



# Risk and Capital Management 2017

Pillar III risk report of Landsbankinn hf.  
31.12.2017

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## **Landsbankinn hf. in brief**

*Landsbankinn hf. was founded on 7 October 2008 by the Ministry of Finance on behalf of the Icelandic State Treasury. The Bank is a limited liability company incorporated and domiciled in Iceland. The Bank is licensed as a commercial bank and operates in accordance with Act No. 161/2002, on Financial Undertakings. Landsbankinn is subject to supervision by the Financial Supervisory Authority of Iceland (FME) in accordance with Act No. 87/1998, on Official Supervision of Financial Activities.*

*Landsbankinn hf. is a leading Icelandic financial institution. The Group offers a full range of financial services and is the market leader in the Icelandic financial service sector with the largest branch network. Focused on commercial banking, Landsbankinn provides retail and corporate banking services, capital markets services and asset and wealth management for private banking clients.*

*The National Treasury of Iceland holds 98.2% of shares in the Bank. Other shareholders own 1.8% of shares in the Bank.*

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The disclosures have been put together to explain the basis of preparation and disclosure of certain capital requirements and provide information about the management of certain risks and for no other purposes. They do not constitute any form of audited financial statement. They should not be relied upon in making judgements about the Group. The disclosures will only be subject to external verification to the extent that they are equivalent to those made under accounting requirements.

This publication, Risk and Capital Management 2017, has not been audited by external auditors. However, it has been appropriately verified internally and includes information from the audited Consolidated Financial Statements 2017. There may be some discrepancy between this report and financial information in the Consolidated Financial Statements 2017 as the report has been prepared for the purpose of Article 18 of the Act No. 161/2002 on Financial Undertakings, cf. Article 11 of Act No. 96/2016, and the provisions in CRD IV and CRR incorporating the Basel Pillar III disclosure requirements, rather than in accordance with IFRS.

Additional Pillar III disclosures under the European Banking Authority disclosure requirements (Part Eight of regulation (EU) no. 575/2013) are included in an excel sheet which can be downloaded from the Bank's website, [www.landsbankinn.is](http://www.landsbankinn.is)

# 1 Highlights of 2017 and outlook

Landsbankinn's overall risk position increased moderately in 2017, as measured by risk exposure amount (REA) to total assets, despite robust growth in the loan book. The Bank's risk appetite was set to maintain a level risk position for the coming year.

Going forward regulatory requirements and special taxation on banks may result in terms that incentivise some customers to shift their borrowing to a less regulatory burdened non-bank financial institutions e.g. pension funds, mutual funds and insurance companies. Funding direct lending may then divert these same institutions away from investing in traditional debt securities, including those issued by banks, increasing banks' funding costs. This then again would reduce banks' competitiveness in lending to individuals and corporations.

## Capital position

The Bank's capital position remained strong in 2017 with a year-end capital position of 26.7%, well above the regulatory minimum requirement of 21.4% set by the Financial Supervisory Authority of Iceland (FME) through the Supervisory Review and Evaluation Process (SREP). The Bank's capital target is to be 1.5 – 2.5% above the FME requirements and in the highest category for S&P's RAC ratio. Both capital targets were met in the year 2017.

The Bank's capital base decreased by ISK 5.6 billion between 2016 and 2017. The reduction was mainly due to dividend payments made by the Bank during the year in the amount of ISK 24.8 billion. The Bank measures internal capital requirements by economic capital for all material risks with

regards to risk exposure amount. The internal assessment of economic capital remained relatively unchanged resulting in ISK 99 billion at year-end 2017, but the ratio to REA declined by 1.1 percentage points.

Minimum capital requirements set by Icelandic regulators are high by international standards, e.g. the minimum requirement for the Bank set by the FME is higher than several Nordic peers total capital ratios. The FME has adopted some of the additional capital requirements recently introduced as part of the revised Basel III framework into their SREP guidelines, which will further raise Pillar II capital requirements. By early adoption the FME reduces both the phase-in period of the revised Basel III framework, which is to come into effect in 2022, and the consultation process which is inevitably part of revising the



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Capital Requirements Regulation. Changing capital requirements for banks' existing loan books can additionally affect the banks' profitability in the near term, as the standards apply to loans that were issued and priced according to less stringent requirements. Operating in such an uncertain regulatory environment can put a strain on the Bank's business planning, competitiveness and profitability going forward. Additionally it may have negative effects on the terms that the Bank can offer its customers.

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### Credit risk

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There was a notable growth in the Bank's loan book in the year 2017, amounting to ISK 72 billion or 8.5% compared to end of year 2016. Lending to households and individuals grew by 10%, mainly due to increase in CPI linked mortgages.

There is increased competition in the mortgage market where local pension funds are gaining foothold. The pension funds are under significantly less regulatory requirements and operational

burden w.r.t. risk management, data quality and reporting and are hence able to offer lower cost of borrowing than banks, albeit with a lower LTV ratio. This may incentivise bank customers with lower loan to value to refinance their mortgages potentially increasing the likelihood of equity withdrawal based on the recent steep price increase in the Icelandic housing market.

With an 8.5% growth in the loan book, economic capital for credit risk increased from 2016 by ISK 5.6 billion. Credit risk measured by PD levels remained stable at 2.3%, in line with risk appetite. LGD measurements also remained constant at 34.8%, in line with risk appetite. Loans 90 days past due also decreased significantly to 0.9% of the loan portfolio, a decrease of 0.6 ppt. Customer migration between rating grades and early warning classification was positive thus reflecting a stronger financial position of the Bank's borrowers. The loan portfolio concentration remained in three main areas, residential mortgages, construction and real estate sector and fishing sector, with the former two sectors increasing in signifi-

cance for the bank. The majority of the Bank's collateral is now residential and commercial real estate.

The Bank is implementing IFRS 9 which replaces IAS 39 in 2018. For this purpose, the Bank has developed and tested new impairment models and methods that were refined in 2017, minimizing variations to impairment calculations over the course of the year. The models have now been approved by the Board of Directors and will be implemented in Q1 2018. The effect of IFRS 9 implementation is presented in note 92.42 to the annual accounts.

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### Market risk

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Market risk measured by economic capital remained well within risk appetite at year end 2017 at 1.9% to REA. Indexation imbalance remained high during the year due to demand for CPI linked mortgages and loans by real estate companies. This imbalance is monitored closely and mitigation opportunities reviewed in line with the Bank's business plan and current market

environment. However, options for hedging this risk remain limited due to legislation on indexed savings, a very narrow swap market and increase of direct lending in CPI linked loans from pension funds, decreasing their appetite for index linked bonds.

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### Liquidity risk and funding

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Liquidity risk is one of the Bank's main risks and significant focus has been on the liquidity position in recent years. LCR at year-end was 157%, well above regulatory limits and the Bank's risk appetite. Medium to long term liquidity risk, measured by the NSFR in FX, was 179% at year-end well above regulatory requirements of 100%.

