dlr kredit
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RISK AND CAPITAL MANAGEMENT REPORT FEBRUARY 2019

RISK

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Preface

This risk and capital management report is being published in compliance with DLR's disclosure requirements under the CRR rules. As a SIFI institution, DLR must apply the European Banking Authority's (EBA) guidelines to all disclosures DLR has an obligation to publish after 31 December 2017. Quantitative disclosures pursuant to the EBA guidelines etc. are set out in a separate Pillar III appendix (in Excel format), which is published on the DLR website at www.dlr.dk/investor together with this report.

All information will be regularly updated to the extent deemed necessary, and at least once a year in connection with the publication of DLR's Annual Report. Certain disclosures in the Pillar III appendix are updated quarterly or half-yearly.

It is the view of DLR that the information stated here complies with both the Pillar III information requirements as prescribed in both the CRR regulation (CRR articles 431-455) and the EBA's guidelines on disclosure requirements under the Pillar III requirements.

This report has been updated in accordance with DLR's Annual Report 2018 and has been approved by DLR's Board of Directors and Executive Board on 7 February 2019.

Introduction

DLR Kredit A/S (DLR) is a Danish mortgage credit institution owned primarily by 56 local and national banks that collaborate with DLR.

DLR grants loans against mortgages on real property in Denmark to finance agricultural property – including to residential farms – and other commercial properties and private cooperative housing. DLR also grants loans in Greenland and the Faroe Islands, primarily for owner-occupied homes and residential rental properties and, on a smaller scale, to office and retail properties. At the end of 2018, DLR's loan portfolio in terms of nominal outstanding bond debt amounted to DKK 146.4bn, of which loans granted in Greenland and the Faroe Islands amounted to a total of DKK 2.1bn or 1.4% of the loan portfolio.

DLR had, on average, 187 FTE employees in 2018. In addition, DLR has 26 agricultural valuation experts attached to the company on a part-time basis. DLR has no branch offices as loans are distributed through the branch networks of DLR's shareholder (owner) banks.

DLR's loan portfolio grew by a nominal amount of DKK 5.6bn in 2018. Lending for agricultural properties accounted for 60% of the portfolio, while lending for residential farms and owner-occupied dwellings amounted to a little over 5% of the portfolio at end-2018. The remaining just under 35% comprised commercial property, the vast majority of which was loans for office and retail property, private residential rental property and cooperative housing.

At the end of 2018, DLR's market share for agriculture-related mortgage loans was 32.5%, while its market share for mortgage loans on office and retail property and on private residential rental property and co-operative housing was 9.3% and 7.4%, respectively.

DLR's overriding risk is credit risk, i.e. the risk that borrowers default on their loans with DLR. Credit risk is limited by collateral in the form of DLR's mortgages on the properties and also by the guarantee and loss-mitigating agreements DLR has signed with its loan-distributing shareholder banks.

DLR's net profit in 2018 was DKK 707m, all of which was added to DLR's reserves, as DLR did not pay dividends to its shareholders.

Developments in DLR's earnings and capital have resulted in DLR's total capital ratio increasing to 16.9 at the end of 2018 compared to 15.9 at the end of 2017. DLR's common equity tier 1 (CET 1) capital ratio was 16.0 at the end of 2018.

DLR has been rated by S&P Global Ratings since May 2012. Since May 2017, DLR has held an issuer rating of A-, from July 2018 with a positive outlook. DLR's covered bonds (SDO) and mortgage bonds (RO) have all been assigned S&P's highest rating: AAA.

1. MANAGEMENT AND CONTROL OF RISK

1.1. Risk exposure and capital resources

As a mortgage credit institution, DLR is exposed to various types of risk, notably credit risk, but also market risk, liquidity risk IT and cyber security risk, reputational risk and operational risk, etc.

DLR applies the specific balance principle as defined in the Bond Executive Order to its lending activities. Applying the principle means there is a full funding match between the interest and principal payments received by DLR from borrowers and DLR's payments to bondholders. In practice, the balance principle means DLR's credit business does not assume interest rate, exchange rate or liquidity risk – including prepayment risk. DLR's main risk is credit risk, i.e. the risk that a borrower defaults on a loan, and the subsequent risk of an absence of collateral for DLR's receivable.

However, DLR's risk of major losses is estimated to be limited due to DLR's relatively simple business model, defined policies and guidelines, credit management, guarantee and loss-mitigating concepts, limited market risk, etc.

Under current rules, Danish mortgage credit institutions may apply the standard method or the Internal Ratings Based (IRB) approach when calculating the organisation's risk exposure for credit risk purposes. Regardless of the method applied, the credit institution must allocate capital for each exposure equivalent to the risk on the exposure.

DLR has elected to operate with capital resources that exceed the regulatory minimum requirement. DLR's capital resources combined with its annual profit and guarantee and loss-mitigating concepts, which constitute a front-line buffer against loss, should be able to absorb losses on a substantial scale. Given this, the overall risk associated with DLR's operations is assessed to be limited.

Risk management is a key feature of DLR's day-to-day operations. Like other Danish mortgage credit institutions, DLR is subject to the Danish Mortgage Credit Loans and Mortgage Credit Bonds, etc. Act, the Danish Financial Business Act,

the Executive Order on the Issue of Bonds, the Balance Principle and Risk Management ("the Bond Executive Order"), various EU-based legislation and other executive orders issued pursuant to the above legislation, etc. DLR's limited risk exposure is in part due to this detailed, risk-mitigating legislation.

1.1. Overall risk management at DLR

DLR is exposed to various types of risk, notably credit risk. Other types of risk include market risk, operational risk, liquidity risk, risk of IT disruptions/breakdowns including cyber security risk, reputational risk due to non-compliance with regulation, financial counterparty risk, etc., all of which are explained in greater detail in the following sections.

DLR's business model and the types of risk DLR is exposed to are closely linked.

DLR's Board of Directors has overall responsibility for monitoring and mitigating the risks incurred by DLR. Based on DLR's business model and risk assessments, etc. the Board of Directors has determined policies and guidelines and hence limits for the risks that DLR may assume. Delegation of responsibility throughout the organisation is based on these policies, guidelines and limits.

DLR's organisation is based on an Executive Board and a series of function heads who all report to the Executive Board.

The Board of Directors and Executive Board have overall responsibility for DLR's risk management, internal controls, compliance with relevant legislation and other regulations relating to DLR's choice of risk exposure. The Board of Directors and the Executive Board set and approve general policies, guidelines, procedures and controls in key risk management areas.

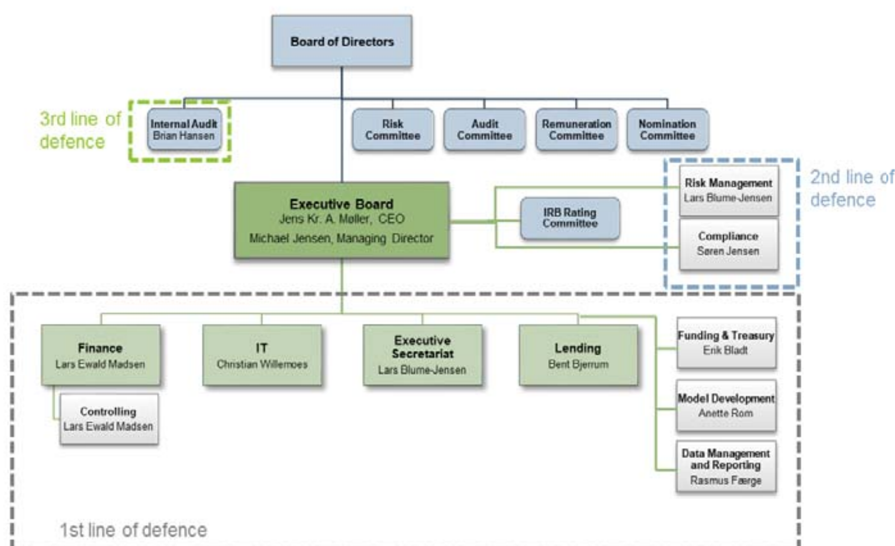
In compliance with statutory requirements, the Board of Directors has also established an *Internal Audit* function that reports to the Board of Directors and which, in accordance with a Board-approved audit strategy, audits processes and internal controls in areas of importance and material risk. All business procedures, etc. are available to DLR's employees.

The Board of Directors is regularly updated on and addresses general risk issues at Board meetings and on an ad hoc basis as the situation requires. Furthermore,

a comprehensive assessment of DLR's risk situation is prepared and presented at least annually to the Board of Directors, who determines whether risk levels are acceptable. DLR's Executive Board is regularly updated about DLR's risk profile and is also involved in the ongoing monitoring and management of risks more general or principle in nature within individual risk areas.

DLR's Board of Directors has also established an *Audit Committee* and a *Risk Committee* to address risk issues. The Audit Committee is tasked with reviewing accounting, auditing and security practices and monitoring DLR's internal control and risk management systems. The Risk Committee's duties include advising the Board of Directors on DLR's overall current and future risk profile and strategy, and helping the Board of Directors ensure its risk strategy is implemented. Prior to the review by the Board of Directors, the Risk Committee also undertakes preparatory work on key materials associated with, for example, risk assessments and with determining DLR's adequate own funds and solvency need.

Figure 1. Risk management at DLR – the three lines of defence



Risk Management at DLR is built around the "three lines of defence" model. The Executive Board has further delegated day-to-day risk management responsibility with overall control based on three function levels:

The business operation constitutes the first line of defence. The business areas ensure that risks are identified, analysed, measured, controlled and reported, and they verify that they are kept within the risk limits DLR's management has defined, and also that business activities comply with external and internal requirements. The foundation for this is a clear organisational structure, well-defined reporting lines, authorisation procedures and people segregation ("four eyes principle"). This ensures a clear division of responsibilities and an appropriate segregation of functions between operations, development, risk management, reporting and control within the various types of risk.

The risk management, control and compliance functions are the second line of defence. These functions are responsible for monitoring whether the management of risk and associated limits have been implemented and complied with, whether policies and business procedures are being followed and whether the internal controls carried out by the business level function satisfactorily.

Internal audit – together with the external auditors – is the third line of defence. Based on an audit plan approved by the Board of Directors, Internal Audit is responsible for independently auditing DLR's internal controls and performing the statutory audit of DLR's annual report in collaboration with the external auditors. The internal and external auditors endorse the annual report, and in that connection submit their long-form audit report to the Board of Directors detailing any issues identified that the Board should be informed about. Reports are also submitted on a regular basis to the Board of Directors and the Audit Committee.

1.2. Risk management, compliance and control

Risk Monitor

In accordance with the Danish Executive Order on Management and Control of Banks, etc. (the S.71 Order), DLR has set up an independent *risk management function* and has appointed an independent Risk Monitor reporting directly to the Executive Board. The Risk Monitor is responsible for the proper management of risk at DLR, including for maintaining an overview of the general risk situation and establishing a relevant control environment. The Risk Monitor may express concern and warn the Board of Directors about particular issues. The Risk Monitor

participates in the meetings of the Risk Committee and provides it with information. The Risk Monitor also regularly participates in the meetings of the Board of Directors, including in connection with presenting the risk management function's report.

Compliance function

DLR has also established a *compliance function*, which reports to the Executive Board. The Compliance Manager is in charge of assessing and verifying whether DLR complies with relevant legislation, market standards and internal rules.

The Compliance Manager reports to the Board of Directors and Executive Board on an ongoing basis.

DLR has, furthermore, established a separate *control function,* which performs internal, independent control checks of all tasks that involve a material risk, cf. Danish Executive Order on Management and Control of Banks, etc. The purpose of the control activities is to ensure that defined targets, policies, guidelines, manuals, procedures, etc. are adhered to and to prevent, identify and correct any errors, discrepancies, omissions, etc. in a timely manner. Control activities include manual and physical checks as well as general IT checks and automatic application controls in the various IT systems, etc.

Monitoring and control is done via ongoing and/or periodical assessments and checks at all significant levels. The extent and frequency of these mainly depends on the risk assessments and the results of ongoing checks. Any vulnerabilities, control failures, breaches of policy or limits, etc. or other discrepancies are reported to the Executive Board. Significant events are also reported to the Board of Directors, including the Audit Committee, and reported in the annual risk assessment.

1.3. Credit risk management

Credit risk constitutes DLR's most important risk. However, several factors help to reduce credit risk. As a mortgage credit institution, DLR only grants loans against a registered mortgage on real property within the statutory loan limits.

To identify credit risk, a detailed assessment is made of the mortgageable property and the borrower's finances. The starting point for assessing the mortgageable property is determining its market value. This is done by DLR's own valuation experts, who have local knowledge. Credit scoring is the responsibility of DLR's loan department in Copenhagen. Credit scoring models are used for the most important customer segments. DLR's organisational set-up ensures a separation of functions between the property valuation and the credit assessment.

As well as collateral in the mortgaged property and a detailed credit assessment, DLR has reduced its credit risk on individual loans and its risk at portfolio level via significant guarantee schemes that the loan-distributing banks (DLR's shareholders) provide for the distributed loans. The schemes also include loss offsetting in the commission payments made to the banks.

