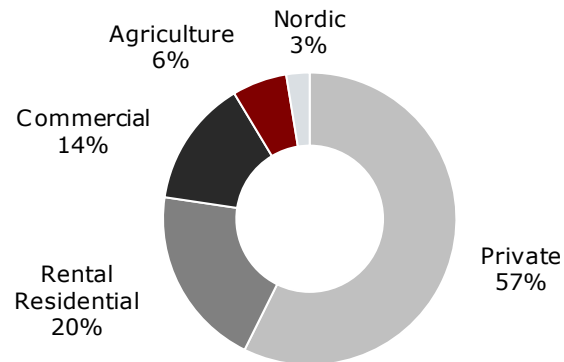
### Borrower Classifications

- Borrowers' financial strength is classified on a scale from 1 to 11, 1 being the highest score
- Approx. 4bn of total lending is secured by mortgages above the 80% LTV limit for which the borrowers' financial strength is classified 8-11 — equivalent to 0.5% of the portfolio

DKKbn	Rating Category (Scaled 1-11)			
	1-3	4-7	8-11	Total
LTV				
0-20 %	78	213	14	304
20-40 %	52	178	13	243
40-60 %	29	118	10	158
60-80 %	11	47	6	64
> 80 %	6	13	4	23
Total	177	569	46	792

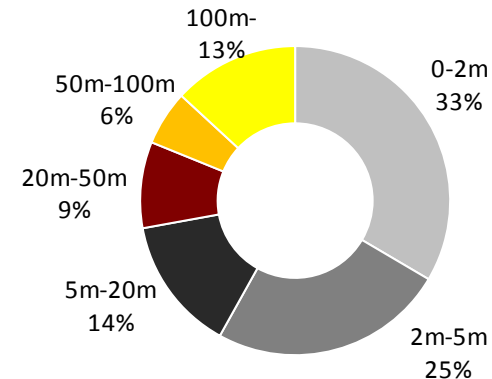
## 2 Collateral Breakdowns — Total portfolio

### Borrower Segmentation



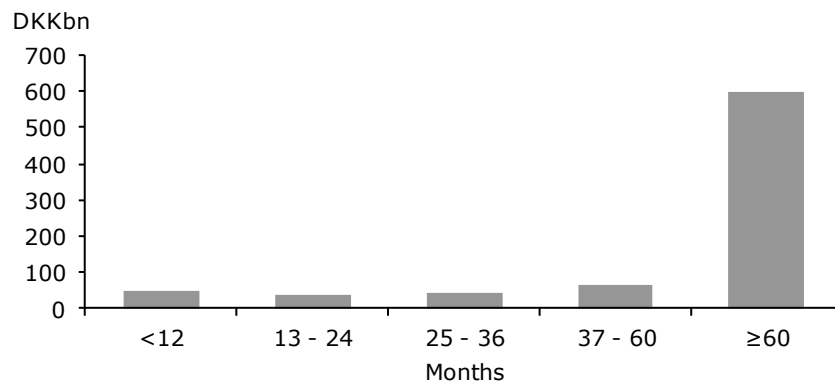
Note: Total lending distributed on segments

### Outstanding Loan Balance



Note: Total lending distributed on outstanding loan balances

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



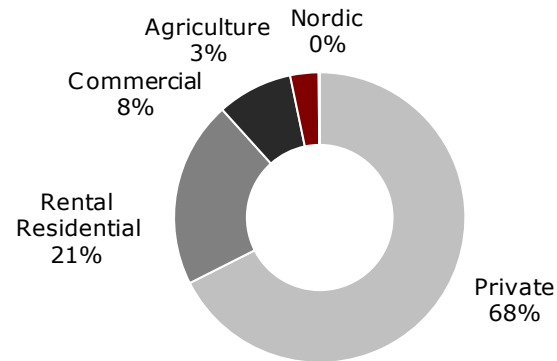
### Outstanding Debt in DKKbn by LTV ratio

Segment	0-20%	20-40%	40-60%	60-80%	>80%	Total DKKbn
Private	165	140	97	44	9	454
Commercial	54	44	23	4	3	128
Agriculture	19	16	10	3	1	48
Rental Residential	67	44	27	13	10	162
Weighted dist.	38%	31%	20%	8%	3%	100%
Total, DKKbn	304	243	158	64	23	792

Average LTV: 62.7%

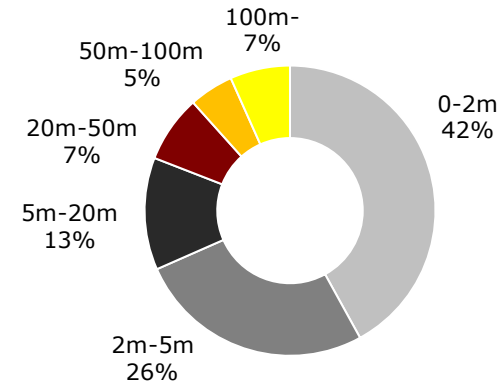
## 2 Collateral Breakdowns — Capital Centre S