The Bank is an active issuer in the domestic bond market, issuing covered bonds for 41 billion ISK and commercial paper for 4 billion ISK in 2017. Demand for debt securities in ISK was significantly higher than expected in 2017. However, the Icelandic debt securities market remains small both in terms of number of inves-

tors and issuers. Pension funds are increasing their own portfolio of loans to individuals and corporates directly and in turn have less appetite for domestically issued debt securities from other parties including covered bonds from banks. Capital flow measures that among other require a special reserve requirement on new foreign capital inflow, hamper entrance of new investors into the debt securities market. If credit demand from the domestic market remains as strong as in 2017 there could be increased price pressure upwards in the domestic bond market. In that respect, the Bank will continue to focus on sound liquidity management in 2018 by managing lending growth and debt issuance.

In October 2017 the international rating agency Standard & Poor's (S&P) upgraded Landsbankinn's long- and short-term credit ratings from BBB/A-2 to BBB+/A-2 with a stable outlook. The Bank's EMTN bond issuance in foreign currency has now reached ISK 191 billion after an increase of 73 billion in 2017.

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### Operational risk

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IT risk and security is of great importance to the Bank. For that purpose, the Bank has for the last few years maintained the ISO 27001 certification on information security and is assessed annually by a third party for adherence to the standards. This certification becomes increasingly important when legislation of GDPR and PSD II comes to effect.

IT risk was prominent in the Bank's operations in 2017 when the Bank, in cooperation with the joint central clearing house (Reiknistofa Bankanna, "RB") replaced the core banking system for deposits and payments in November. This undertaking is the first replacement of a core banking system in real time payments in the world. The go-live weekend went well and most of the Bank's clients did not experience notable disruption in service. However, as was expected, some issues have surfaced and the Bank has been working on solving those issues in close cooperation with RB.

As the banking sector becomes more digitalized so does financial crime. After the release of capital controls, the Bank has seen an increase in internet related fraud and cybercrime. For the last six years the bank has built up an internal cyber response team to protect the bank and its customers. The Bank also uses external resources to assist with the estimation and protection of cybercrime, most recently joining the Nordic Financial CERT.

Weaknesses in processes or systems continue to count for most of the Bank's operational incidents in 2017. Risk Management is now tracking incidents through a centralized platform and registering a loss incident database for improved management of operational risk in the Bank.

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## Economic outlook

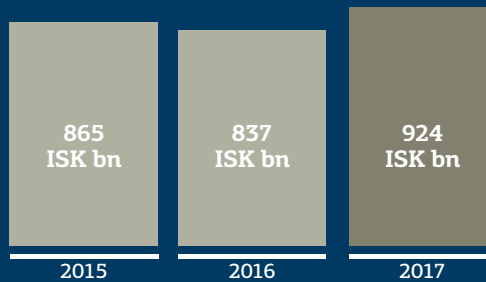
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Economic conditions in Iceland have been favourable in recent years, with uninterrupted economic growth since 2011 and inflation remaining consistently below the Central Bank's inflation target since February 2014. The purchasing power of wages has never been as high, unemployment levels are low and household and corporate debt has decreased significantly in the past few years. The net foreign debt of the National Treasury has seldom been as low. Economic recovery in Iceland's main trading partners continues and inflation is trending towards target in many of these countries. Global economic and political uncertainty nevertheless remains considerable, with increased tension in the Korean peninsula, Brexit looming and the independence campaign in Catalonia.

Landsbankinn Economic Research expects continued robust economic growth in Iceland throughout the forecast period of 2017-2020, despite indications that the economic upswing is close to a peak. According to the forecast, economic growth is expected to be 5.5% in 2017, 4.5% in 2018 and decrease to 3.6% in 2019 and 2.5% in 2020. Inflation will gradually increase towards the Central Bank's inflation target around the middle of 2018, with rising real estate and import prices pushing inflation over target around mid-2019. Inflation is expected to be slightly over target on average during the latter half of the forecast period yet to trend back to target towards the end of the period. According to the inflation forecast, inflation will average 2.7% during the period 2017-2020.