DLR's Board of Directors has defined DLR's credit policies and guidelines for the granting of credit – including limits for the Executive Board's lending authorities – in order to achieve the desired level of risk. Within the set limits, internal business procedures and instructions further delegate lending authorities to the various areas and persons in DLR's organisation.

LTV calculations (calculations of the loan portfolio's position in the order of priorities in the mortgaged properties) are used to create an overview of overall risk, as low LTV values indicate a relatively secure position in the order of mortgage priorities. DLR continually monitors LTV values, which are partly based on current (mainly annual) market valuations. Continual LTV monitoring is a permanent feature of DLR's management reporting.

Internal rating models are used with the bulk of the loan portfolio to calculate credit risk. The rating models for full-time farms comply with the requirements for advanced internal ratings-based methods (IRBA) and are approved by the Danish Financial Supervisory Authority (FSA). The models are regularly validated. A detailed analysis of the models' performance is made annually and supplemented with quarterly and - for some analyses - monthly updates. Validations and updates are reviewed by DLR's Rating Committee, with significant changes requiring pre-approval from the Board of Directors and an auditors' report before approval for the change can be sought from the Danish FSA.

DLR's Risk Committee prepares and reviews a list of DLR's 20 largest risks on a quarterly basis. The review is based on an evaluation of the assessed probability of the event occurring and the estimated cost of the event should it occur.

1.4. Management declaration

DLR Kredit A/S's Board of Directors approved DLR's Risk and Capital Management Report on 7 February 2019.

It is the Board of Directors' view that DLR's risk management procedures are adequate and ensure implemented risk management systems meet all requirements with respect to DLR's profile and strategy.

Furthermore, the Board of Directors views the description below of DLR's general risk profile as giving a true and fair view of DLR's risk management and risk appetite.

The Board of Directors' assessment is based on the Board-approved business model and strategy and reports provided to the Board of Directors by the Executive Board, Internal Audit and the Risk Monitor and Compliance Manager.

An examination of the business model and policies indicates that the general requirements of the business model for each risk area are fully and comprehensively reflected in the more specific limits of the individual policies. A review of the Board of Director's instructions to the Executive Board and the authorities delegated to the Executive Board indicates that stipulated limits in individual policies are fully and comprehensively reflected in the underlying instructions to the Executive Board and the authorities delegated to the Executive Board, and that real risks are within the limits stipulated in individual policies and authorities. Based on this, the Board of Directors concludes there is compliance between the business model, policies and instructions and the real risks in the individual areas.

DLR's business strategy is based on its goal of being the preferred collaboration partner for the shareholders within its market area. DLR aims for profitable operations based on product pricing that reflects the risks and capital requirements DLR assumes together with a holistic assessment of the scope of its business

with customers and counterparties. DLR aims to have suitable and robust own funds that support its business model and bond ratings.

The maximum risk tolerance accepted by the Board of Directors is managed via defined limits in individual policies and guidelines, etc. These include the following three areas of control

- DLR has defined a target for its total capital ratio for 2019 in the 16.0-16.5% range. DLR’s capital ratio stood at 16.9% at the end of 2018.
- DLR’s Board of Directors has defined a leverage ratio limit of 5%, which is above the statutory limit of 3%. DLR’s leverage ratio was 7.3% at the end of 2018.
- In the market area, DLR aims for a maximum interest rate risk of 3%, which is below the statutory requirement of 8%. DLR’s interest rate risk on the bond portfolio was 1.5% at the end of 2018.

The Board also takes into account, for example, the limits set in the Danish FSA’s “Supervisory Diamond”.

2. MANAGEMENT AND ADMINISTRATION

2.1. Board of Directors and Board committees

At the end of 2018, DLR's Board of Directors consisted of 12 members, of whom seven were elected at DLR's Annual General Meeting. Of the shareholder-elected Board members, three were elected from among the members of the Association of Local Banks, Savings Banks and Cooperative Banks in Denmark, and three from among the members of National Banks in Denmark. Furthermore, one member was elected jointly by the two associations.

In addition, DLR employees elected five members to the Board of Directors.

The composition of the Board of Directors at end-2018 and information about other directorships held by the Board of Directors is set out in DLR's annual report for 2018.

Four committees have been set up under DLR's Board of Directors with dedicated supervisory roles in various areas or to prepare certain matters prior to them being considered by the Board as a whole. Committee members are drawn from DLR's Board of Directors, including both employee-elected and AGM-elected. Information about the composition of these board committees and their duties is also provided in DLR's annual report for 2018.

2.2. Recruitment policy

Members of DLR's Board of Directors are elected by DLR's General Assembly at DLR's Annual General Meeting. All members are eligible for re-election.

DLR will continually ensure that the members of DLR's Board of Directors have sufficient collective knowledge, professional competence and experience relative to DLR's business model and strategy. The Nomination Committee set up under the Board of Directors prepares the full Board's review of issues associated with the knowledge and experience of DLR's Board members. One of the responsibilities of the Nomination Committee is to identify and recommend candidates to

DLR's Board of Directors and to prepare a description of the functions and qualifications required to participate in the work of the Board of Directors at DLR. When recommending candidates to the Board of Directors, DLR's Nomination Committee also takes into consideration the underrepresented gender and diversity. DLR's Board of Directors has adopted a policy on board diversity for DLR Kredit A/S. The Board of Directors' aim with the policy is to promote the diversity that is relevant and necessary for DLR in its Board of Directors. The composition of the Board should be based on a diversity of skills and backgrounds. Particular emphasis has been placed on the need for diversity with respect to professional background, business experience, gender and age.

Diversity is viewed as a strength that can positively contribute to DLR's development, risk management, robustness, success and growth. DLR's diversity policy is described in further detail in DLR's annual report for 2018.

2.3. Remuneration policy

DLR's Board of Directors has adopted a remuneration policy for DLR Kredit A/S that has been approved by the General Meeting. The remuneration policy states that DLR does not pay variable remuneration components to the Board of Directors, the Executive Board or material risk takers.

DLR's remuneration policy has been shaped by the wish to promote a remuneration practice that is in accordance with and promotes sound and effective risk management, does not encourage excessive risk taking and which is pursuant to DLR's business strategy, values and long-term objectives, including a sustainable business model.

Quantitative data on the remuneration of staff identified as material risk takers is presented in note 7 in DLR's annual report for 2018.

DLR's Board of Directors' Remuneration Committee has a preparatory role in the Board of Director's work concerning remuneration. The Remuneration Committee undertakes the preparatory work ahead of the Board of Directors' decision-making on remuneration matters, including remuneration policy and other decisions relating to remuneration that may affect DLR's risk management. Furthermore, the

Committee also undertakes the preliminary work connected with the Board's task of appointing material risk takers.

2.4. Risk information flow to the management body

DLR's business operations are largely based on the use of IT systems, and DLR seeks as far as possible to support both legislative and business rules along with DLR's prescribed guidelines through system checks and controls and through reporting.

DLR's credit and risk management is based on regular reports (daily, weekly, monthly and quarterly) drawing on DLR business data generated by an internally developed mortgage credit system. The actual credit and risk management models have been established using a data warehouse. The credit and risk management models are developed, maintained and supported by DLR's Model Development department and established partly in a SAS-based environment and partly in DLR's mortgage credit system.

The Executive Secretariat independently attends to a number of reporting tasks in relation to both DLR's Executive Board and Board of Directors. In addition, the Executive Secretariat is also responsible for reporting tasks connected with DLR's Board Committees.

The frequency and extent of reporting varies greatly, from regular monthly reports with a largely fixed structure to more ad hoc reporting duties prompted by, for example, statutory requirements, etc. The necessity and extent of reporting is regularly adjusted in line with regulations, etc. In addition, general updates are presented to DLR's Board of Directors at Board meetings, which are held at least four times a year in connection with the financial reporting process.

Scheduled risk-related reports presented to DLR's Executive Board and Board of Directors are shown in table 1.

Table 1. Overview of DLR's risk reports

Topic	Recipient	Frequency
Briefings – loan offers	Board of Directors	Quarterly
Supplementary collateral and capital requirements	Board of Directors	Quarterly
Capital position – individual solvency need (ICAAP)	Board of Directors	Quarterly
Capital position – contingency plan	Board of Directors	Quarterly
Compliance with capital adequacy reequirement	Board of Directors	Quarterly
Overview of recovery indicators	Board of Directors	Quarterly
Report on Executive Board's administration of guidelines for exposures to banks	Board of Directors	Semi-annual
Liquidity report (ILAAP)	Board of Directors	Annual
Risk assessment	Board of Directors	Annual
Recovery plan	Board of Directors	Annual
Personal data	Board of Directors	Annual
Developments in DLR's lending, market shares and loan portfolio rating	Board of Directors, Executive Board	Monthly
Losses, arrears, impairments and distressed properties, etc.	Board of Directors, Executive Board	Quarterly
Composition of loan portfolio	Board of Directors, Executive Board	Quarterly
Distributed loans by banks	Board of Directors, Executive Board	Quarterly
Portfolio report	Board of Directors, Executive Board	Quarterly
Status report on rating systems	Board of Directors, Executive Board	Semi-annual
Review of assets (S. 78)	Board of Directors, Executive Board	Annual
Independent Risk Monitor's review and reports (S. 71)	Board of Directors, Executive Board	Annual
Compliance report (S.71)	Board of Directors, Executive Board	Annual
Risk and capital management (Pillar III report)	Board of Directors, Executive Board	Annual
Market risk on portfolio holdings	Executive Board	Every 14 days
Assessment of solvency need and potential updates	Executive Board	Monthly
Money laundering and terrorist funding	Executive Board	Annual

3. CAPITAL POSITION

The Danish Financial Business Act and the Danish Executive Order on the Determination of Risk Exposures, Own Funds and Solvency Need, etc. together with the European Parliament and Council's regulation (EU) no. 575/2013 of 26 June 2013 form the basis for DLR's capital management. The Board of Directors and the Executive Board are responsible for ensuring that DLR's capital structure is appropriate and that the total capital ratio complies with regulatory requirements.

3.1. Capital management

DLR's capital structure should provide sufficient capital adequacy and thus create a long-term foundation for running a sound mortgage credit business that can sell bonds on competitive terms. Moreover, the capital structure should be based on having the a high degree of equity given the cost of other capital components, including additional tier 1 capital and tier 2 capital. DLR must also have sufficient resources to ensure continual LTV compliance with respect to covered bond (SDO) loans and to meet OC requirements from the rating agencies and also debt buffer requirements.

Capital targets

DLR is focused on both existing requirements for mortgage credit institutions' composition of capital in accordance with CRD IV/CRR and potential future requirements. The purpose of DLR's capital targets is for DLR to have sufficient own funds to ensure a sound business operation, even during economic slowdowns.

DLR's capital requirement is made up of the basic 8% requirement plus the combined capital buffer requirements and possible pillar 2 requirements. The combined capital buffer requirement will be raised in 2019 relative to 2018 due the final phasing in of the capital conservation buffer and the SIFI buffer. Moreover, the countercyclical capital buffer (cyclical buffer) will be raised by 0.5% on two occasions in 2019; at the end of the first and third quarters, to stand at 1% at the end of September 2019. DLR also aims for an additional surplus.

On the basis of existing regulatory requirements etc., DLR's capital target will rise from 14.7% in 2018 to a range of 16-0-16.5% in 2019, taking into account the phasing in of the known cyclical buffer requirements, which are expected to be 1% at the end of 2019.

Long-term capital plan

DLR's capital management centres around a long-term capital plan focused on complying with future requirements for altered capital structures and the regular phasing in of buffer requirements, etc. The capital plan is continually adjusted to take into account lending growth, capital initiatives, earnings and regulatory changes, etc.

DLR's capital plan going forward to 2023 centres on the following:

- Consolidation of future financial surpluses.
- Use of the IRB approach to calculate risk exposure on its full-time agriculture property portfolio. DLR is working to expand the use of the IRB models to other parts of the portfolio, but any effects hereof are not recognised in the capital plan.
- Continual compliance with LTV requirements and the OC requirements of the rating agencies.
- Issuance of capital to fulfil the debt buffer of 2% of total unweighted lending.
- Ongoing implementation of DLR's universal guarantee concept.
- Inclusion of other potential operational factors, such as expected developments in losses and impairments, lending growth, etc.

The composition of DLR's capital structure, etc. is regularly reassessed against DLR's capital plan.

3.2. Own funds and capital ratio

Over the course of some years, DLR's capital structure has been strengthened towards having a greater share of equity. In addition to equity, DLR's own funds include a small amount of tier 2 capital. The individual components of DLR's own funds at 31 December 2018 are shown in tables 2 and 3.

DLR's own funds increased by DKK 622m in 2018, mainly due to the entire net profit of DKK 707m being transferred to DLR's reserves.

The weighted risk exposure amount for market risk was reduced from DKK 3.7bn at year-end 2017 to DKK 3.0bn at year-end 2018, which is the main reason for the reduction in total weighted risk exposure amount.

At year-end 2018, DLR's own funds were composed entirely of tier 1 and tier 2 capital. Tier 2 capital accounted for DKK 650m, and in total the own funds amounted to DKK 13.0bn at year-end 2018 compared to DKK 12.4bn at year-end 2017.