### Borrower Segmentation



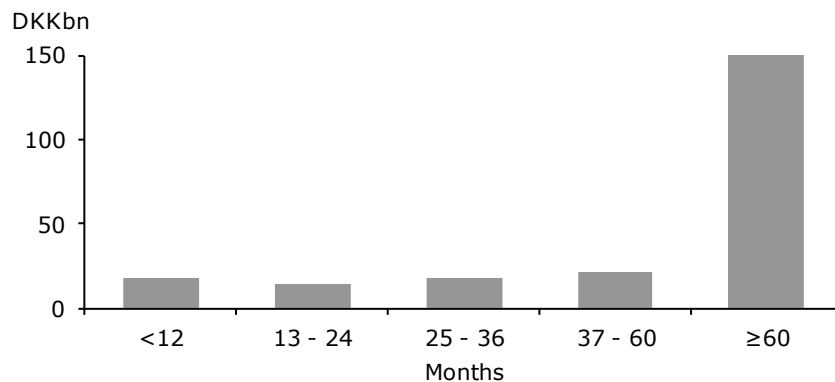
Note: Total lending distributed on segments

### Outstanding Loan Balance



Note: Total lending distributed on outstanding loan balances

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



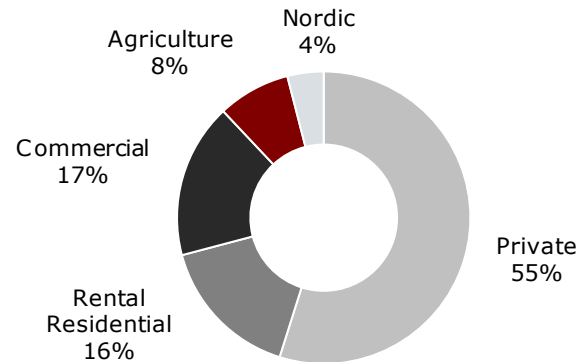
### Outstanding Debt in DKKbn by LTV ratio

Segment	0-20%	20-40%	40-60%	60-80%	>80%	Total DKKbn
Private	60	52	37	17	3	170
Commercial	8	7	4	1	0	21
Agriculture	3	3	2	0	0	8
Rental Residential	25	13	7	4	4	52
Weighted dist.	38%	30%	20%	9%	3%	100%
Total, DKKbn	96	75	50	22	8	251

Average LTV: 60.5%

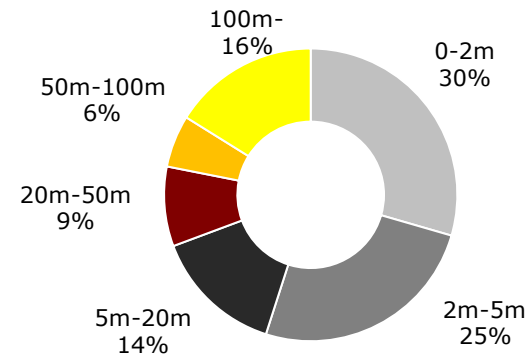
## 2 Collateral Breakdowns — Capital Centre T

### Borrower Segmentation



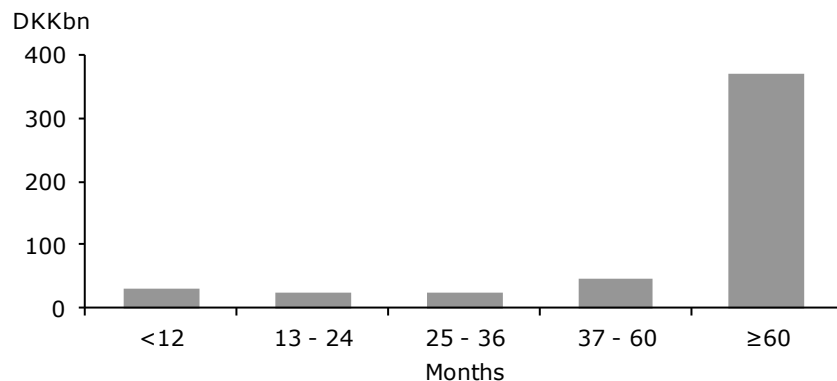
Note: Total lending distributed on segments