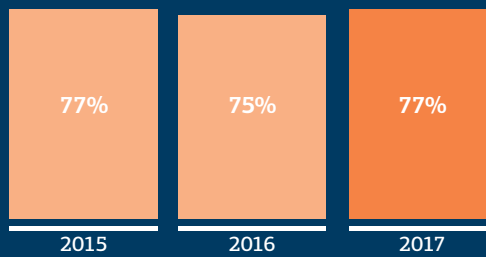
# Risk in review

Risk exposure  
amount



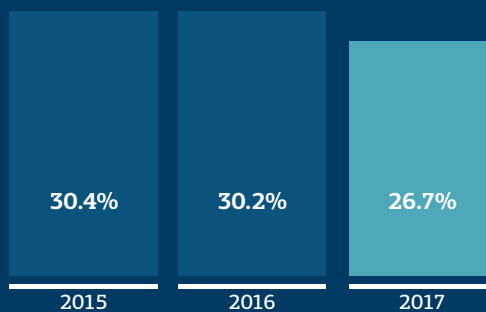
**924**  
**ISK bn**

REA to total  
assets



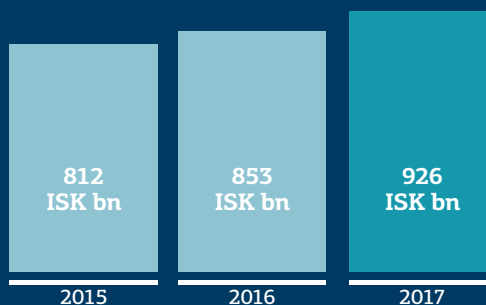
**77%**

Total capital ratio



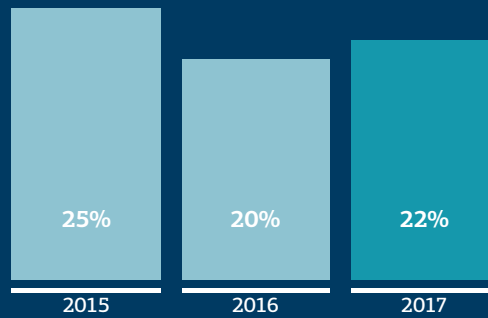
**26.7%**

Loans and  
advances  
to customers



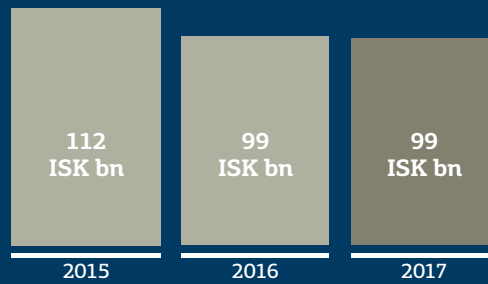
**926**  
**ISK bn**

Large  
exposures  
to eligible  
capital



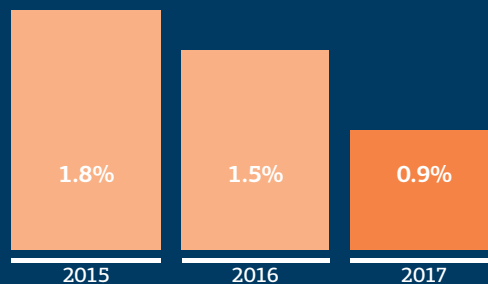
**22%**

Economic  
Capital



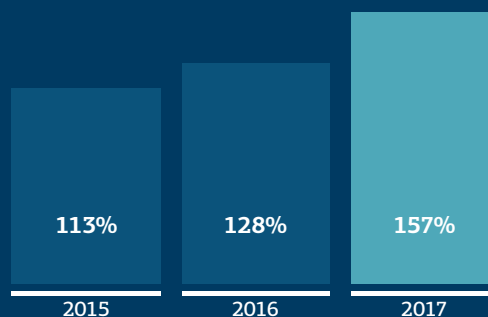
**99  
ISK bn**

90 days  
past due loans



**0.9%**

Liquidity  
coverage  
ratio total



**157%**



# 2 Risk management

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# Risk Management

Risk is inherent in the Group's activities and is managed through a process of on-going identification, measurement, management and monitoring, subject to risk limits and other controls. Risk identification involves finding the origins and structures of possible risk factors in the Group's operations and undertakings. Risk measurement entails measuring the identified risks for management and monitoring purposes. Finally, risk controls and limits promote compliance with rules and procedures, as well as adherence with the Group's risk appetite.

The objective of the Group's risk policies and procedures is to ensure that the risks in its operations are detected, measured, monitored and effectively managed. Exposure to risk is managed to endeavour that it will remain within limits and the risk appetite adopted by the

Group will comply with regulatory requirements. In order to limit and manage fluctuations which might affect the Group's equity as well as performance, the Group has adopted policies regarding the risk structure of its asset portfolio which are covered in more detail under each risk type.

Risk policy is implemented through the risk appetite, goal setting, business strategy, internal policies and limits that comply with the regulatory framework of the financial markets.

## 2.1 Risk appetite

The Group's risk appetite is defined as the level and nature of risk that the Bank is willing to take in order to pursue its articulated strategy, and is defined by constraints reflecting the views

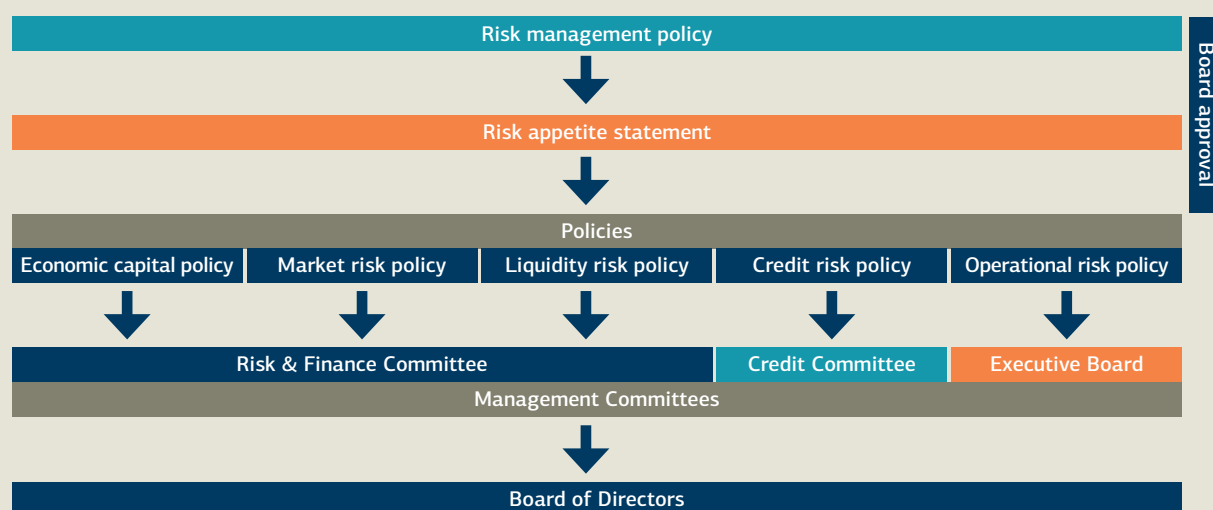
of the Board of Directors and the Bank's CEO and Executive Board.

The Group's risk appetite has been reviewed, revised and implemented for 2018. The Group's risk policy is as follows:

The Group provides universal financial services to customers. For this purpose, the Bank has objectives regarding financial position, asset quality, exposures and a sustainable long-term profitability. In the pursuit of its goals, the Bank only takes on risks that it understands, is able to measure and manage. The Bank aims to be comparable to leading banks in the Nordic countries in similar fields.

The Bank seeks to maintain solid business relationships, having regard for its own position as well as that of customers at each time and with due regard for any internal connections between custom-

Figure 2-1



Principal risk	Personal Banking	Corporate Banking	Markets	Treasury
Credit risk	High	High	Low	Low
Operational risk	Medium	Medium	High	Medium
Market risk	Low	Low	Medium	High
Liquidity risk	n/a	n/a	n/a	High

Table 2-1

ers. The Bank pursues long-term business relationships and aims to avoid being linked to transactions that might damage its reputation.

The Bank seeks to ensure diversified and sound financing and a sustainable risk profile. The Bank has set internal limits that provide for a strong capital and liquidity position which, along with active risk management, support long-term profitability and strong standing. In this manner, the Bank aims to minimise fluctuations in its operations and is well positioned to withstand stress.

The Bank's corporate culture is characterised by professionalism and processes that support a high level of risk management. Managers are responsible for monitoring and managing risk within their units. Decisions are based on a thorough and professional discussion of major advantages having the long-term interests of the Bank and its customers in mind. Efficient follow-up on decisions

and risk monitoring are integral to the Bank's operations.

## 2.2 Risk identification

The Group is exposed to the following material risks which arise from financial instruments:

- » Credit risk
- » Market risk
  - Currency risk
  - Interest rate risk
  - Other market risk
- » Liquidity risk
- » Operational risk

Table 2-1 provides a link between the Group's business units and the principal risks that they are exposed to. The significance of risk is assessed within the context of the Group as a whole and is measured based on allocation of economic capital (EC) within the Group.

The Group also manages other relevant risks, such as concentra-

tion, business, legal and compliance risk.

## 2.3 Risk management structure

The Group aims to meet best practice international standards and recommendations for banks' risk management in order to support its business model. The Group devotes substantial resources to developing and maintaining procedures and tools to fulfil this.

The Group's risk management is based on guidelines, policies and instructions approved by the Board of Directors. The Group has prepared specific instructions on risk management for individual business units based on the general policies set by the Board of Directors. At the unit level, these instructions are used, among other things, as the basis for business and control procedures.



### 2.3.1 Risk committees

The Group's risk management governance structure at year-end 2017 is shown in tables 2-2 and 2-3.

Good organisation of the Board's work is important for the operation of the Group and the Directors' work. The establishment of sub-committees is designed to facilitate discussion and deeper analysis of issues for the Board's attention and its efficacy.

The Board assesses the need to establish sub-committees according to legal requirements and the size and scope of the Group at each time, as well as the composition of the Board. The Group's corporate governance statement provides information on the establishment and appointment of sub-committees. There are currently four sub-committees of the Board of Directors. Their role is to prepare discussion for the Board of specific areas of operation and obtain a deeper insight in matters related to their scope of activity.