Table 2. DLR's capital base

(DKKm)	2018	2017
Share capital	570	570
Issuance premium	0	0
Non-distributable reserves	2,338	2,338
Retained earnings	9,359	8,683
Profit for the year	707	824
Tier 1 primary deductions:	-630	-693
Core capital after primary deductions (CET 1 capital)	12,344	11,722
Additional (hybrid) tier 1 capital	0	0
Tier 1 incl. hybrid core capital after deductions	12,344	11,722
Other deductions	0	0
Tier 1 capital incl. hybrid core capital	12,344	11,722
Supplementary capital	650	650
Included supplementary capital	650	650
Capital base before deductions	12,994	12,372
Deductions in capital base	0	0
Capital base after deductions	12,994	12,372

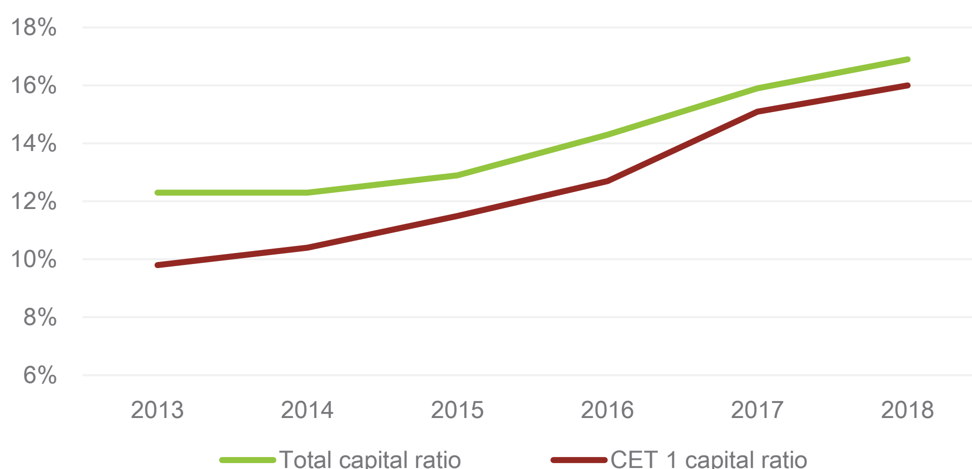
Table 3. DLR's total capital ratio		
(DKKm)	2018	2017
Equity:		
– Distributable reserves	10,636	10,077
– Non-distributable reserves	2,338	2,338
Total equity	12,974	12,415
Capital base after deductions	12,994	12,372
REA	77,074	77,872
Solvency requirement	6,949	6,643
DLR's total capital ratio	16.9%	15.9%

Total capital ratio

DLR's total capital ratio was 16.9% at end-December 2018. DLR has calculated risk exposure on its full-time agriculture portfolio using the IRB approach, while the standard method was used for the other portfolio.

The common equity tier 1 (CET 1) capital ratio was 16.0% at end-December 2018.

Figure 2. DLR's total and CET 1 capital ratios



Both the CET 1 capital ratio and the total capital ratio have been trending upward for quite some time. This is in part due to a gradual adjustment of DLR's capital

structure towards complying with the capital requirements that are still being phased in.

Moreover, further changes to the capital requirements are on the cards, for example in the markets area, while the Basel Committee at the end of 2017 finished its work on a series of important changes to the capital requirements, such as fixing a floor requirement for IRB institutions. Depending on how these recommendations are implemented in the EU, this could also have consequences for determining DLR's total capital ratio.

Given its current own funds and earnings forecasts, DLR expects to be in a position to comply with the gradually increasing capital requirements.

3.3. Capital requirements

Statutory capital requirements amounted to 13.0% for DLR at the beginning of 2019. The capital requirement is based on the classic 8% requirement plus the SIFI requirement, which for DLR was 1.0% at the beginning of 2019, and a capital conservation buffer of 2.5% and a solvency requirement (pillar II requirement) of about 1.0%. From 1 January 2019, the SIFI and capital conservation buffers are fully phased in, and as mentioned above, they stood at 1.0% and 2.5%, respectively, for DLR. To this should be added the countercyclical capital buffer, which has been set at 0.5% at the end of Q1 2019, rising to 1.0% at the end of Q3 2019.

3.4. Solvency requirement, adequate own funds and individual solvency need

DLR's Board of Directors discusses and approves DLR's adequate own funds and individual solvency need every quarter based on a recommendation from DLR's Executive Board. DLR's Risk Committee reviews the calculation prior to submission to the Board of Directors. In addition, the Board of Directors determines the methods, etc. used to calculate DLR's solvency need, including which risk areas, stress tests and benchmarks should be considered.

Determination is based on the credit reservation method ("8+ method"), which is the official method of the Danish FSA. The method covers the risk types assessed

to require capital coverage. Generally, these are credit risk, market risk and operational risk as well as a number of sub-categories. The assessment is based on DLR's risk profile, capital position and any significant forward-looking factors, including budgets, etc.

DLR complies with the instructions in the Executive Order on Risk Exposures, Own Funds and Solvency Need and the Danish FSA's guidelines regarding the "8+ method" supplemented with DLR's own stress tests. Stress tests therefore comprise a key element of risk management at DLR.

DLR's resilience is assessed by, among other things, a stress test covering several different scenarios. One of these scenarios is a severe recession with a significant drop in property prices and a fall in settlement prices in the agricultural area, etc. that correspond to the benchmarks defined in the Danish FSA's macroeconomic stress test. An assessment is made of the soundness of DLR's earnings and own funds under this scenario.

The calculation is further reinforced by management estimates. DLR's risks are assessed in the following main areas. Within each main area, relevant risks are assessed in a number of sub-areas. An estimation is also made of whether an add-on to DLR's adequate own funds is needed because of other factors.

- Credit risk
- Earnings and growth
- Credit risk for large customers
- Model uncertainty
- Other credit risks
- Counterparty risk (financial counterparties)
- Credit risk concentration
- Market risk, including
- Interest rate risk
- Equity market risk
- Exchange rate risk
- Liquidity risk
- Operational risk
- Leverage

The risk factors comprise all the risk areas that Danish law requires the management of DLR to take into account in determining the adequate own funds and solvency need. Relevant departments are also involved in determining DLR's adequate own funds and solvency need, including participating in preliminary and subsequent discussions of stress tests, etc. for the various business areas.

Credit risk is DLR's largest risk area and also where the bulk of the solvency need can be attributed; cf. table 4. DLR therefore has considerable focus on this area. DLR uses the IRB approach to calculate the risk exposure on its full-time agriculture property portfolio. For the other portfolio, DLR uses the standard method to calculate the risk exposure for credit risk. Please also refer to section 4 on credit risk.

Market risk is another important category for DLR. DLR sets aside capital equivalent to 8% of the risk exposure associated with market risk. Moreover, DLR also assesses whether it is exposed to additional risk that requires a capital allocation above the 8%. DLR's market risk is estimated to be limited due to the balance principle, just as DLR has set narrow limits for interest rate risk.

Operational risk is defined as the risk of direct or indirect loss caused by inadequate or faulty processes, systems etc. Given DLR's simple business model, focus on internal processes, etc., this risk is estimated to be limited. DLR employs the Basic Indicator Approach (BIA) to calculate the capital requirement for operational risk .

As well as the above-mentioned factors, management regularly assesses if additional factors should be included in the capital adequacy and solvency need calculation.

DLR thus allocates the statutory 8% capital requirement for each risk area and then assesses whether further capital should be set aside; for example due to large exposures, the general credit quality of the portfolio and elevated market risk. Determination of the need for a potential add-on is based on either the stress tests defined in Danish FSA guidelines, DLR's own stress tests or by a management assessment of whether individual business areas require an add-on.

DLR's adequate own funds were calculated at DKK 6,949m at year-end 2018. See table 4. As DLR's total risk exposure amount (REA) was DKK 77,074m, this equates to a solvency need of 9.02%.

In accordance with CRR article 92, DLR has calculated its excess capital with respect to the individual solvency need at 3.8 percentage points or DKK 3.0bn at year-end 2018. See table 5. DLR considers this satisfactory.

Table 4. DLR's capital adequacy and solvency need at 31 December 2018

Risk area	Adequate capital base (DKKm)	Solvency need
Credit risk	6.205	8,05%
Market risk	550	0,71%
Operational risk	193	0,25%
Other factors	0	0
Internally calculated solvency need	6.949	9,02%
Add-on (special risks)	0	0
Total	6.949	9,02%

Source: Calculation of adequate capital base and individual solvency need at http://www.dlr.dk

Table 5. DLR's capital base and excess capital at 31 December 2018

Current key figures	Amount (DKKm)
Capital base after deductions	12,994
Adequate capital base	6,949
SIFI premium	771
Capital conservation buffer	1,927
Counter-cyclical capital buffer	385
Excess capital	2,956
Total capital ratio	16.9%
Individual solvency need, pc	9.0%
SIFI premium (2019)	1.0%
Capital conservation buffer (2019)	2.5%
Counter-cyclical capital buffer (Q1 2019)	0.5%
Excess capital, pc point	3.8%

Source: Calculation of adequate capital base and individual solvency need at http://www.dlr.dk

3.5. Use of ECAIs

Article 138 of CRR allows a credit institution to appoint one or more External Credit Assessment Institutions (ECAI) to determine credit quality steps and risk weightings for financial assets.

DLR has appointed S&P Global Ratings for the purpose of credit assessment/risk weighting of exposures to credit institutions. S&P was a natural choice given that S&P is the only ratings agency that provides both issuer and bond ratings on DLR.

The credit quality step is based on the counterparty's rating. If the counterparty is not rated by the appointed rating agency, the country rating is used for the country the counterparty is domiciled in.

Table 6 shows the conversion of S&P's rating classes to credit quality steps for exposures to corporates, institutions, sovereigns and central banks.

Table 6. Rating classes and credit quality steps

Credit quality step	S&P's rating classes	Exposure to corporations	Exposure to institutions (> 3M)	Exposure to central government or central banks
1	AAA to AA-	20 %	20 %	0 %
2	A+ to A-	50 %	50 %	20 %
3	BBB+ to BBB-	50 %	50 %	50 %
4	BB+ to BB-	100 %	100 %	100 %
5	B+ to B-	150 %	100 %	100 %
6	CCC+ adn under	150 %	150 %	150 %

The CRR Delegated Act, article 129(1)(c), states that exposures to credit institutions (for example, guarantees) that qualify for quality step 1 can comprise up to 15% of the collateral for an institution's outstanding (mortgage) covered bonds (SDRO/SDO). Due to concentration in the Danish mortgage credit system, Denmark has also been permitted to use exposures to counterparties on credit quality step 2 for up to 10% of the collateral, though the aggregate exposure to credit institutions may not exceed 15% of the collateral.

3.6. Supplementary collateral, OC and the debt buffer

When granting loans based on the issuance of covered bonds (SDO), DLR has to provide supplementary collateral if the LTV is exceeded, mainly due a fall in the value of the property. Compliance with this obligation is continually monitored by DLR. The volume of supplementary collateral has trended downward in recent years. Besides the costs of supplementary collateral, the risk and cost of LTV compliance is linked to credit risk, as losses on the loan portfolio will be correlated with falls in property prices.

To cover breaches of LTV, DLR can use the capital in Capital Centre B and to some extent claims against banks.

DLR has, furthermore, issued DKK 5.0bn in senior secured bonds (SSB) that can be used both for LTV compliance and as overcollateralisation (OC) to support

bond ratings. DLR has also issued DKK 2bn in Senior Resolution Notes (SRN) and DKK 1bn in Senior Non-Preferred Notes (SNP) to comply with the debt buffer requirement. The proceeds of these issues can also be used as supplementary collateral.

Debt buffer

Requirements have been introduced for mortgage credit institutions to establish a debt buffer of 2% of their total unweighted lending. The requirement was introduced at the same time as mortgage credit institutions were exempted from bail-in measures in connection with a resolution/restructuring of a mortgage credit institution and also from the requirement of having liabilities eligible for writing down, which the banks have to fulfil.

When fully implemented, DLR's debt buffer is estimated to amount to about DKK 3bn at current lending levels and will be phased in between 2016 and 2020 in such a way that the buffer amounts to at least 30%, 60%, 80%, 90% and 100%, respectively, of the requirement by 15 June each year.

In mid-2018, a supplementary debt buffer requirement was adopted. According to this requirement, the institutions requirement for own funds and debt buffer combined must represent at least 8% of its total liabilities. This requirement must be met by 1 January 2022.

The debt buffer may comprise equity capital, additional tier 1capital, tier 2 capital and unsecured senior debt – all capital/debt should be issued by the General Capital Centre. Issued capital/debt should also have a maturity of at least two years at issuance.

DLR has issued a total of DKK 3bn in either Senior Non-Preferred Notes (SNP) or Senior Resolution Notes (SRN) to meet the debt buffer requirement. SNP and SRN are both unsecured debt that in a resolution situation can be written down or converted to shares. SNP and SRN rank equally for payment in a resolution situation. Both types of senior debt are eligible for inclusion in S&P's calculation of an institution's Additional Loss-Absorbing Capacity (ALAC) and can thus provide an uplift to the issuer rating.