### 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

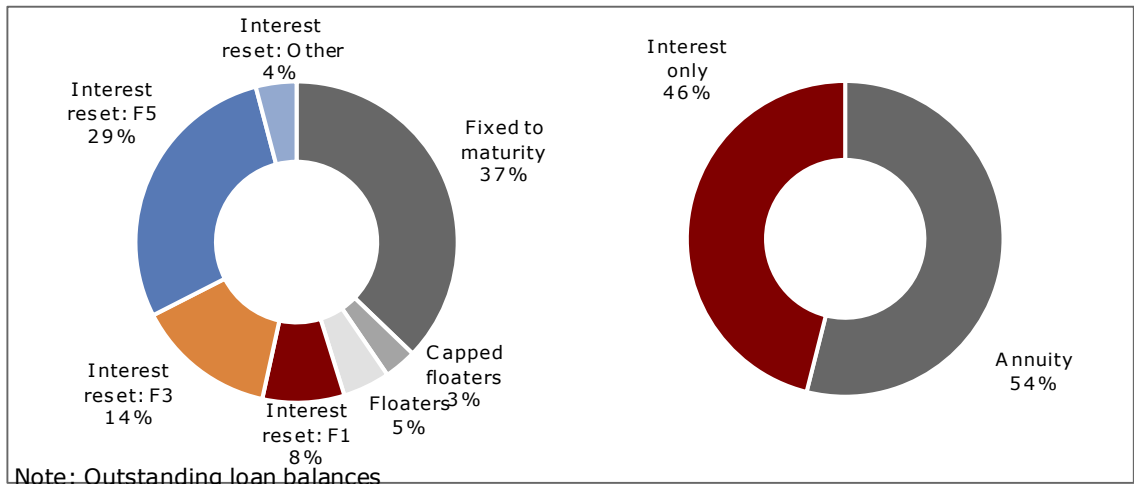
Segment	0-20%	20-40%	40-60%	60-80%	>80%	Total DKKbn
Private	97	83	58	26	6	269
Commercial	44	35	18	3	1	101
Agriculture	15	13	8	2	1	39
Rental Residential	30	24	16	7	4	81
Weighted dist.	38%	31%	20%	8%	2%	100%
Total, DKKbn	186	154	100	38	12	490

Average LTV: 61.0%

## 2 Borrower Exposure to Interest Rates

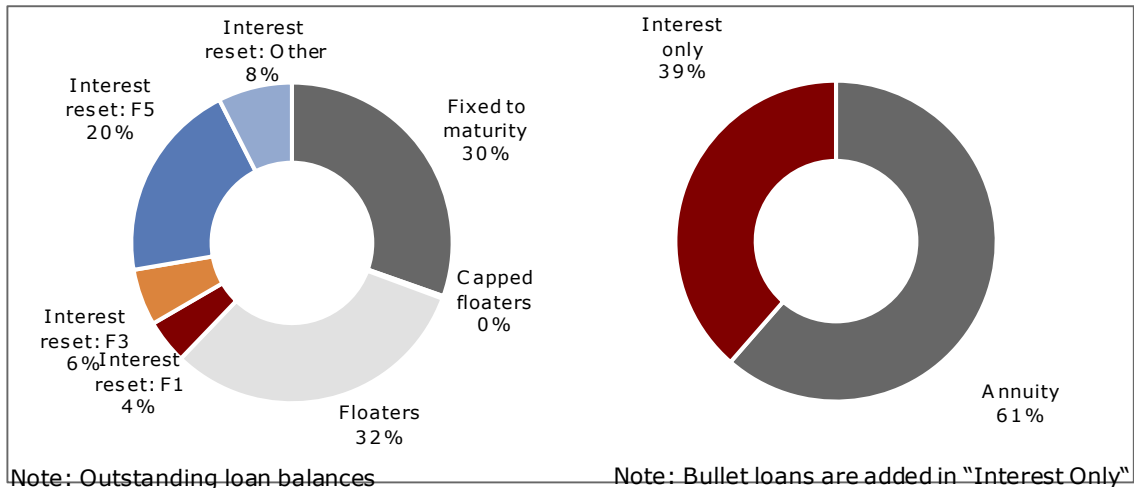
### Private Segment

- Homeowners must be able to service a 30-year fixed rate annuity loan of 4% for Realkredit Danmark to underwrite
- Originally, fixed rate mortgages were standard in the Danish market, but now interest reset accounts for 54%
- Expectations are for this percentage to decline since 30Y fixed rates are now only 2% and FlexKort® (floater) is offered as an alternative to interest reset loans
- Negative interest rates has been a reality for a while now– and some floaters' floor of 0% p.a. is now effective