The Audit Committee shall endeavour to ensure the quality of the Group's financial statements and other financial information, as well as the independence of its auditors. The Committee's function is, among other things, to supervise accounting procedures. The Committee also monitors the organisation and function of internal auditing. Moreover, the Committee supervises auditing of the Group's financial and consolidated statements and assesses the independence of the Group's external auditors. It also supervises other tasks performed by external auditors and submits proposals to the Board of Directors for the selection of external auditors.

The Risk Committee monitors the organisation and effectiveness of the Bank's risk management structure and compliance. The Committee monitors the management of credit, market, operational and other types of risks as and where applicable.

The Remuneration Committee guides the Board of Directors and the CEO on the terms of employment with respect to the salaries of key management and remuneration policy. The Committee ensures that remuneration to key management is within the policy's framework and reports annually to the Board of Directors. According to the Act on the Senior Civil Servant's Board, No. 47/2006,

#### Board of Directors

Table 2-2

#### Supervision by the Board of Directors and its sub-committees

Audit Committee
Remuneration Committee
Risk Committee
Strategic Development Committee

#### Key risk management bodies and committees

Table 2-3

Committee	Chair	Other members
Executive Board	CEO	Managing Directors
Risk & Finance Committee	CEO	CFO, CRO, Head of Legal Department
Credit Committee	CEO	CRO, MD of Corporate Banking, MD of Personal Banking
Operational Risk Committee	CRO	MD of Personal Banking, MD of IT, Compliance Officer, Senior Director of Operation, Director of Operational Risk

the Senior Civil Servant's Salary Board determines remuneration to the Bank's CEO. On 1 July 2017, a new Act No. 130/2016 entered into force which stipulates that the Board of Directors determines remuneration to the Bank's CEO. For further details on the Group's remuneration policy, see Section 9.1 of Landsbankinn's 2017 Remuneration Report.

The Strategic Development Committee prepares the Board of Directors for discussion and decisions on the future vision and strategy of the Group. The Strategic Development Committee monitors changes in the Group's operating environment and deliberates on the Group's position and business plan with regard for strategic development. The Committee is also tasked with prioritising objectives in relation to the Group's strategy.

The Board of Directors has overall responsibility for the establishment and oversight of the risk management framework and risk appetite and risk limit setting. The CEO is responsible for the effective

implementation of the framework and risk appetite through the corporate governance structure and committees. The CEO has established and is a member of the Executive Board, the Risk & Finance Committee and the Credit Committee.

The Credit Committee deals with credit risk – individual credit decisions, credit limits on customers and credit risk policy – while the Risk & Finance Committee covers primarily market risk, liquidity risk and legal risk. The Risk & Finance Committee monitors the Group's overall risk position, is responsible for enforcing the Group's risk appetite and risk limits, and reviews and approves changes to risk models before presented to the Board of Directors. The Executive Board serves as a forum for consultation and communication between the CEO and the managing directors, addressing the main current issues in each division and makes decisions on operating matters not being considered in other standing committees. The Operational Risk Committee is a forum for discussion

and decisions on operational risk issues and review of the effective implementation of the operational risk framework.

Governance pertaining to specific risks is discussed in the relevant chapters.

### 2.3.2 Risk Management Division

The Bank's Risk Management Division is responsible for the Bank's risk management framework. Subsidiaries of the Bank have their own risk management functions and the Risk Management Division receives information on exposures from the subsidiaries and collates them into Group exposures. The Risk Management Division is also responsible for comprehensive risk reporting on risk positions to various internal departments and committees and supervisory authorities.

The Risk Management Division was at end-year comprised of four departments.

Figure 2-2



» The Credit Management Department reviews credit decisions made by the Bank's business units when credit applications exceed the business units' limits. The Department has veto rights on those credit applications. Confirmation by Credit Management implies that Credit Management has reviewed the credit application and does not exercise its veto rights. Credit applications exceeding the confirmation limits of the Risk Management Division are referred to the Bank's Credit Committee.

» The Credit Risk & Economic Capital Department is responsible for providing the Bank with internal models on credit risk and credit monitoring systems, as well as related processes, to measure and monitor credit risk and economic capital. The Department also supports the implementation of such models and processes within the Bank. In addition, the Department is responsible for credit risk, economic capital and impairment analysis and reporting within the Bank.

» The Market Risk Department is responsible for measuring, monitoring and reporting on market risk, liquidity risk and interest rate risk in the Group's banking book. The Department develops and maintains the Bank's market risk models and maintains the Group's Market Risk Policy and Liquidity Risk Policy, as well as implementing processes to measure and monitor market risk and liquidity risk within the Group. Market Risk is also responsible for monitoring all derivatives trading the Bank enters into, both for hedging and trading purposes, as well as FX balance monitoring for the Group.

» The Operational Risk Department is responsible for ensuring that the Group's operational risks are monitored and that the Bank implements and maintains an effective operational risk management framework. The Department assists the Bank's managers with operational risk assessment incidents related to normal operations and operational loss incidents analysis, and oversees business continuity plans. The Department is partly responsible for the

security system of the online bank. The Operational Risk Department leads the work on the Group's certification under the ISO 27001 standard for information security.

### 2.3.3 Compliance

The Compliance function monitors, advises and handles instruction on Landsbankinn's actions to combat money laundering and terrorist financing, and specific aspects of the implementation of laws on securities trading, including measures to minimise conflict of interest. Compliance also implements work procedures to control, monitor and assess compliance risk in the Bank's operation. Compliance is one of the Group's support functions.

### 2.3.4 Internal Audit

The Group's Internal Audit function is an independent, objective assurance and consulting activity designed to add value and improve the Group's operations. The Board has oversight of Internal Audit and appoints the Chief Internal Auditor. The function helps the Group to evaluate and improve the effectiveness of its risk management, controls, and governance processes. Internal Audit determines whether the risk management framework, control, and

governance processes as designed and represented by management are adequate and functioning, and thus supports the Group in accomplishing its objectives.

## 2.4 Risk measurement

The Group regularly monitors and assesses its current risk profile in important business areas and for important risk types. It also constantly seeks to improve the process for setting its risk appetite

in order to supplement the risk management framework and to support the business model.

The risk appetite framework considers key risks relevant to the Group's business activities and sets risk appetite targets and limits. On an aggregate level, the risk appetite is represented in terms of credit risk, market risk, liquidity risk, operational risk and funding risk. Each target or limit varies in detail, as well as which metrics are used, depending on their properties. They promote the Group to

manage risk in an efficient manner. In addition the Group measures and monitors other key risk indicators which address process risk as well as additional credit, market, operational and funding risk.

Economic capital (EC) is a key element in the management of the Group's risk and capital structure, as well as in the day-to-day financial management. EC is the estimated capital required to cover the Group's unexpected loss one year into the future. One of the benefits of EC is that it presents an aggregate figure for all risk types, products and business units. It thus produces a unified risk measurement expressed as a single unit of value, and the capital will at any time reflect the Group's risk for the next year. Further details on EC are provided in section 3.5.