3.7. Rating

DLR was first rated by S&P in May 2012. At that time DLR was assigned an issuer rating of BBB+ (Long-Term Credit Rating) with a stable outlook.

Since May 2017, DLR has held an issuer rating (Issuer Credit Rating – "ICR") of A-. The rating is supported by an ALAC support uplift of +1, which is added to DLR's Stand-Alone Credit Profile (SACP) of bbb+. In July 2018, S&P changed the outlook for DLR's rating to positive when they changed the outlook for Denmark's economic risk to positive. This means there is a possibility that Denmark will move to "BICRA" group 2 (Banking Industry Credit Risk Assessment) within a period of two years, which would lift the anchor rating for financial institutions in Denmark by one notch from bbb+ to a-.

Table 7. DLR's ratings from S&P, end-2018

Bond ratings	
Capital Center B (SDO)	AAA (stable)
General Capital Center (RO)	AAA (stable)
General Capital Center (SRN, SNP)	BBB (stable)
Other ratings	
Issuer (Long-Term)	A- (positive)
Issuer (Short-Term)	A-2 (stable)

DLR's covered bonds (SDO) and mortgage bonds (RO) have been assigned the highest rating of AAA. With respect to S&P's Covered Bond rating method, it is possible to obtain a bond rating that is up to 9 notches above the ICR. S&P deducts one notch for DLR not binding itself to a particular OC level ("voluntary OC"). With an ICR of A-, DLR only has a need for 6 of the 8 remaining notches to achieve the AAA rating and thus has 2 unused uplifts in its bond rating. This contributes to lowering the OC requirement on DLR's capital centres.

Table 8. DLR's covered bond rating at S&P	
Issuer Credit Rating (ICR)	**A-**
Sovereign support	0
Adjusted ICR	A-
BRRD uplift	+2
Reference Rating Level (RRL)	**a+**
Jurisdiction support	+3
Jurisdiction Rating Level (JRL)	**aa+**
Collateral support	+4
Max achievable CB rating	AAA
Used collateral support notches	-1
Voluntary OC	-1
Unused uplift	**2**

S&P's OC requirements compatible with the AAA rating have most recently been set at 12.1% for Capital Centre B and 2.5% for the General Capital Centre. The OC requirements are met for the nominal bond amount in the capital centre and covered by surplus capital in the capital centres. This is achieved using assets acquired for own funds together with funds obtained by issuing senior debt.

DLR has not made any commitment to S&P about maintaining a certain level of overcollateralisation in its capital centres, but DLR has, nevertheless, a clear ambition of maintaining its current AAA rating. As S&P's OC requirement is dynamic and changes due to, for example, changes in activity levels, composition and quality, or due to a change in S&P's criteria or models, the need for supplementary collateral will change going forward.

Senior secured bonds (SSB) are generally assigned a rating two notches above the issuer rating. DLR has decided not to have its current SSB issues rated. Both the SRN and the SNP issues from 2017 are rated BBB, which is one notch below DLR's SACP.

4. CREDIT RISK

Due to the chosen business model, DLR's credit risk is concentrated around agricultural and commercial property, and to a limited extent owner-occupied property in the form of residential farms and owner-occupied homes in Greenland and on the Faroe Islands. As a key element of its business model, DLR has also made loss-mitigating agreements with its loan-distributing banks.

DLR's Board of Directors has determined DLR's credit policies and guidelines for the granting of credit – including limits for the Executive Board's lending authorities – in order to achieve the desired level of risk. Within the set limits, internal business procedures and instructions further delegate lending authorities to the various sections/persons in DLR's organisation.

4.1. Credit rating

To identify credit risk, a detailed assessment is made of the mortgageable property and the borrower's finances.

The starting point for assessing the mortgageable property is determining its market value. This is done by DLR's own valuation experts, who have significant local knowledge. The condition and marketability of the property, etc. are also taken into account in the valuation.

Credit scoring is the responsibility of DLR's loan department in Copenhagen. Assessing the customer's finances normally involves several years of financial statements. Credit scoring models are used for the most important customer segments. Whether additional or more detailed information about the borrower is required varies from case to case and depends on the borrower's financial circumstances. The more complex and risky the case, the more detailed the investigations to ensure an adequate basis for decision-making.

DLR's organisational set-up ensures a separation of functions between the property valuation and the credit assessment.

4.2. IRB models

The capital adequacy rules allow for the use of either the standard method or the internal ratings based approach (IRB approach) to calculate risk exposure for credit risk purposes. Using the IRB approach gives credit institutions greater control of their credit risk and thus a better and more accurate and risk-based foundation for calculating their capital requirement.

DLR has since Q1 2016 used the advanced IRB approach for its portfolio of full-time farms when calculating risk exposure connected to credit risk.

The full-time farm portfolio amounts to DKK 75bn, or 51% of DLR's total loan portfolio.

Advanced statistical models are also used for internal risk management for significant parts of the business portfolio, equal to an additional DKK44bn.

Credit risk models

The models DLR uses to estimate portfolio risk (behavioural score) comprise PD (Probability of Default) and LGD (Loss Given Default). PD is calculated at customer level, while LGD is calculated for the all properties in the collateral pool. The same structure is involved in a loan application situation, though additional components relevant to the application situation are also included.

PD is defined as the probability of a customer defaulting on payments and being more than 45 days in arrears within the next 12 months or of an impairment provision being made against the customer's exposure. A high PD reflects a high risk on a customer, whereas a low PD reflects a low risk on a customer.

All customers are rated on 3 components that together give a PD score:

- Statistical PD score
- Financial history
- Economic conditions correction

Statistical PD is calculated using a number of financial key figures, the customer's payment history and chosen payment channel. If DLR has no financial data registered for a customer or the data is more than two years' old, the customer's

earnings and capital will be automatically rated as unsatisfactory and so these customers will receive a high PD.

The customer's financial history is included in the model and is based on financial figures for the past 3-5 years. If DLR does not have at least three years of financial data registered, the customer's rating will be calculated as if the financial results of the past three years were unsatisfactory.

The model also takes into account certain economic factors for the various types of operation, and financial results are compared with the sector average. Forecasts are used to determine the agricultural sector's earnings outlook, while a prudence principle means the model has been set up so economic factors can only affect a customer's rating negatively.

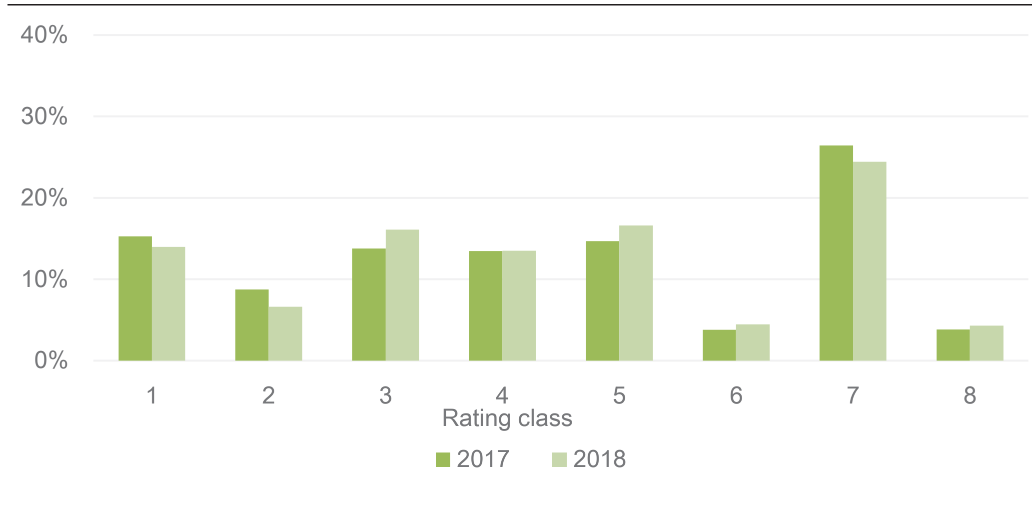
The distribution of DLR's rating classes by PD band is shown in table 9. Customers with OEI (objective evidence of impairment) where no impairment loss has been identified are always placed in rating class 7 irrespective of whether the model rating is better.

Table 9. DLR's PD rating classes

Rating class	Profile	PD band (pc)
1	Extremely good	[0; 0,2]
2	Very good	]0,2; 0,4]
3	Good	]0,4; 0,8]
4	Acceptable	]0,8; 2]
5	Certain signs of weakness	]2; 9[
6	Poor	]9; 25]
7	Very poor	]25; 100[
8	Default	100

Figure 3 shows the distribution (in %) of DLR's full-time agriculture portfolio by PD rating class. Note that 29% of the portfolio was placed in rating class 7 and 8 at the end of 2018 compared to 30% one year earlier. At the end of 2016, the share was 35%. Around 90% of the customers in class 7 are only placed in class 7 because they have OEI (overrides).

Figure 3. Full-time agriculture portfolio by PD rating classes



LGD indicates DLR's financial loss relative to exposure when a customer defaults. The model is based on DLR's experience of impairments and distressed properties.

The overall LGD model consists of a PR (probability of realisation) element, which indicates the likelihood that a default will lead to a realisation of the mortgage collateral, and an LGR element (loss given realisation), which indicates how great a loss realisation would result in for DLR.

The LGR model incorporates the value of the mortgage collateral and the size of the exposure. Defined haircuts (deductions) for a property's individual asset subcomponents provide an estimate of the value of the customer's property in the event of a realisation (forced sale or the like), while exposure is calculated as the loan's current position plus an estimate for interest, costs (such as sales costs), etc. for the period until the realisation is completed. The exposure includes selling costs etc.

A positive LGR equates to an expected loss for DLR, while a negative LGR means DLR has a safety margin and can expect to avoid a loss.

If DLR is aware of particular factors in individual cases that render the model's result misleading, an override (correction) is performed on the model's output.

As a result of new international guidelines and technical standards from the European Banking Authority (EBA), DLR is currently carrying out a major re-modelling of the approved IRB model. The changes will include both PD and LGD models. DLR is well underway in developing new PD models complying with the new rules, while changes to the LGD models are scheduled to be made during 2019.

Table 10. DLR's PD estimates for full-time farms (IRB portfolio)

PD (excl. customers in default)	9.7%
PD obs.	2.0%

Note: PD is re-calculated for regulatory purposes. PD obs. is the observed level at end-2018.

Figures are weighted for exposure.

Table 11. DLR's LGD estimates for full-time farms (IRB portfolio)

LGD (excl. customers in default)	10.1%
LGD obs.	0.3%

Note: LGD is re-calculated for regulatory purposes. LGD obs. is the realized loss level for defaulted customers in 2018.
Figures are weighted for exposure.

Validation of ratings

DLR regularly monitors portfolio ratings, as credit scores are re-calculated every month. Both the Board of Directors and the Executive Board receive periodical reports on the rating systems and portfolio developments.

A comprehensive validation report is prepared once a year, which includes a number of pre-defined validation tests. The report is sent to the Risk Committee, the Board of Directors, the Ratings Committee and Internal Audit.

DLR has established a Ratings Committee comprising representatives from the Executive Board, risk management the model development unit and the loan department. The Rating Committee receives quarterly validation results, which are discussed in the committee. The committee serves to assess the rating systems

and consider identified weaknesses and any problems in relation to the rating system and the use of ratings as well as any needs for changes, adjustments prudence add-ons, etc.

Business use of the IRB approach at DLR

DLR uses models when calculating risk exposures. The models have also been used for some time in connection with loan approvals, monitoring and risk management. The models are regularly adjusted and have been developed as both statistical and expert models.

Models and ratings systems are fully implemented components of DLR's standard loan application and loan approval process. Models are also used to identify riskier exposures, to calculate individual impairments and to determine administration margin adjustments. The rating system is also used for portfolio monitoring and in several management reports.

Ratings are an important element in the overall credit score in the loan approval process. Both behavioural score models and application score models are actively employed in loan application processing. The use of ratings in the loan approval process has for many years been an important element in assessing the risk on both loans to new customers and when extending existing exposures. A customer's rating also influences the organisational processing of the loan application.

So far, DLR has only the approval of the Danish FSA of the IRB model for the full-time farm portfolio. Mortgaging full-time farms is often quite complicated and may include mortgaging several properties with different positions in the order of priorities, etc. This requires a detailed manual review of the case. The ratings system is a useful and important tool in the credit process that increases focus on the more risky cases. DLR's ratings system is also used when calculating individual and collective impairments.

4.3. Monitoring credit risk

DLR's loan portfolio is screened every quarter and based on established risk signals – such as arrears, registration in RKI-Experian (credit information register)

and financial reports – customers are selected for a manual check to ascertain whether there is any objective evidence of impairment (OEI). For customers with OEI, a calculation is made of whether DLR can expect to incur a loss if the asset has to be realised. Based on this, an impairment provision may be made.

Individual impairments are thus made for customers with weak credit quality and DLR at the same time estimates that its exposure is not fully secured by the mortgaged property or the guarantees provided, etc.