### Corporate Segments

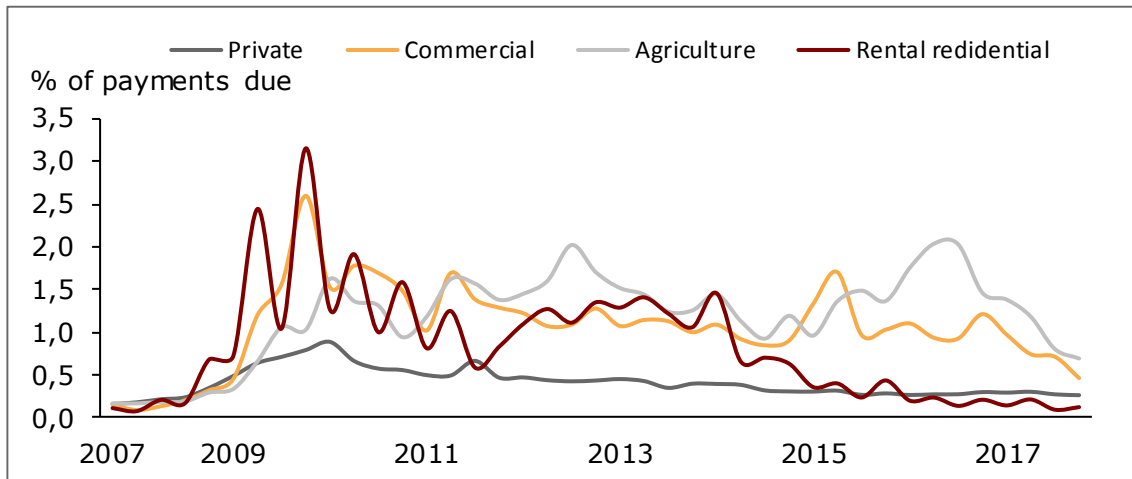
- 30% of all lending in corporate segments is fixed rate to maturity
- 70% are either interest reset (typically, rates are reset every 1, 3 or 5 years) or floating rate (base rates are either 6M CIBOR, 3M EURIBOR or 6M CITA)
- Bullets and Interest only loans make up 39% of corporate lending



## 2 Arrears and Repossessions

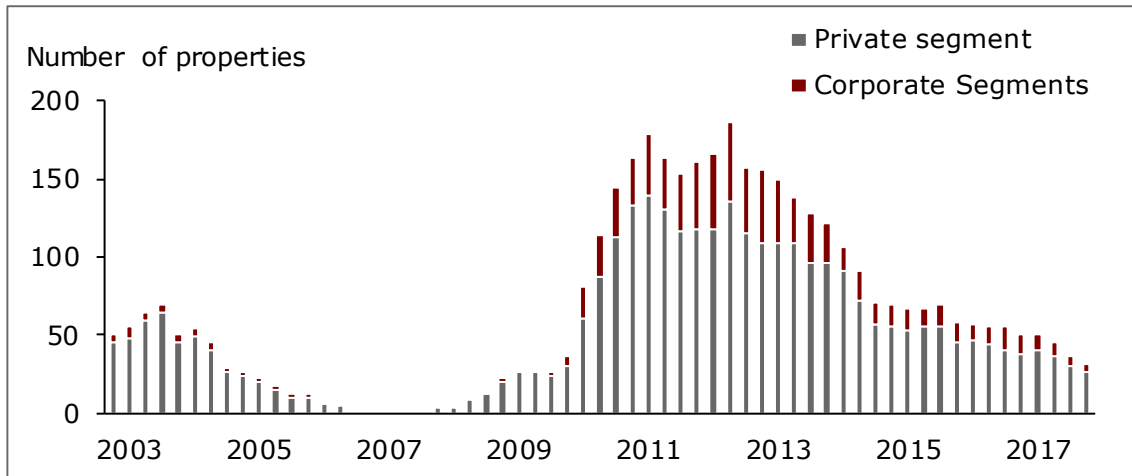
### Arrears (3 months)

- Total arrears stood at 0.31% end Q4 2017
- Arrears are rather volatile in the Rental residential segment. However, down considerably from Q4 2009
- Arrears in the Commercial segment is now 0.46%. The segment is sensitive to the development in few individual loans
- Arrears in agriculture has declined to 0.69% in Q4 2017 due to payments
- The Private segment is stable just below 0.30%



### Repossessions

- The stock of repossessed properties stood at 31 end Q4 2017 — down by 6 since Q3 2017
- This compares to a total stock of mortgage collateral of 472,826