### Overview of the main risk appetite measures

Table 2-4

Risk	Metric
Credit risk	Expected loss
	Probability of default
	Loss given default
	Industry concentration
	Single name concentration
Market risk	Equities
	Fixed income
	Currency
	Interest rate risk and inflation risk in the banking book
Liquidity risk	Liquidity coverage ratio-Total
	Liquidity coverage ratio-FX
Operational risk	Change in REA
Funding risk	Net stable funding ratio
	Economic capital
	Equity position

## 2.5 Risk monitoring

The Group allocates considerable resources to ensure on-going adherence with approved risk limits and for risk monitoring. It has set guidelines for reporting to relevant management bodies, including the Board of Directors, the Risk Committee, the Risk & Finance Committee and the Executive Board on developments in risk measures and risk appetite.

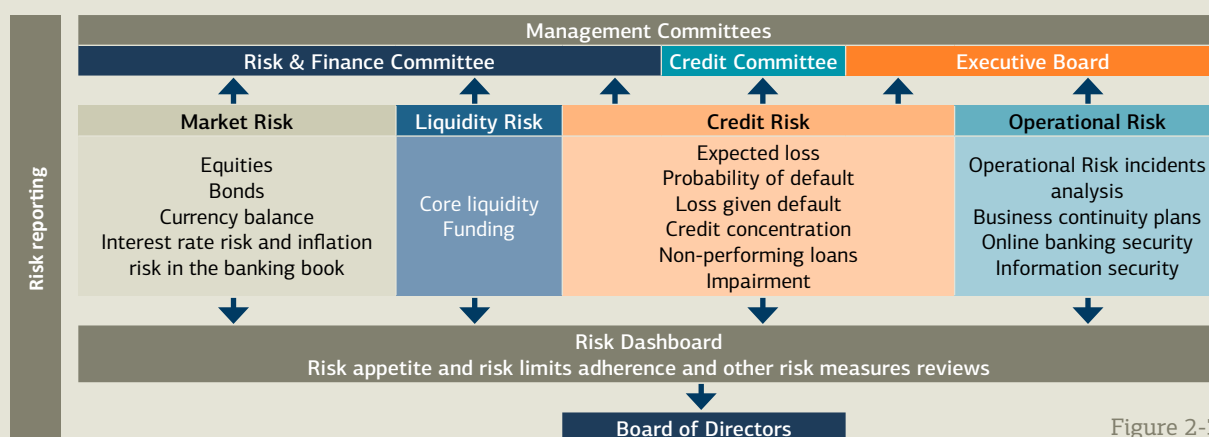


Figure 2-3

The Board of Directors receives thorough risk reports six times a year for different risk types as well as a monthly risk overview. Risk-related material is also reported through an integrated monthly management report to the Board of Directors. The Risk & Finance Committee and the Ex-

ecutive Board receive a monthly risk report or more frequently if required. Furthermore, the Group has implemented an internal on-line risk dashboard for executive managers where up-to-date risk material is available. The Board is actively involved in the process of generating an expanded ICAAP

report, which is submitted to the Board for approval once a year. The ICAAP report is then subject to the FME's Supervisory Review and Evaluation Process (SREP). Finally, a detailed EC report is submitted to the Board of Directors once a year.

## Principal reporting to the Board of Directors

Table 2-5

### Annual

#### Risk and Capital Management report

Pillar III disclosures

#### ICAAP report

Evaluation of the risk profile and solvency need. The report contains conclusions drawn from stress testing, including the effect of various scenarios on expected losses and capital needs

#### Economic capital report

Thorough analysis of EC developments and EC breakdown by risk types and business units as well as REA and other related aspects

### Bi-annual

#### Credit risk report

Thorough risk report summarising the Group's credit risk exposures and any concerns regarding credit risk

#### Market & liquidity risk report

Thorough risk report summarising the Group's liquidity risk and market risk exposures and any concerns regarding liquidity and/or market risk

#### Operational risk report

Thorough risk report providing analysis of operational risk aspects

### Monthly

#### Risk report

An aggregate report containing information on the Group's risk appetite and material from the credit, market, liquidity and operational risk reports. The report is interactive and available electronically

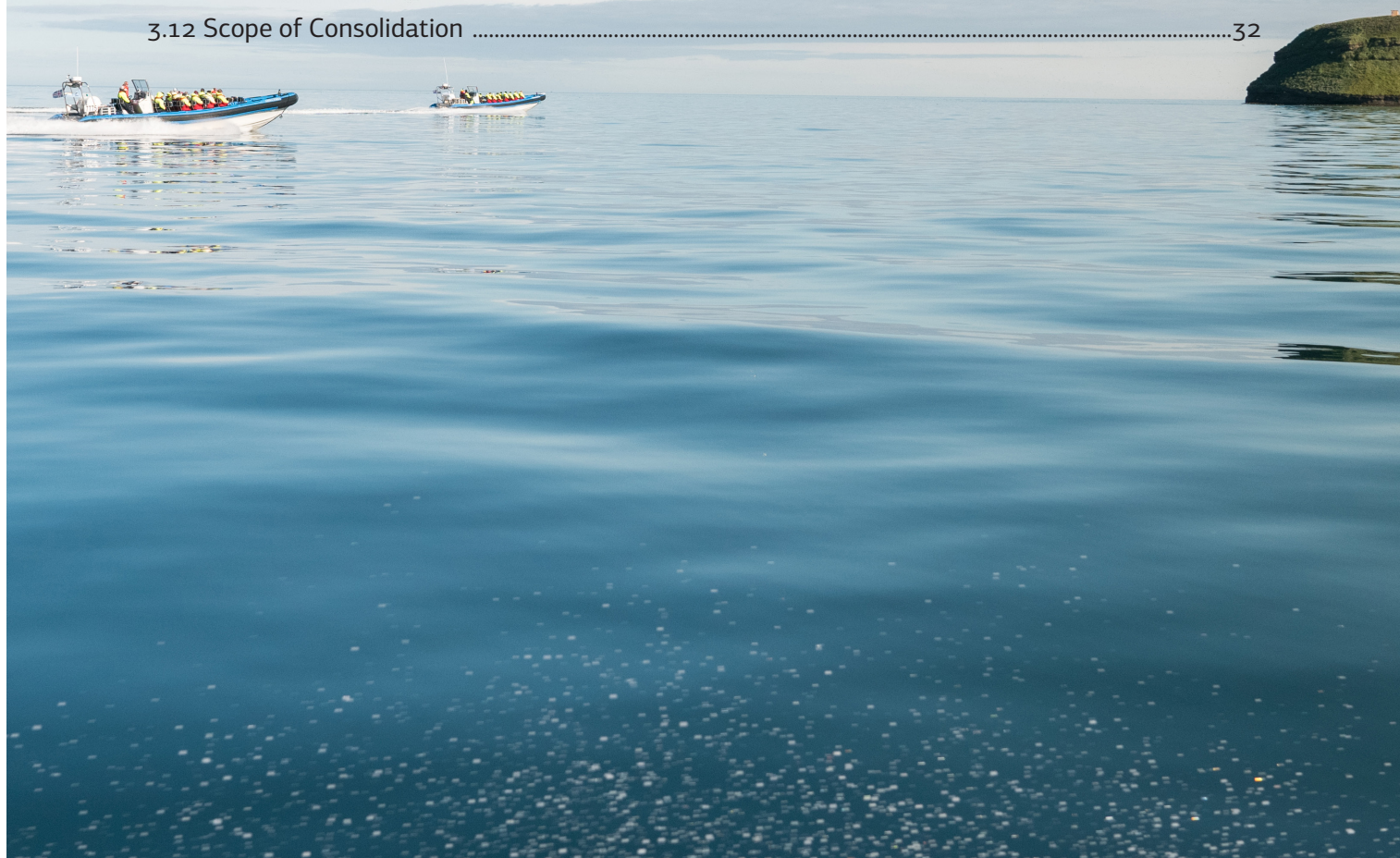
#### Executive Board report

An aggregated report containing risk-related material such as risk appetite, EC and RAROC