Collective impairments of loan portfolios are made in models on the basis of the IFRS 9 principles and, if it is found that the models for calculating the collective impairment charges do not adequately reflect an increased risk, they will be supplemented by an estimated add-on.

Regular reports are prepared on DLR's lending, including lending developments by sector/property type, loan type, etc. These reports are sent to employees in the credit area, the Executive Board and the Board of Directors, depending on the relevance of the report for the particular recipient group.

4.4. Guarantee schemes

As well as collateral in the mortgaged property and a detailed credit assessment, DLR has reduced its credit risk on individual loans and its risk at portfolio level via various guarantee agreements made with DLR's loan-distributing banks (DLR's shareholders).

DLR has applied a universal guarantee concept since the start of 2015, covering loans granted on agricultural property, commercial property and cooperative housing. Under the universal guarantee concept, the risk on each individual bank's loan portfolio at DLR is borne in the following order.

1. Risk cover – 6% guarantee provision

The loan-distributing bank generally provides a direct individual guarantee on disbursement that covers the individual loan for its entire term and covers the least secure part of the loan. The guarantee covers 6% of the loan's outstanding debt. In some cases, for example when certain loans that have an earlier commercial property guarantee are remortgaged, DLR will require a supplementary guarantee

to be posted. See below. The guarantee is reduced proportionally as the loan is paid down.

2. Risk cover – Loss-offset scheme

DLR's universal guarantee concept also encompasses the possibility of offsetting losses in the commission payments made to the bank, whereby all losses incurred by DLR beyond those covered by the 6% guarantee provided at the loan level are offset. Only losses on loans distributed by the particular bank are offset in commission payments.

3. Risk cover – portfolio level

If losses to be offset exceed the current year's and the following nine years' commissions, DLR can demand that such losses be covered by drawing on all the direct 6% guarantees provided.

At the end of 2018, 61% of DLR's loan portfolio was covered by the universal guarantee concept.

Figure 4. DLR lending covered by the uniform guarantee concept
- for loans offered after 01.01.2015

Loans granted up to 31 December 2014

DLR's loan portfolio was covered by two different guarantee concepts up to 2014. Guarantees provided under these concepts still apply, but the extent of the guarantees is being reduced as the loans covered are redeemed or paid down, etc.

For loans on commercial property, the loan-distributing banks have previously provided an individual loan-loss guarantee that covers the outermost and most risky part of the loan. The guarantee covered as a minimum that part of the loan that exceeded 60% of the value of residential rental property and cooperative housing without a municipal guarantee along with that part of the loan that exceeded 35% of the value of office and retail property. Loans on manufacturing and workshop property and loans issued to the Faroe Islands and Greenland required more extensive guarantees. The guarantee amount was written down proportionally as principal payments were made, and the guarantee period generally ran for up to 16 years (potentially longer for loans with interest-only payments).

Loans for agricultural properties were previously covered by a cooperative agreement between DLR and its partner banks, consisting of a collective guarantee scheme for lending granted under the cooperative agreement and access to offset against the commission payments to the individual bank to the benefit of DLR if loans granted for agricultural properties via the bank result in a loss for DLR. The collective guarantee scheme will be invoked if DLR’s aggregate losses within a single calendar year exceeds 0.25%of the loan covered. Hence, DLR would have to bear losses of up to roughly DKK 80m (DLR’s excess) in 2019.

As loans are transferred to the universal guarantee concept, so the potential for offsetting loans under the cooperative agreement will be reduced, just as the potential for loss-offsetting under the universal guarantee concept does not yet offer full coverage. Losses may therefore be offset to a certain extent across guarantee concepts, so that the implementation of the universal guarantee concept and the reduction in the scope of the existing cooperative agreement do not lead to an increased risk for DLR.

Loans to Greenland and the Faroe Islands are not covered by the universal guarantee scheme. Hence, more extensive guarantees are required in these loan areas.

96% of DLR’s portfolio was covered by one of DLR’s guarantee concepts at the end of 2018.

Table 12. Overview of DLR's guarantee concepts

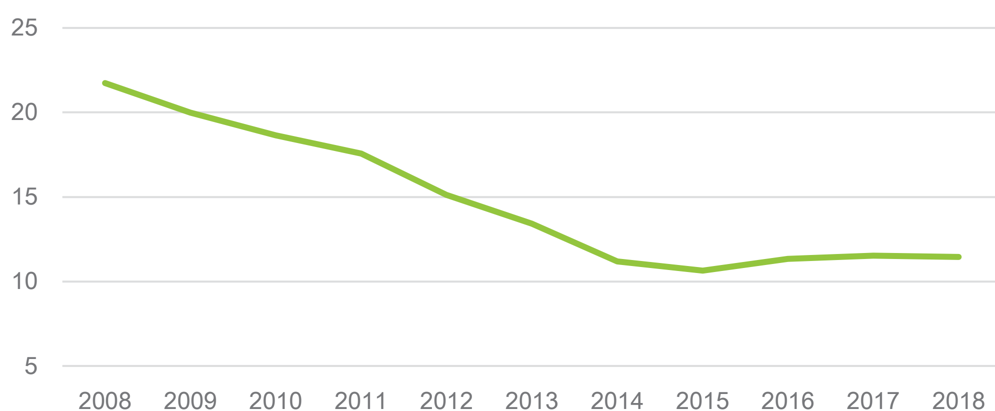
	Outstanding bond debt covered by guarantee concept (DKKbn)	
	Dec. 2018	Dec. 2017
Cooperative agreement - agriculture (until end-2014)	32.1	41.4
Commercial property guarantee (until end-2014)	18.4	22.6
Universal guarantee concept - agriculture (from start-2015)	54.5	43.9
Universal guarantee concept - commercial (from start 2015)	35.3	25.6
Government guarantee - YJ loan	0.3	0.3
Covered by guarantee schemes	140.6	133.6
Total outstanding bond debt	146.4	140.7
Proportion covered by guarantees	96.0%	950%

4.5. Leverage

DLR has over a number of years regularly reduced its leverage ratio (calculated as lending relative to equity) from just under 22 in 2008 to 11.5 at the end of 2018. See figure 5. The slight increase in the leverage ratio since 2015 is a reflection of several factors, including DLR's buyback of equities from Finansiel Stabilitet and Danmarks Nationalbank in 2016, the repayment of additional tier 1 capital in 2017 and solid lending growth since 2016.

The current low leverage ratio is positive for DLR's aggregate risk.

Figure 5. DLR's leverage (lending as a pc of equity)



Applying the current CRR definition of leverage ratio, where leverage is calculated as the total risk exposure amount (REA) relative to tier 1 capital, DLR's leverage ratio was 7.3% at the end of 2018. See figure 6 and table 13.

DLR's Board of Directors has set a lower limit for the leverage ratio of 5% in accordance with the CRR definition. DLR's current leverage ratio of 7.3% thus provides a significant capital surplus relative to both the Board of Directors' requirement of 5% and the likely regulatory requirement of 3%. Please refer also to the pillar III appendix for further information on DLR's leverage ratio.

Figure 6. DLR's leverage ratio, CRR

Table 13. DLR's leverage ratio according to CRR, end-2018

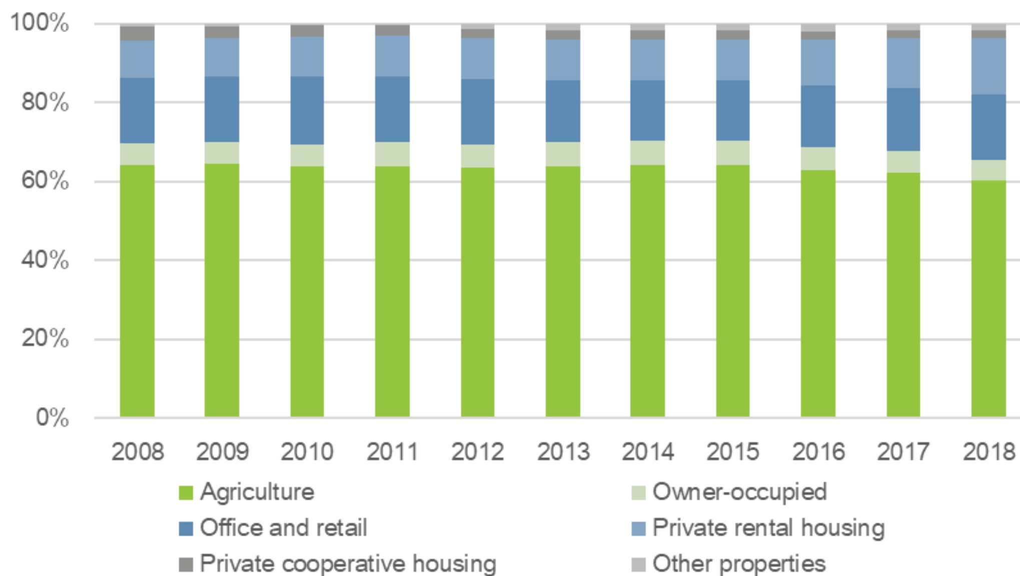
	(DKKm)
Total assets according to accounts	160,738
Total balance sheet exposures cf. CRR	161,404
Off-balance sheet items, loan offers, etc	7,178
Tier 1 (core) capital deductions (sector equities, etc.)	-630
Total exposure for leverage ratio calculation	167,952
Tier 1 (core) capital	12,344
Leverage ratio	7.3%

4.6. Composition of loan portfolio

Property categories

At the end of 2018, DLR's loan portfolio (measured as outstanding bond debt) amounted to DKK 146.4bn. Loans on agricultural properties accounted for 60% and on owner-occupied properties, including residential farms, for 5% of the portfolio, while loans on commercial property and private cooperative housing properties accounted for 35%. See figure 7.

Figure 7. DLR's lending by property category



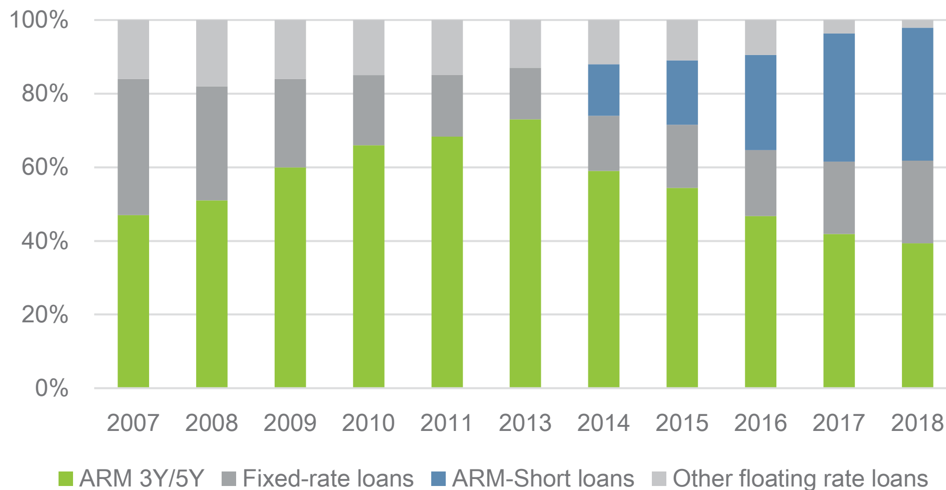
Loan types

The composition of DLR's loan portfolio by loan type is shown in figure 8. DLR has since 2014 been running campaigns encouraging borrowers with short ARM loans to remortgage into loans with longer underlying funding. DLR's loan portfolio was dominated by ARM loans, particularly 1Y ARMs, up to 2013. Over the past five years, however, the share of ARM loans has fallen considerably to 39% of DLR's loan portfolio at the end of 2018 compared to 73% at the end of 2013.

During the years 2014-2016, DLR's campaigns targeted only 1Y and 2Y ARM loans, and a marked shift occurred in 2014 and 2015 from annually refinanced

loans to loans that were refinanced every three years. The campaigns were extended in 2017 to also target 3Y ARM loans, and since 2017 there has been a shift from loans with refinancing every three years to loans with refinancing every five years.

Figure 8. DLR's loans portfolio by loan type



The share of ARM Short (RT-Kort) loans, which DLR introduced at the end of 2013, has also increased markedly in connection with the remortgaging of 1Y and 3Y ARM loans. ARM Short loans are based on issues of floating rate bonds pegged to either the CIBOR or the CITA rate, so far with maturities of 3-5 years.

At the end of 2018, the share of 1Y ARM loans had been reduced to less than 5% of the loan portfolio compared to 57% at end-2013, while 3Y and 5Y ARM loans accounted for 5% and 28%, respectively. ARM Short loans accounted for 36%. Fixed-rate loans, meanwhile, accounted for 22%, while other short-rate loans made up 2% of the portfolio at year-end 2018.

Repayment profile

The share of total gross lending with an initial interest-only period was 41% in 2018, which was a fall from 49% in 2017. Interest-only loans are particularly popular in the agricultural area, as 62% of gross lending to the agricultural sector was with an initial interest-only period in 2018. In the commercial property area, the share of gross lending with an initial interest-only period in 2018 was just 11% for

office and retail property, while it was 31% for private residential rental property and 50% for private cooperative housing.