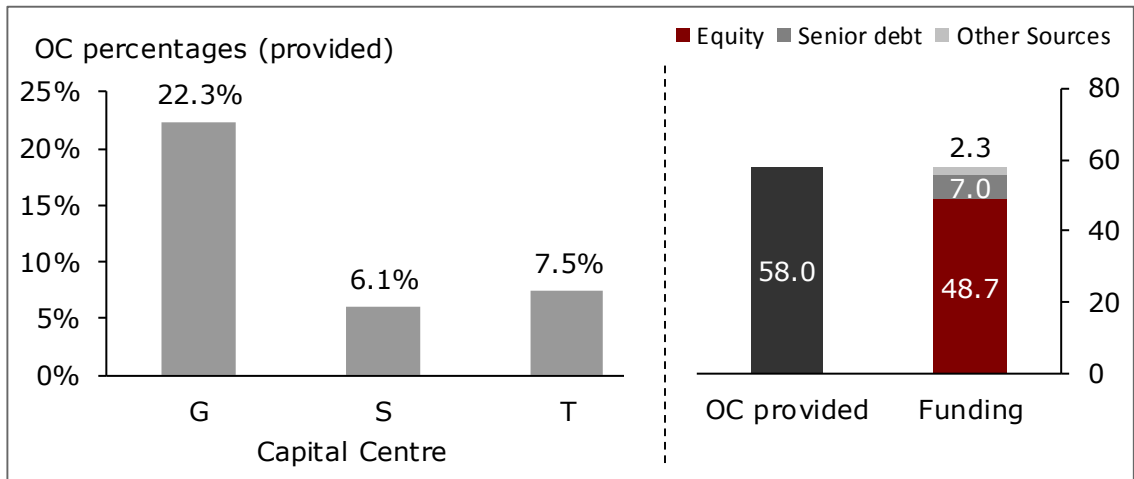




## 2 Over Collateralization and Capitalization

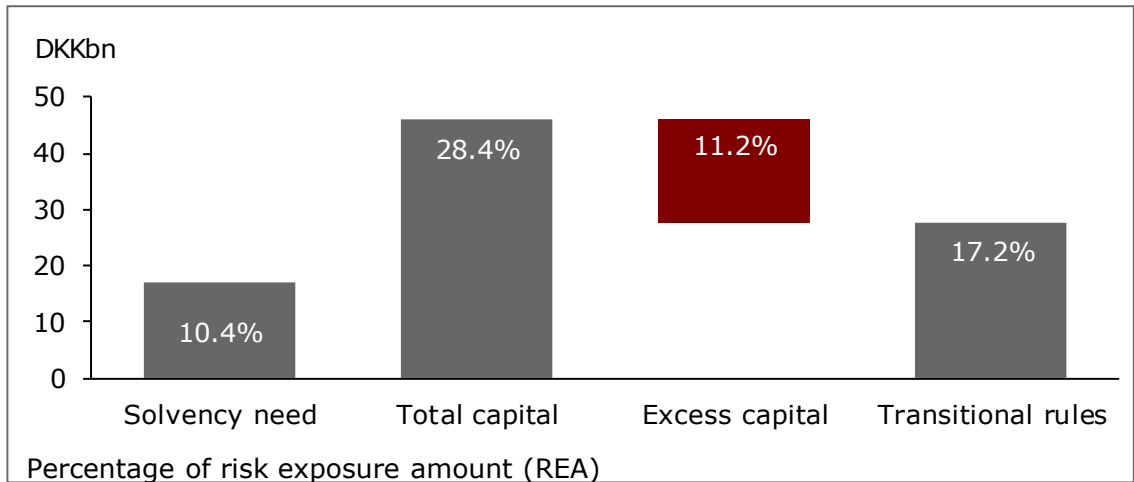
### Over Collateralisation

- 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

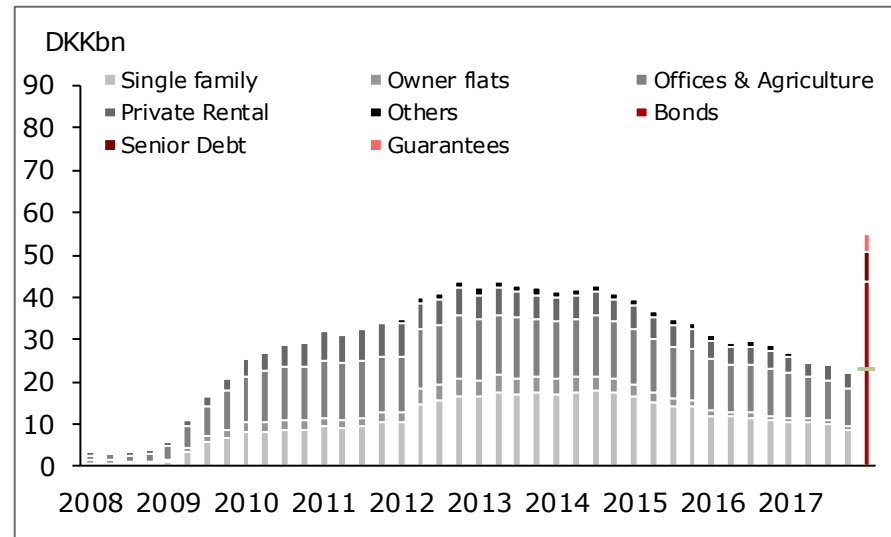
- End Q4 2017, Realkredit Danmark's solvency need was calculated at 16.9bn
- Calculated on the basis of the transitional rules, the capital need was 27.8bn
- With total capital of 45.9bn, Realkredit Danmark had 18.1bn in excess of the requirement according to the transitional rules