# 3 Capital management

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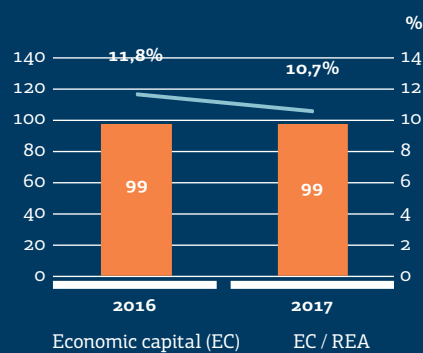


# Capital Management

**The purpose of the Group's capital management is to support the Group's strategy and ensure that it has sufficient capital to cover its risks at all times.**

- » The Group's total capital ratio decreased by 3.5 percentage points in 2017 to 26.7%
- » A dividend payment of ISK 1.05 per share in the total amount of ISK 24.8 billion was made in 2017
- » The overall economic capital remained stable during the year while risk exposure amount increased resulting in a EC/REA ratio of 10.7%

## Economic capital



## 3.1 Capital policy

Landsbankinn's objective of its capital structure policy is to ensure appropriate management, efficiency and economic utilisation of the Bank's equity, in addition to ensuring that the Bank fulfils regulatory capital requirements at all times. With active capital management, the Bank ensures that dividend payments based on its dividend policy do not weaken its equity and liquidity positions in excess of set limits and that the Bank can at all times meet increased risk in its operating environment.

### 3.1.1 Capital, capital ratios and dividend policy

The Bank's aim is to maintain a capital ratio above the FME's total capital requirement at any given time, plus a management buffer specified in the Bank's risk appetite. The Bank also aims

to be in the highest category for risk-adjusted capital ratio, as determined and measured by the relevant credit rating agencies.

Landsbankinn aims to pay regular dividends to shareholders amounting in general to 60-80% of the previous year's profit. In line with Landsbankinn's target capital and liquidity ratios, the aim is also to make special dividend payments to optimise the Bank's capital structure.

In determining the amount of dividend payments, the Bank's continued strong financial position shall be ensured. Regard shall be had for risk in the Bank's internal and external environment, growth prospects and the maintenance of a long-term, robust equity and liquidity position, as well as compliance with regulatory requirements of financial standing at any given time.

## 3.2 Capital management structure - roles and responsibilities

The Group's capital management governance structure at year-end 2017 is as follows:

### Board of Directors

The Board of Directors of Landsbankinn is responsible for forging the Bank's business strategy and policy on aggregate exposure and determines the Bank's risk appetite. The Board of Directors entrusts implementation of the policy to the CEO. The Board of Directors approves Landsbankinn's current issuance programme and subordinated borrowings. The Board of Directors shall be actively involved in the design and implementation of stress tests and ensure that their organisation is based on a robust and efficient infrastructure.



## CEO, Risk & Finance Committee

The CEO is responsible for implementation of the capital structure policy and manages this duty through the Bank's Risk & Finance Committee. The Committee is responsible for ensuring that the policy is complied with in the shaping of the Bank's business and financial plan. The Risk & Finance Committee is responsible for the design and presentation of stress tests and scenarios.

## Finance

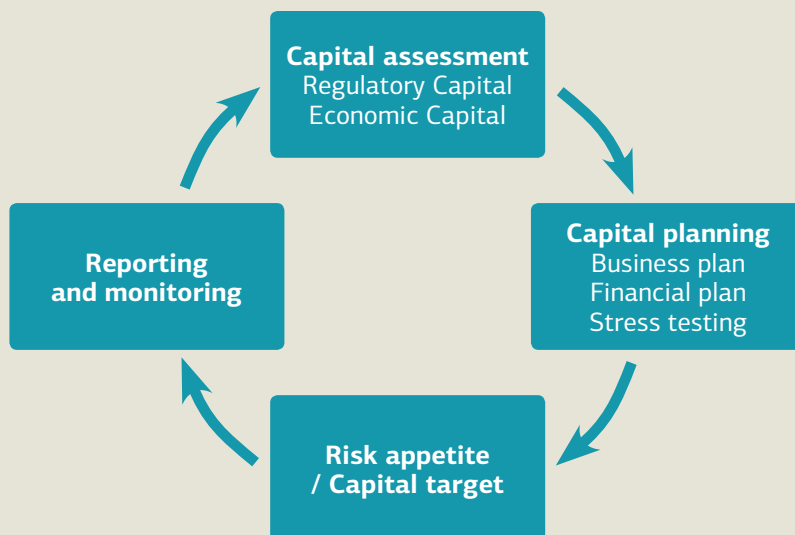
The CFO is responsible for the day-to-day capital management and funding of the Bank and reports to the Risk & Finance Committee. Finance is tasked with monitoring the risk exposure amount, the capital base and capital position at any given time and reporting on these matters. Reporting incorporates regular reports on developments in the capital base and equity requirements and plans, as well as the ICAAP report. Finance is responsible to the Risk & Finance Committee for the design and presentation of scenarios and implementation of stress testing of Landsbankinn's capital structure. Treasury, a department within Finance, is responsible to the Risk & Finance Committee for the management of Landsbankinn's funding, both in ISK and foreign currency.

## Risk Management

The CRO is responsible for risk assessment and monitoring of risk factors and reports to the Risk & Finance Committee. Risk Management is also responsible

## Capital management framework

Figure 3-1



for the economic capital framework and measurement.

## Managing Directors of income-generating divisions

The Managing Directors of income-generating divisions shall comply with the capital structure policy in their activities. This means inter alia that business decisions taken within these divisions shall comply with the business and financial plan, risk appetite and the Bank's current profitability target.

## Internal Audit

Internal Audit shall regularly review and comment on the framework and work procedures related to the capital structure policy and in so doing help ensure that the policy extends to and is proportional to the nature, scope and risk inherent in the Bank's operation.

## 3.3 Capital management framework and capital target

The capital management framework of the Bank is comprised of 4 interdependent activities: Capital assessment, risk appetite/capital target, capital planning, and reporting/monitoring.

The Group uses standardised approaches in measuring the regulatory capital requirement for Pillar I risks and economic capital (EC) for capital management purposes.

The total capital ratio target is set annually as a part of the Bank's risk appetite. When setting the target, EC, Pillar I and II capital requirements, regulatory capital buffers, management capital buffer, risk appetite, and strategic objectives are considered.