With regard to DLR's overall loan portfolio, the share of loans with an initial interest-only period was 38% at the end of 2018, which was a small drop from 41% in 2017. Hence, the share of loans with an initial interest-only period has fallen steadily over the past five years from 54% of the overall portfolio in 2013 – and this trend applies across all property categories.

Interest-only loans accounted for 49% of lending to the agricultural sector at year-end 2018, which was marginally lower than in 2017. From 2013 to 2016, the share of interest-only loans to the agricultural sector was stable at around 56%. The share of loans with an initial interest-only period has fallen even more markedly in the private residential rental segment in the past five years, from around 70% to 33% at year-end 2018. Interest-only loans are least common among office and retail properties along with owner-occupied dwellings, including residential farms, as the shares here were 13% and 18%, respectively, at the end of 2018.

Geographical distribution

As a result of its business model, DLR's loan portfolio is limited to agricultural, residential farm, commercial and cooperative housing properties, with 60% concentrated in the agricultural sector. Geographically, DLR's lending is spread across Denmark and reflects the coverage of the loan distributing banks' (DLR's shareholders) branch networks. DLR also has lending in Greenland and on the Faroe Islands totalling DKK 2.1bn, corresponding to 1.4% of the loan portfolio.

Table 14. DLR's lending by region and property type, end-2018

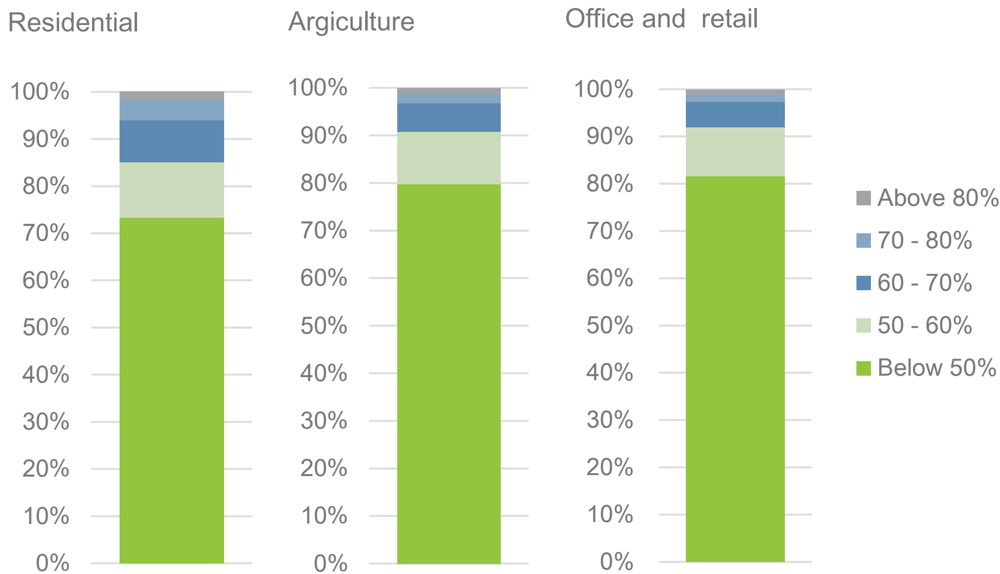
	Agriculture	Owner-occupied	Office and retail	Private rental property	Cooperative housing	Other	% of total outstanding bond debt
Northern Jutland	24.2%	16.3%	16.8%	19.5%	26.7%	25.4%	21.9%
Central Jutland	31.0%	22.7%	29.0%	30.4%	22.4%	40.5%	30.1%
Southern Region	29.5%	22.7%	23.0%	28.4%	12.8%	24.2%	27.5%
Capital Region	1.3%	4.8%	15.8%	9.3%	12.2%	4.0%	5.3%
Zealand	14.0%	13.3%	14.6%	11.5%	24.0%	5.9%	13.8%
Greenland	0.0%	6.6%	0.8%	1.0%	1.9%	0.0%	0.7%
Faroe Islands	0.0%	13.6%	0.0%	0.0%	0.0%	0.0%	0.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

4.7. Loan portfolio LTV

DLR grants loans against a mortgage on real property within the statutory lending limits for the various property categories. To determine DLR's position in the order of mortgage priorities and whether this constitutes a significant risk, DLR continually calculates LTV (Loan-To-Value) values for the individual loans across all property categories.

At the end of 2018, 91% of loans granted on agricultural properties were in the <60% LTV band based on DLR's latest valuations, including valuations made in connection with continual covered bond (SDO) monitoring, while 87% of the lending on commercial properties was in the <60% LTV band – not taking into account the guarantees provided. Residential properties, including residential rental property and cooperative housing properties, have an LTV limit of 80%, which is why the proportion placed under 60% is naturally lower for these property categories.

Figure 9. DLR's lending by LTV band, end-2018



To ensure the statutory overcollateralisation (OC) of DLR's Capital Centre B (cover pool), a valuation is carried out at least annually on commercial property and every three years on residential property. This can be done without a physical inspection (market valuation), but if a physical inspection has been carried out, this valuation is prioritised.

The continual monitoring of LTV values is partly based on these current market valuations and is a permanent feature of DLR's management reporting. DLR has currently provided DKK 10.7bn in supplementary collateral and has, in addition, an overcollateralisation of DKK 22.5bn consisting of collateral in particularly secure assets plus the option of applying claims against banks (bank guarantees) in case of falling prices. Overall, it is estimated that the current overcollateralisation enables DLR to withstand a price fall of about 20%.

4.8. Unweighted exposure for credit risk

DLR adheres to the Danish Executive Order on Financial Reports for Credit Institutions and Investment Firms, etc. Please refer to this and to the significant accounting policies in DLR's Annual Report (note 49) for definitions of non-performing and impaired loans for accounting purposes as well as a description of methods used to determine value adjustments and impairment charges.

The total value of DLR's unweighted exposure for credit risk was DKK 136,483m on 31 December 2018, calculated after guarantees and conversion factor.

4.9. Arrears, impairments and losses

The number of borrowers unable to meet their payment obligations towards DLR fell sharply throughout 2016 and 2017 (see figures 10 and 11), and at end-2017 was back at pre-financial crisis levels. The level of arrears rose again in 2018, driven primarily by agricultural customers' impaired ability to pay.

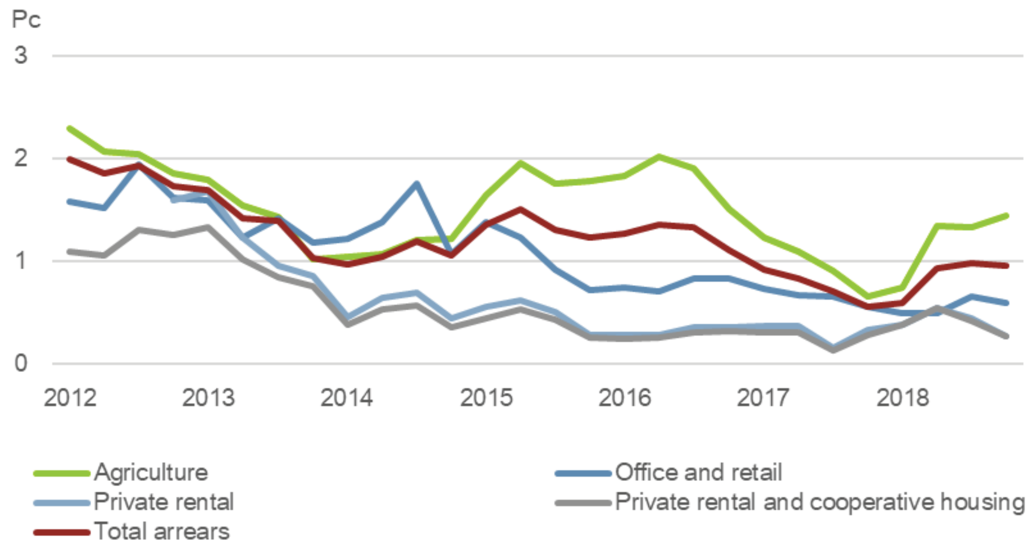
Overall, the arrears ratio – measured as the percentage of mortgage payments in arrears 3½ months after the due date – was 0.96% in mid-January 2019, against 0.56% a year earlier. The increase in arrears was driven by higher arrears ratios for agricultural properties, which rose to 1.44% in mid-January 2019 from 0.66% a year earlier.

Pork prices have fallen steadily since the summer of 2017, reaching a current-cycle low in December 2018. In addition to the usual seasonal issues, the pork market has been under pressure from an increase in pork production in the USA, Canada and Brazil, which are major exporting countries.

The expected drop in milk prices occurred already at the 2017/2018 changeover and proved far stronger than anticipated. Milk prices rose again in the second half of 2018, driven in particular by higher butter prices, but butter prices fell in December partly because a sharp increase in the supply of milk owing to the relatively high milk prices, partly because of a small drop in butter consumption in the EU as a result of seasonal fluctuations.

Figure 10. DLR's 105 days arrears ratios

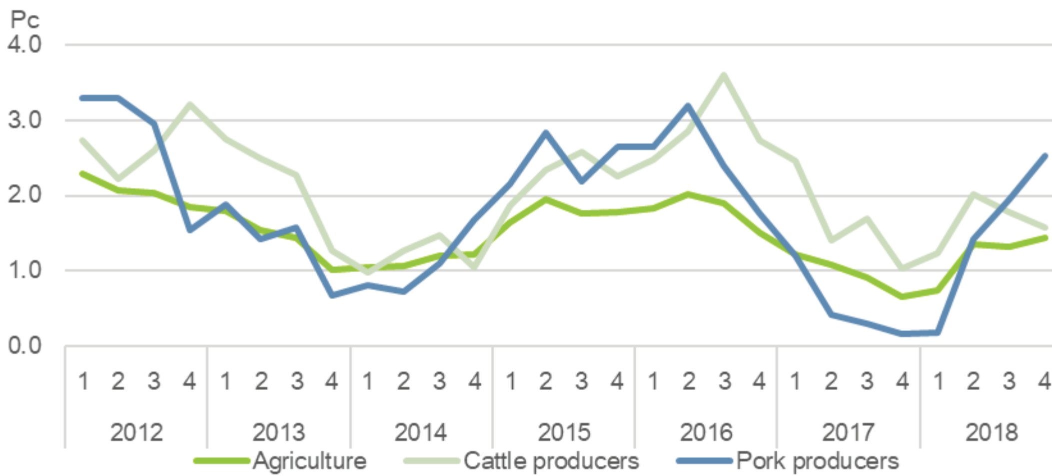
- Key property categories



The deteriorating terms of trade for dairy and pig farmers are reflected in the arrears ratios, which were 1.58% for cattle farmers and 2.53% for pig farmers in mid-January 2019.

Figure 11. 105 days arrears ratios

– Agriculture, key production arears



As mentioned, DLR regularly monitors its loan portfolio to identify potential impairments. An individual assessment is also made of a number of large exposures

and certain exposures showing signs of financial distress, etc. If an assessment identifies OEI, an impairment provision is made against the exposure equivalent to the loss DLR estimates it could potentially incur.

Accumulated impairments rose by DKK 13m in 2018 after a declining trend since 2015. Total individual impairments amounted to DKK 287m at the end of 2018 compared to DKK 278m at the end of 2017. To this should be added collective impairments calculated in models of DKK 130m and a management estimate of DKK 119m, for total impairments at end-2018 of DKK 537m. Relative to DLR's total lending of DKK 148.5m calculated at fair value, the accumulated impairments represented 0.36% at end-2018, which was unchanged from 31 December 2017.

Losses and impairments had a DKK24m negative impact on the financial statements for 2018, equal to 0.02% of the loan portfolio.