# Supplementary Collateral — Total in S and T

## Buffer in Capital Centres S and T

- End Q4 total OC provided was DKK 50.9bn in Capital Centres S and T of which 7.0bn was funded by Senior debt
- Supplementary Collateral of DKK 22.7bn is required end Q4 2017 in Capital Centres S and T
- Loss Guarantees of DKK 4.2bn are utilised
- Buffer for further growth in need for supplementary Collateral in Capital Centres S and T is DKK 32.4bn
- If the OC is insufficient to comply with Supplementary Collateral requirements, RD can transfer OC from the General Capital Centre or write Loss Guarantees within the 15% limitation of issued bonds



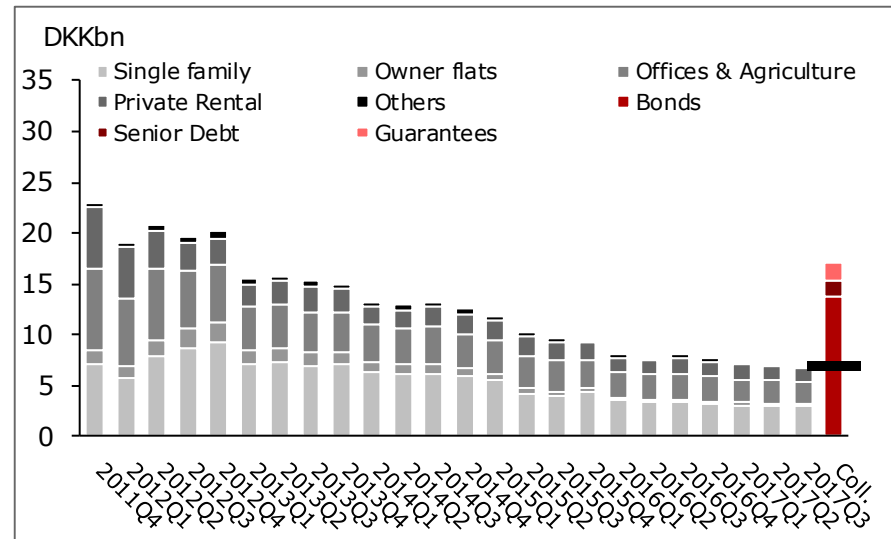
## Supplementary Collateral requirements

- 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

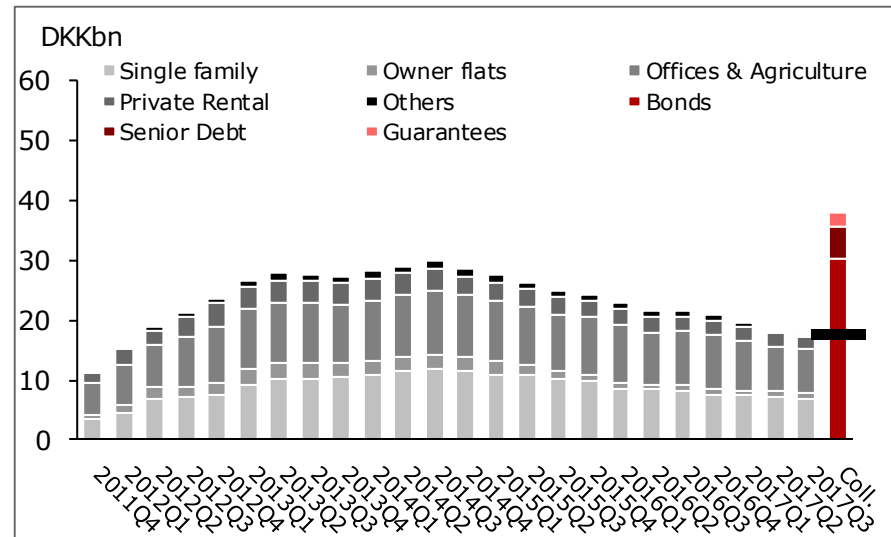
- End Q4 2017 total OC provided was DKK 15.3bn in Capital Centre S of which 1.6bn was funded by Senior debt
- Supplementary Collateral of DKK 6.8bn is required end Q4 2017 in Capital Centre S
- Loss Guarantees of DKK 1.8bn are utilised
- Buffer for further growth in need for supplementary Collateral in Capital Centre S is DKK 10.3bn
- 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 write Loss Guarantees within the 15% limitation of issued bonds