The Group's most recent capital requirements, as determined by the FME, are shown in Table 3-1 (% / REA):

Table 3-1	SREP based on 2016 annual accounts	SREP based on 2015 annual accounts
Pillar I	8.0%	8.0%
Pillar II	4.9%	6.0%
Total capital requirement	12.9%	14.0%
Systemic risk buffer	2.8%	2.7%
Capital buffer for systematically important institutions	2.0%	2.0%
Countercyclical capital buffer	1.2%	0.9%
Capital conservation buffer	2.5%	2.5%
<b>Total capital buffers</b>	<b>8.5%</b>	<b>8.1%</b>
<b>Total capital requirement plus capital buffers</b>	<b>21.4%</b>	<b>22.1%</b>

The Internal Capital Adequacy Assessment Process (ICAAP) under Pillar II is the Group's own assessment of its capital need. It is based on EC calculations, stress testing and results from the Supervisory Review and Evaluation Process (SREP) by the FME. ICAAP and SREP form the foundation for the Bank's capital planning including the business and financial plan for the next 3 years.

As previously mentioned the Bank's target for the Group's minimum total capital ratio is to be well above FME's capital requirements. The Bank also aims to be in the highest category for

risk-adjusted capital ratio, as determined and calculated by the relevant credit rating agencies.

Based on the current regulatory capital requirement of a 21.4% capital ratio and a reduced management buffer of 1.5–2.5% as compared to 3.0% in 2017, the Group's capital targets are shown in Table 3-2.

In October 2017 the international rating agency Standard & Poor's (S&P) upgraded Landsbankinn's long- and short-term credit ratings from BBB/A-3 to BBB+/A-2 with a stable outlook. The stable outlook reflects S&P's view of

improving economic resilience and private sector debt, partly offset by concerns for increasing economic imbalances. The revision of Landsbankinn's rating is further said to be a reflection of the Bank's very strong financial position which S&P does not expect to change. It also mirrors its expectations that the Bank's risk-adjusted capital (RAC) ratio will remain in the highest category, or above 15%, over the next two years, despite high dividend payments. S&P's reports and announcements are accessible on Landsbankinn's website.

Table 3-2

Ratio	Goal	2017	2016	2015	Comment
<b>Total capital ratio</b>	≥23%	26.7%	30.2%	30.4%	Long-term goal for 2020
<b>Common equity Tier 1</b>	≥18%	26.3%	29.7%	30.3%	
<b>Dividend payout ratio</b>	60-80%	TBD	78%	80%	The aim is to also pay a special dividend to further optimise the Bank's capital structure

### 3.4 The capital base

The Group's equity decreased by ISK 5 billion in 2017 to ISK 246 billion (2016: ISK 251 billion). The capital adequacy ratio is calculated in accordance with Article 84 of Act No. 161/2002, on Financial Undertakings. The Group's capi-

tal adequacy ratio decreased by 3.5 percentage points in 2017 and was 26.7% at 31 December 2017 (2016: 30.2%).

Under the Act, the minimum capital ratio in relation to REA is 8%, with a minimum of 4.5% CET1 and 6% Tier 1 capital.

A dividend payment of ISK 1.05 per share in the amount of ISK 24.8 billion was made in 2017. Dividends were paid in two instalments, ISK 13 billion for the operating year 2016, which is equivalent to 78% of the year's profit, and a special dividend to shareholders in the amount of ISK 11.8 billion.

The capital base consists of CET1 and Tier 2 capital and the breakdown is as follows:

#### The capital base

Table 3-3

Capital base	31.12.2017	31.12.2016
Share capital	23,640	23,648
Share premium	120,764	120,847
Reserve	12,902	10,875
Retained earnings	88,751	95,834
Total equity attributable to owners of the Bank	246,057	251,204
Non-controlling interests	0	27
Intangible assets	-3,044	-2,634
<b>CET1</b>	<b>243,013</b>	<b>248,597</b>
Subordinated liabilities	77	388
Regulatory amortisation	0	-203
General credit risk adjustment	4,037	4,024
<b>Tier 2 capital</b>	<b>4,114</b>	<b>4,209</b>
<b>Capital base</b>	<b>247,127</b>	<b>252,806</b>
<b>Risk exposure amount</b>		
Credit risk	809,492	728,428
Market risk	17,664	16,519
Operational risk	96,962	91,811
<b>Total risk exposure amount</b>	<b>924,118</b>	<b>836,758</b>
CET1 ratio	26.3%	29.7%
TCR	26.7%	30.2%

## Capital requirement

Table 3-4

Capital requirement and REA	31.12.2017		31.12.2016	
Credit risk breakdown	Capital requirement	REA	Capital requirement	REA
Central governments or central banks	157	1,958	422	5,277
Regional governments or local authorities	168	2,097	190	2,373
Institutions	784	9,801	584	7,299
Corporates	41,420	517,755	36,424	455,297
Retail	6,620	82,754	5,721	71,510
Secured by real estate property	10,991	137,387	9,778	122,230
Past due items	1,738	21,730	2,015	25,186
Other items	2,881	36,010	3,140	39,255
<b>Credit risk</b>	<b>64,759</b>	<b>809,492</b>	<b>58,274</b>	<b>728,427</b>
<b>Market risk breakdown</b>				
Traded debt instruments	191	2,388	276	3,456
Equities	809	10,117	711	8,889
CVA	45	565		
<b>Market risk</b>	<b>1,046</b>	<b>13,070</b>	<b>988</b>	<b>12,345</b>
<b>Currency risk</b>	<b>368</b>	<b>4,594</b>	<b>334</b>	<b>4,174</b>
<b>Operational risk</b>	<b>7,757</b>	<b>96,962</b>	<b>7,345</b>	<b>91,811</b>
<b>Total capital requirement and REA</b>	<b>73,929</b>	<b>924,118</b>	<b>66,941</b>	<b>836,757</b>

### 3.4.1 CET1 capital and statutory deductions

CET1 capital consists of core equity less statutory deductions according to requirements of the FME based on Chapter 10 of Act No. 161/2002.<sup>1</sup> The Group makes deductions in order to determine its CET1 capital where applicable:

- » Carrying amounts of intangible assets

- » Deferred tax assets
- » Capital holdings in other credit and financial institutions amounting to more than 10% of their capital

### 3.5 Capital requirement

The regulatory minimum capital requirement under Pillar I of the Directive is 8% of risk exposure

amount (REA) for credit risk, market risk and operational risk. The Group uses the standardized approach<sup>2</sup> in measuring Pillar I capital requirements for credit risk and market risk. For operational risk it uses the basic indicator approach.

The Group's REA was ISK 924 billion at year-end 2017 and increased by ISK 87 billion, or 10.4%, for the year. Accordingly,

<sup>1</sup> Article 55, see <http://www.althingi.is/lagas/145b/2002161.html>

<sup>2</sup> See Staðalaðferð <http://www.stjornartidindi.is/Advert.aspx?ID=f051707c-8c23-4e99-a305-68dcb6f97a29>

the minimum capital requirement REA for credit risk, the single largest risk type, amounts to 88% of total REA.