Figure 12. Impairment provisions as share of lending

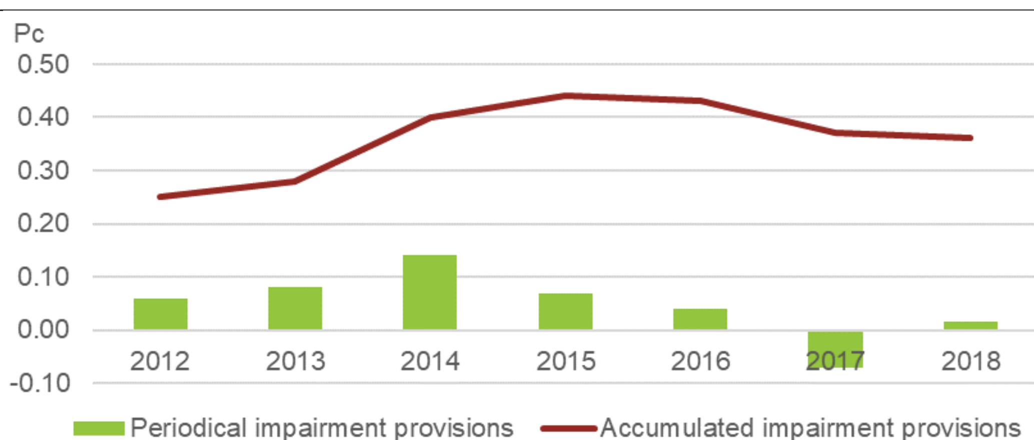
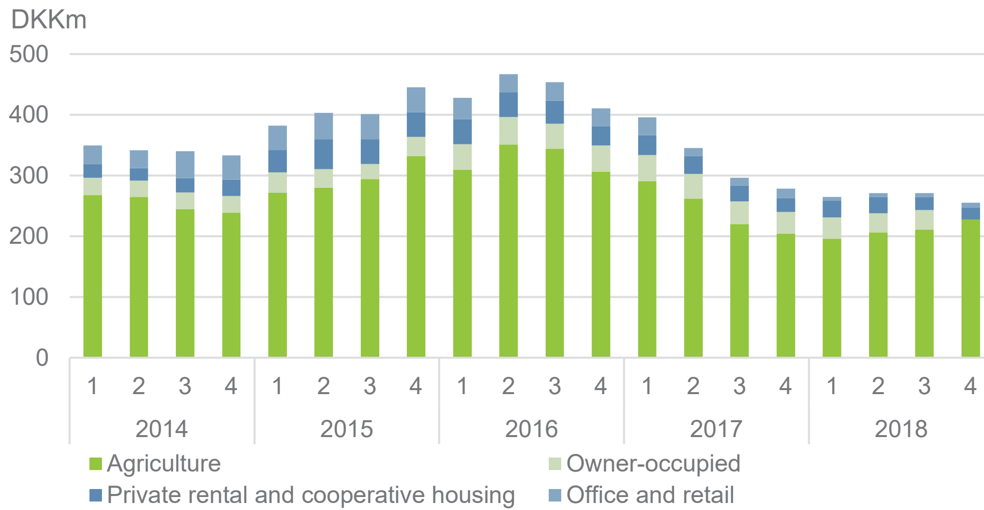


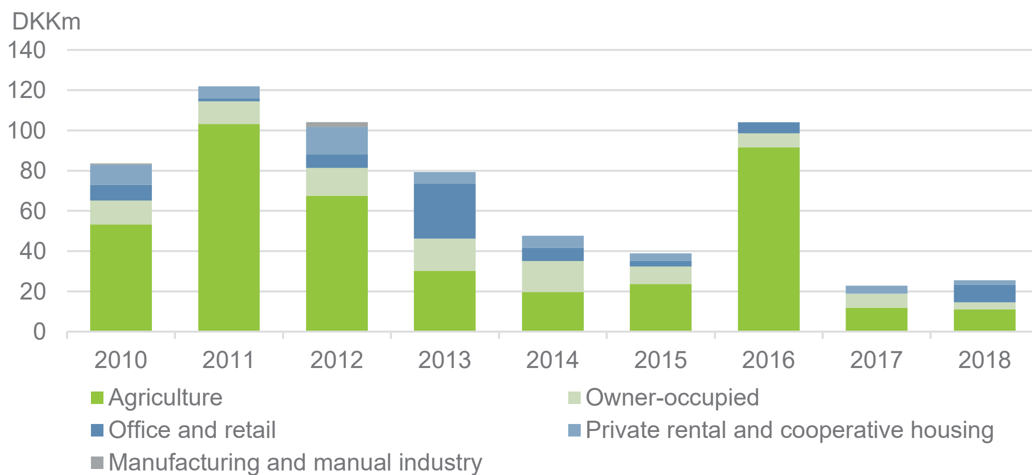
Figure 13 shows DLR's individual impairments by property segment. Impairment losses on loans to agricultural customers and for owner-occupied dwellings, including residential farms, accounted for 90% of individual impairments at end-2018.

Figure 13. Accumulated impairment provisions



For 2018, realised losses on loans calculated after payments under guarantee agreements but before offsetting losses, and including prior-year adjustments and recovered debts previously written off, amounted to DKK 22m, which is an increase over 2017, when realised losses were DKK 9m. Relative to the total loan portfolio, DLR's loss ratio was still very low at 0.01%.

Figure 14. Relised loan losses before loss offsetting



Note: The statement shows the losses incurred before loss offsetting and the offsetting of amounts received from claims previously written off

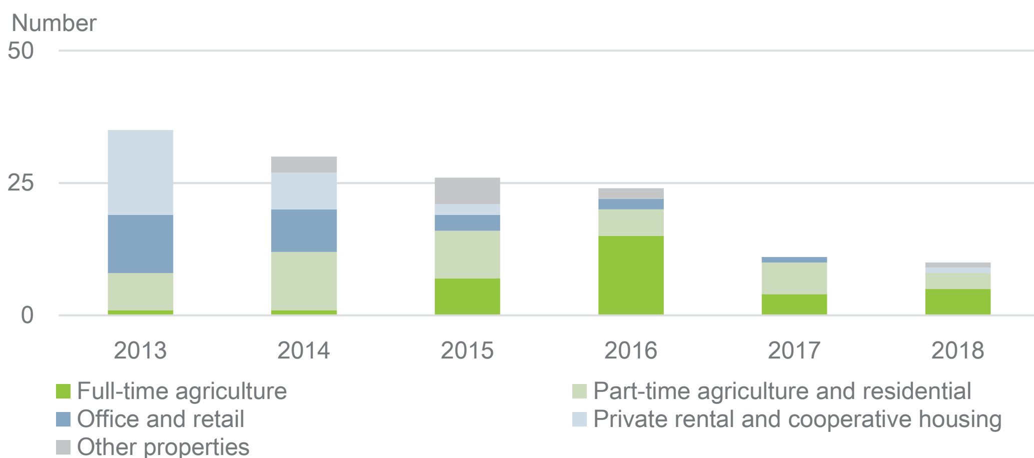
The agricultural segment accounted for 43% of realised losses in 2018, which was notably higher than in the preceding years. Losses were mainly attributable to

horticultural properties, part-time and hobby farms and crop farms. There were almost no losses attributable to pig farmers, while DLR was able to reverse cattle farmer exposures previously written off. A further DKK 4m loss was realised on owner-occupied dwellings, including residential farms, while losses stemming from office and retail property and private residential rental properties was DKK 9m and DKK 2m, respectively.

With respect to the previously described loss-offsetting schemes, DLR set off losses of about DKK 8m in 2018 against commissions paid to the banks, of which about one-fourth concerns prior-year losses.

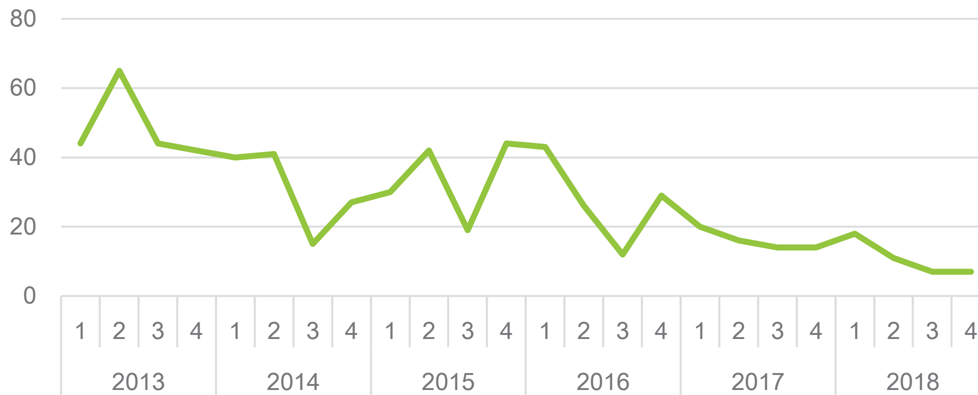
DLR's stock of repossessed properties at year-end 2018 totalled 10, two of which were pig farms (one operation) along with two cattle farms (one operation), while the remaining properties were residential farms, part-time farms and one small residential rental property and one undeveloped site.

Figure 15. DLR's stock of repossessed properties



The number of completed forced sales of property where DLR holds a mortgage was 43 in 2018, down from 64 in 2017. The number of forced sales fell steadily over the course of the year.

Figure 16. Forced sales of properties in which DLR holds a mortgage



4.10. Encumbered assets

DLR's business model is based on match-funded mortgage loans offered against mortgages on real property. DLR issues bonds to fund mortgage loans to its customers. The loans are recognised in DLR's balance sheet until maturity and are reserved to ensure timely payment to the bond investors if DLR should become distressed. The reservation of certain assets for creditors/investors is referred to as asset encumbrance, which is thus a natural part of DLR's business model.

Assets used to comply with requirements for supplementary collateral (LTV requirements) and "balancing funds" (i.e. prepaid funds from repayment, fixed-price agreements, etc.) are also considered to be encumbered as the bondholders have a preferential claim in case of a bankruptcy.

DLR's securities portfolio is financed primarily by DLR's equity. Only the parts of the securities portfolio relating to meeting requirements for supplementary collateral or balancing funds are encumbered. The remaining part of the securities portfolio is considered unencumbered and available in terms of DLR's LCR calculation.

DLR publishes asset encumbrance data in the Pillar III appendix.

5. MARKET AND LIQUIDITY RISK

Market risk is the risk that the value of financial instruments and derivative financial instruments fluctuate due to changes in market prices. DLR includes the following types of risk under the market risk area: interest rate risk, including credit spread risk, exchange rate risk, equity market risk and other price risks. DLR's interest rate risk comprises interest rate risk on all financial instruments, both on- and off-balance sheet, including lending and fixed-rate funding.

As DLR adheres to the specific balance principle, the market risk deriving from funding in mortgage (RO) and covered bonds (SDO) will reflect the terms and conditions of the mortgage debtors. The market risk DLR assumes should be viewed in relation to DLR's business model and is solely attributable to an investment need for DLR's own funds, proceeds from issued senior debt, senior secured bonds, additional tier 1 capital and tier 2 capital, etc., profits/earnings and prepaid funds.

DLR actively manages its interest rate risk. In addition to the statutory framework, DLR has determined a policy for investing its securities portfolio and specific limits for the extent and volatility of each type of risk.

Essentially, DLR's overall market risk should be low, which means that:

- Overall interest rate risk calculated in accordance with the *Executive Order on the Issue of Bonds, the Balance Principle and Risk Management* should lie within the 0-3% range of the own funds. The interest rate risk on DLR's trading book (securities portfolio/assets) should be in the 0-3% range of the own funds, and the securities portfolio should mainly consist of bonds with a remaining term to maturity of up to five years. Interest rate risk on issued debt instruments (liabilities) should be in the 0-3% range of the own funds.
- Exchange rate risk on DLR's assets, liabilities and off-balance sheet items must be at most 0.1% of the own funds as calculated according to exchange rate indicator 2. See the rules in the *Executive Order on the Issue of Bonds, the Balance Principle and Risk Management*.
- DLR does not assume equity market risk except in connection with policy/strategic positions deemed necessary for DLR's operations (for example, equities in sector-owned companies)

- Other price risks should be avoided. Hence, DLR does not wish to take positions in foreign currencies apart from EUR, or in equities, commodities, options or derivative financial instruments unless these positions are for risk hedging or liquidity management purposes
- DLR also aims to have a responsible leverage ratio in the markets area.

The stipulated risk levels are specified in the Board of Director's instructions to the Executive Board and in its delegated authorities.

Regular risk reports on the securities portfolio ensure DLR's management can track prevailing risk levels and decide on which measures to take, if appropriate.

5.1. Interest rate risk

Interest rate risk is defined as the amount of the loss caused by a positive or negative parallel shift in the interest rate structure of one percentage point, i.e. the value adjustments triggered by a change in the market rate of one percentage point. DLR's financial risk attaches particularly to the interest rate risk on the securities portfolio and the interest rate risk on issued debt instruments, which (typically) correlates negatively with the interest rate risk on the securities portfolio. Moreover, DLR is exposed to e.g. credit spread risk.

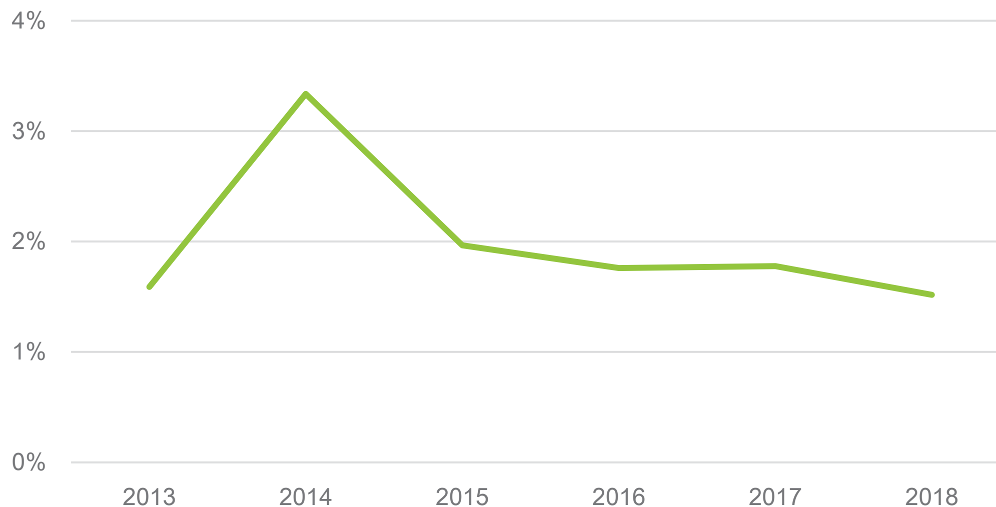
DLR has opted to maintain active management of its interest rate exposure using distinct thresholds in connection with its securities portfolio and issued debt instruments to keep the interest rate risk at a low level.