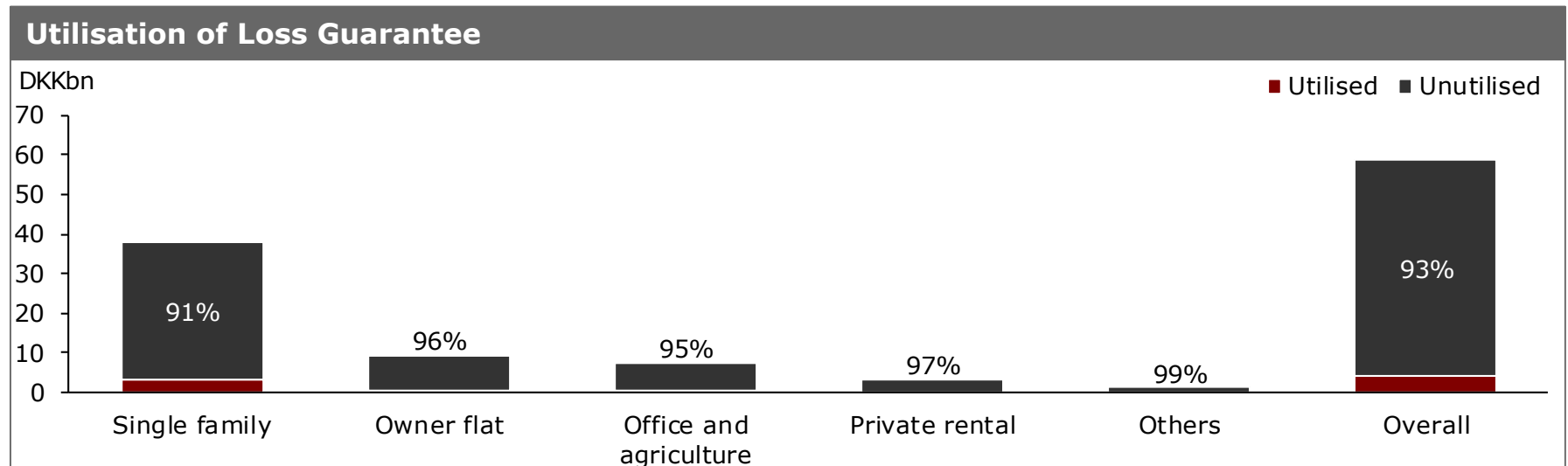
# Supplementary Collateral — T

## Buffer in Capital Centre T

- End Q4 2017 total OC provided was DKK 35.6bn in Capital Centre T of which 5.4bn was funded by Senior debt
- Supplementary Collateral of DKK 17.5bn is required end Q4 2017 in Capital Centre T
- Loss Guarantees of DKK 2.4bn are utilised
- Buffer for further growth in need for supplementary Collateral in Capital Centre T is DKK 20.4bn
- 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 write Loss Guarantees within the 15% limitation of issued bonds



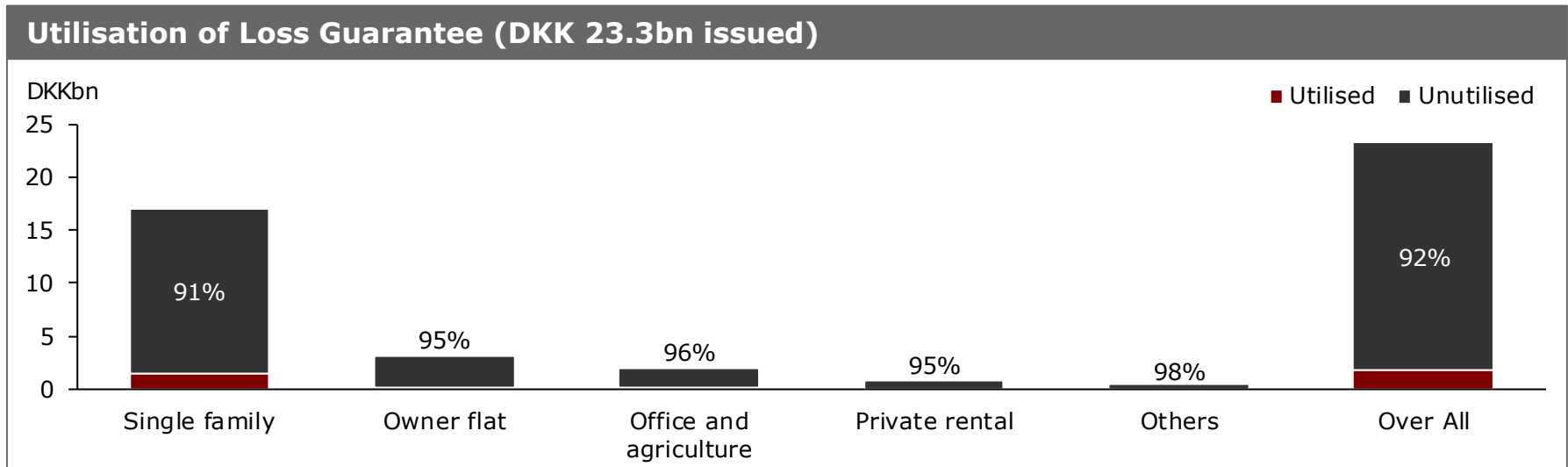
# Guarantees — Total



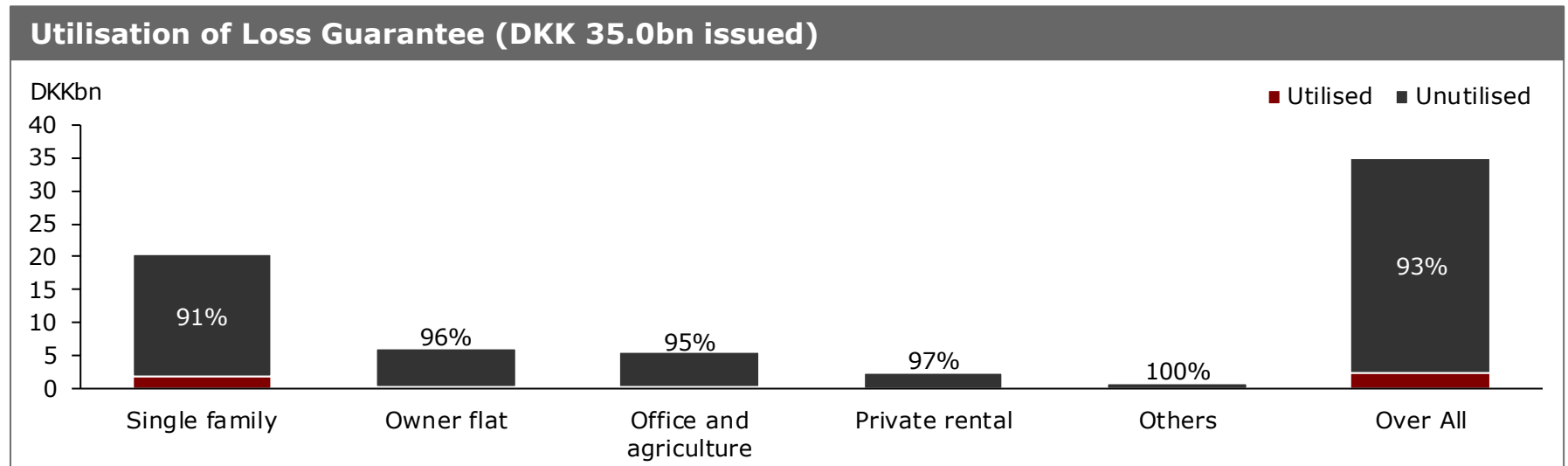
## Loss Guarantees issued by Danske Bank (DKK 58.7bn)

- 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



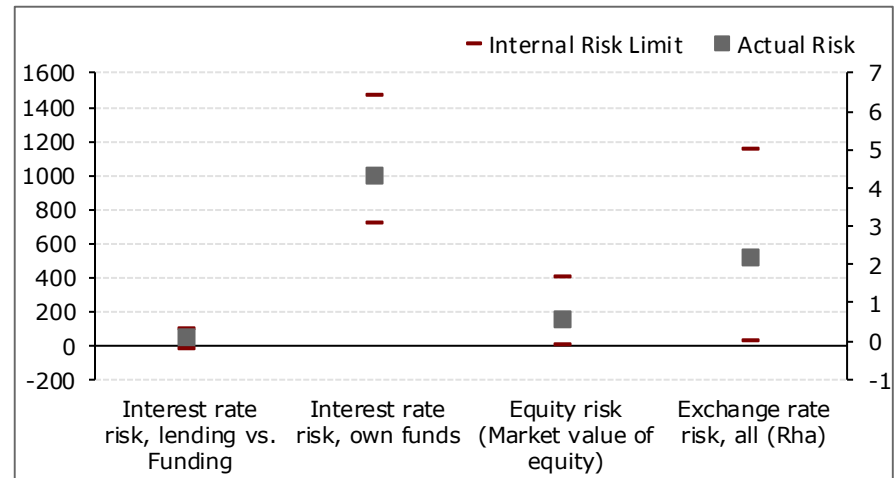
# Guarantees — T



## 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 2017 interest rate risk on lending vs. funding stood at DKK 34.7m
- Derivatives are not employed for hedging imbalances on lending and funding





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