Legislation provides that DLR's interest rate risk may not exceed 8% of the own funds. With own funds of DKK 12,994m at year-end 2018, this equates to a maximum permitted interest rate risk of DKK 1,040m. However, DLR's Board of Directors has defined a more restrictive limit of 3% of own funds, corresponding to DKK 390m.

At the end of 2018, DLR's relative interest rate risk on its securities portfolio was 1.5%. See figure 17. This equates to a value adjustment of the securities portfolio of DKK 197m in case of a one percentage point change in the market interest rate. Moreover, the convexity impact on DLR's bond portfolio is DKK 3m. In this way,

DLR complies with the guidelines that the interest rate risk incl. the convexity impact must be within 3%.

Figure 17. Relative interest rate risk on DLR's securities portfolio



As mentioned above, the interest rate risk on issued debt instruments "correlates negatively" with the interest rate risk on the securities portfolio. The issued debt instruments represent a loan raised outside the specific balance principle in connection with lending activities. The interest rate risk on these debt instruments entails that DLR's total interest rate exposure is reduced to 1.2% of own funds, equal to DKK 151m at end-2018.

DLR holds a large portfolio of bonds. The portfolio mainly consists of AAA-rated Danish listed mortgage bonds (mortgage credit bonds/RO, covered bonds/SDO and mortgage covered bonds/SDRO), plus a small volume of government bonds.

At the end of 2018, 69% of the portfolio was invested in bonds with annual or even shorter rate-setting intervals, while only a limited share of the portfolio was invested in bonds with long maturities. In this way, DLR has reduced the risk of a normalisation of interest rates.

5.2. Credit spread risk

Credit spread risk is defined as the risk of price losses due to lower creditworthiness of a counterparty or on exposures to the institution itself. Lower counterparty

creditworthiness may occur due to higher risk of default, for example. The credit spread is calculated as the spread to a risk-free yield curve.

DLR's Board of Directors has determined a maximum credit spread risk for DLR of DKK 350m. At end-2018, the credit spread risk on DLR's bond portfolio was DKK 213m, net.

5.3. Exchange rate risk

Exchange rate risk is the risk of loss from fluctuations in foreign exchange rates. Due to the specific balance principle, DLR assumes no actual exchange rate risk.

Calculated according to the Danish FSA's exchange rate indicator 2, DLR's exchange rate risk was 0.004% of own funds at end-2018. Pursuant to the Executive Order on the Issuance of Bonds, the Balance Principle and Risk Management, the exchange rate risk calculated using the Danish FSA's exchange rate indicator 2 must not exceed 0.1% of own funds.

5.4. Equity market risk

DLR generally does not place funds in equities apart from "sector equities" primarily related to financial infrastructure.

At the end of 2018, DLR's equity holdings consisted solely of holdings in VP Securities A/S, e-nettet A/S and Landbrugets Finansieringsinstitut A/S. The total value of this share portfolio was DKK 51m at the end of December 2018.

DLR's holding of treasury shares amounts to 29.420.037 shares at a nominal price of DKK 1 each. DLR's holding of treasury shares is not included in the price adjustment item for equities.

In compliance with DLR's accounting policies, market-traded equities are measured at fair market value. Fair value is calculated as the closing price on the balance sheet date. Unlisted equities are also entered at fair value. If the fair value cannot be reliably estimated, these shares are set at cost, minus any deductions for write-downs.

Table 15. DLR's exposures in equities not included in the trading book

Type (DKKm)	Exposure, 31.12.2018	Operational impact in 2018
Sector equities	51	5
Other equities and capital shares	-	-
Total	51	5

5.5. Counterparty risk

To manage and mitigate DLR's risk of loss due to counterparties failing to meet their payment obligations to DLR, financial counterparties' ability to pay is regularly monitored pursuant to a policy and guidelines for DLR's exposure to banks, which are defined by DLR's Board of Directors.

DLR's risk of loss on financial counterparties is limited, as counterparty risk essentially comprises the borrower guarantees provided. These guarantees are secondary to the borrower's personal debt obligations and the mortgage on the property.

Moreover, other than a limited threshold of DKK 50m, DLR only places liquidity in banks which hold a minimum rating of BBB/A-2 by S&P, and the maximum duration for term deposits is 30 days. In Denmark, only four banks hold such a rating: Nordea, Danske Bank, Jyske Bank and Nykredit Bank.

Exposure calculations are regularly made for the individual banks to estimate DLR's financial counterparty risk, in accordance with the Board of Directors' guidelines.

5.6. Liquidity risk

The risk of loss due to current liquid assets being insufficient to cover current payment obligations is extremely limited for DLR. This is because DLR adheres to the specific balance principle whereby loan payments match the payments on issued bonds (match funding). Hence, there is a 1:1 correlation between the loan granted to the borrower and the bonds issued by DLR to fund the loan.

There are many advantages to this model, which ensures a funding match in terms of maturity, interest rate, currency and loan repayment. Hence, payments received by DLR from borrowers less an administration margin to DLR (risk and administration fee) perfectly match the amounts DLR has to pay bondholders. In general, the balance principle means DLR essentially only assumes a credit risk in connection with its lending activities.

DLR prepares an annual ILAAP report (*Internal Liquidity Adequacy Assessment Process*). The ILAAP is approved by DLR's Board of Directors prior to submission to the Danish FSA.

DLR's Board of Directors has determined that liquid funds must be placed in financial institutions that are subject to Danish law. The maximum deposit at any one bank may be 25% of DLR's own funds in accordance with Article 395 of the Capital Requirements Regulation (CRR), though deposits must not exceed 35% of the bank's own funds.

LCR (liquidity coverage ratio)

The LCR requirement is defined in a delegated act (the LCR Delegated Act), which was issued in accordance with CRR. According to LCR, the proportion of high quality liquid assets (HQLA) shall at all times exceed the net liquidity outflow for the next 30 days.

Like other Danish mortgage credit institutions, DLR is authorised to exempt certain mortgage bond-related cash flows from its LCR calculation. In order to apply the exemption, DLR must meet an LCR floor requirement such that DLR holds at all times liquid assets equivalent to 2.5% of its total mortgage loan portfolio. The floor requirement can be met without taking into consideration that level 1B covered bonds may at most account for 70% of the liquid assets.

At the end of 2018, DLR had an LCR without the floor requirement of 175% and an LCR with the floor requirement of 229%. DLR publishes quarterly data for LCR in the Pillar III appendix (cf. ”Pillar III disclosures requirements Q4 2018”).

NSFR

In November 2016, the EU Commission presented a first proposal for an NSFR (Net Stable Funding Ratio) requirement as part of the CRDV/CRR-2 package. In

early December 2018, agreement was reached on the general content of the CRDV/CRR2 package in the tripartite negotiations between the Council of Ministers, the European Parliament and the EU Commission. However, as the legislative wording has yet to be finalised, no date has yet been set for the coming into force of the NSFR.

NSFR requires that so-called available stable funding (1Y horizon) must be equal to or higher than the required stable funding. Available Stable Funding ("ASF") is calculated on the basis of an institution's liabilities. The shorter the term to maturity of a liability, the less ASF value it is considered to contribute. Required Stable Funding ("ASF") is calculated on the basis of an institution's assets. The more liquid an asset, the less stable funding an institute is required to procure to fund it and the lower the RSF factor.

The NSFR requirement includes a possible exception for mutually dependent assets and liabilities that meet a number of specific conditions, including having the same maturity, such as, say, Danish mortgage loans and underlying mortgage bonds with the same maturity. This implies that mortgage bonds and mortgage loans are accorded an ASF factor and an RSF factor, respectively, of 0%, and in practice that exempts mortgage loans and issued mortgage bonds from an NSFR calculation. In addition, NSFR recognises Danish refinancing legislation, to the effect that exemption also applies to short-term mortgage bonds used to fund longer-term loans.

6. IT RISK AND OPERATIONAL RISK, ETC.

6.1. IT and cyber security risk

DLR's business is heavily dependent on IT systems, including both DLR's own IT systems and interfaces with other external systems, such as the electronic land registry, VP Securities (securities registration and administration) and bank payment systems.

DLR's IT strategy

The Executive Board determines DLR's IT strategy, which is approved at least once a year by the Board of Directors. DLR's business model assumes that necessary adjustments can be regularly made to DLR's IT systems.

DLR's IT strategy is based on the use of modern and proven technology. DLR develops strategic systems for mortgage lending in-house, while peripheral systems are based on acquired standard systems running on a Windows-based platform.

IT risk

DLR draws up an annual risk assessment identifying and calculating a number of IT risks. A number of protective measures have been established, partly concerning operational disruptions, partly disaster situations.

Operational disruptions are addressed through preventative measures, including procedures for quality assurance, change management and document maintenance together with fault management and procedures for damage repair, switch-over, etc. Furthermore, DLR has twin operational centres so that a serious incident at the one centre of operations does not have a knock-on effect on the other.

Disaster situations caused by fire or water damage, for example, are mainly sought to be avoided through well-planned physical safety measures and the surveillance of DLR's buildings, technical installations and equipment.

Disasters caused by digital incidents are sought to be avoided through system and data protection via access controls, virus protection, the monitoring of network traffic and other control procedures related to user ID and user behaviour.

DLR has also prepared contingency plans and procedures for emergency situations that comprise damage-limitation measures, work-arounds and the re-establishment of permanent solutions.

Hence, contingency plans are in place should DLR’s IT systems experience a serious incident that results in the digital systems being unavailable for shorter or longer periods of time. The goal of DLR’s contingency planning is that key business functions can be re-established and run from alternative centres of operations within 48 hours of deciding to put the IT contingency plan into action. Business contingency plans have also been established.

Overall, DLR’s IT security and contingency plans contribute to a level of risk for DLR’s business applications of IT that may be characterised as low, while the risk of loss due to IT risk may be estimated as very limited.

Cyber security threats

Cyber security threats are the risk of cyber attacks in which a person uses IT equipment to cause disruptions or obtain unauthorised access to data, systems, digital networks or digital services. The Danish Centre for Cyber Security assesses the threat from cyber crime against the Danish financial sector to be very high. Although DLR has registered no specific incidents with an impact on accessibility of IT systems or data confidentiality, DLR generally believes that cyber attacks must be considered likely for DLR and a risk that should be given proper attention and regularly mitigated.

Outsourcing

DLR uses outsourcing in connection with IT operations. Outsourcing is closely supervised in accordance with the Danish FSA’s executive order on this, while separate guidelines have also been established for outsourcing. Hence, risk is assessed to be limited here.

6.2. Operational risk

Operational risk is an umbrella term for a wide range of risks that may cause a loss for DLR. Losses may be incurred due to breakdown of IT systems, human

errors, legal complications, failures, fraud, accidents and disasters, etc.; in other words, non-financial incidents.

DLR's Board of Directors has therefore determined policies and guidelines for operational risk along with insurance coverage with the aim of reducing DLR's risk as much as possible.

IT constitutes a key operational risk area. DLR's management therefore regularly addresses IT security, including contingency and emergency plans, etc.

DLR constantly strives to minimise operational risk by, for example, establishing control procedures, authorisations, emergency procedures, back-ups, business procedures, automatic updates, contingency plans, etc. DLR's Compliance function also helps minimise operational risk. Moreover, process descriptions have been produced in relevant areas to provide instructions for procedures and to define an area's allocated responsibilities. These measures help ensure DLR complies with both external and internal requirements.

As DLR is considered a relatively "simple" business with few products and business areas, DLR's operational risk is estimated to be limited overall.

DLR calculates its capital requirement with respect to operational risk using the basic indicator method. The risk exposure in connection with operational risks has been calculated at approximately DKK 2.4bn, equal to an 8% capital requirement of DKK 193m at 31 December 2018.

DLR has established business procedures concerning regular follow-up and handling of operational incidents. All operational incidents that have or could have entailed costs exceeding a pre-defined limit are reported to DLR's Executive Board and the Risk Monitor, and DLR's Risk Committee is informed hereof. Any major losses are reported to DLR's Board of Directors at the next meeting. Overall, DLR experiences a relatively low number of operational incidents taking into account the number of cases handled each year.

6.3. Insurance risk

Another focus area terms of managing operational risk, etc. is the options for insuring DLR against events that might threaten the company's independence in

connection with claims, actual damage, or actions or omissions that could be liable to compensation.

DLR prefers to assume responsibility for minor loss risks itself. Minor loss risks are risks where the insurance premium and administration costs are assumed not to be commensurate with the potential loss.

6.4. Property risk

DLR's portfolio of land, buildings and domicile properties (excluding temporarily held properties) is modest relative to DLR's equity and balance sheet. DLR prefers not to assume any significant property risk.

The value of properties, which solely comprise DLR's domicile property in Copenhagen, was DKK 120m at the end of 2018, equivalent to 0.9% of DLR's equity.