### 3.6 Economic capital

Economic capital (EC) is a risk measure which is applied to all material risks. It captures unexpected losses and reduction in value or income for which the Group needs to hold capital to avoid insolvency. It arises from the unexpected nature of losses as distinct from expected losses. EC is defined as the difference between unexpected losses and expected losses, where unexpected loss is defined as the 99.9% Value-at-Risk (VaR), with a one-year time horizon.

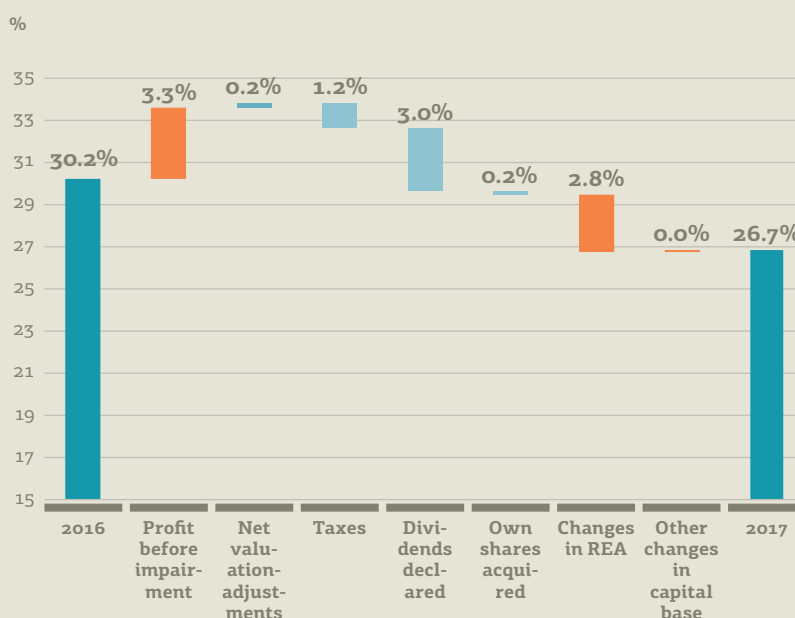
The purpose of the EC framework is to enable the Group to assess the amount of capital it requires to absorb losses from its risk-taking activities, as well as to compare different risk types using a common “risk currency”.

The objective of the EC framework is to measure unexpected losses as well as to decompose EC on various levels to enable capital allocation, limit-setting, pricing of products, risk-adjusted performance measurement and value-based management.

The framework covers the following risk types: credit risk, market risk, currency risk, operational risk, concentration risk, interest rate risk in the non-trading book, inflation risk, legal risk and business risk.

Change in capital ratio

Figure 3-2



Change in Risk Exposure Amount

Figure 3-3

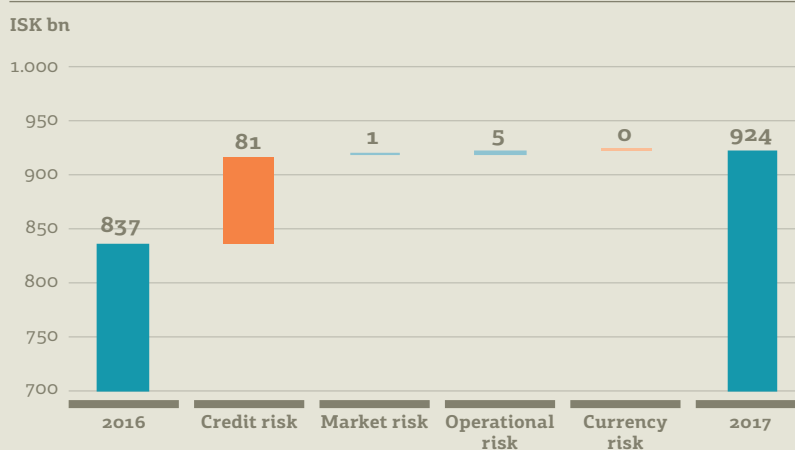


Table 3-5 summarizes how the Group calculates its EC for the risks included in the framework.

<b>Economic capital</b>		Table 3-5
<b>Risk</b>	<b>Calculation method</b>	
<b>Credit risk</b>	The credit risk EC model is the asymptotic single risk factor (ASRF) model from the Basel II internal rating based (IRB) approach's risk weight formula, i.e. EC equals the capital requirements of the IRB approach in the capital requirements directive. The main inputs to the model are the risk parameters probability of default (PD), loss given default (LGD) and exposure at default (EAD).	
<b>Market risk</b>	Market risk EC includes EC for interest rate risk in the trading book and EC for equity price risk in the trading book.	
	Each EC is calculated according to a stressed Value at Risk model as specified in the internal model's approach in the capital requirements directive (CRR). The model inputs are calibrated to historical data from the previous 5 years.	
	EC for credit valuation adjustment (CVA) equals the capital requirements for CVA.	
<b>Currency risk</b>	EC for foreign exchange risk is calculated according to a modified stressed Value at Risk model where the model inputs are calibrated to historical data from a period of significant stress relevant to the Groups' net FX position. The time horizon is one year.	
<b>Concentration risk</b>	EC for single name concentration is calculated by adjusting for the granularity and non-homogeneity in the portfolio. This is necessary as the credit risk EC model assumes that the portfolio is infinitely large and homogenous; hence, the single name concentration EC is given as an add-on.	
	An internal model is used to measure the additional EC for credit risk related to industry concentrations in the loan portfolio, i.e. a concentration add-on. The model calculates the EC for industry concentration using both the industry concentration in the loan portfolio and the industry concentration in Iceland <sup>3</sup> which is subtracted from the portfolio result to get the EC add-on for industry concentration.	
<b>Interest rate risk and inflation risk in the banking book</b>	EC for interest rate risk and inflation risk in the banking book is equal to the loss in economic value (EV) for assets and liabilities in all currencies. The loss in EV in ISK is the loss corresponding to the 99.9th percentile of interest rate and inflation risk factor changes estimated by a Monte Carlo simulation model. The loss in EV for other currencies is the loss resulting from a flat 200bp shift (with a zero rate floor) of the corresponding yield curves.	
<b>Operational risk</b>	EC for operational risk is calculated using the basic indicator approach, which means that it equals the Group's capital requirement.	
<b>Business risk</b>	EC for business risk is calculated using an internal model, which is based on the volatility of the Bank's income, before profit or loss due to any other material risk.	
<b>Legal and regulatory risk</b>	EC for legal and regulatory risk is calculated by adding the potential loss of on-going disputes weighted by their status within the legal system.	

<sup>3</sup> The national sector distribution is published by the Central Bank of Iceland in its Financial Stability report.

<b>Economic capital ISK million</b>	<b>2017</b>	<b>2016</b>
Credit risk - Loans to customers and credit institutions	59,477	53,835
Credit risk - Other assets	7,001	6,769
Market risk	2,717	1,396
Currency risk	948	875
Operational risk	7,757	7,344
Single name concentration risk	5,048	4,784
Industry concentration risk	1,224	2,600
Interest rate and inflation risk	10,072	15,889
Business risk	3,878	3,672
Legal and regulatory risk	482	1,579
<b>Total</b>	<b>98,604</b>	<b>98,744</b>
REA	924,118	836,758
<b>EC/REA</b>	<b>10.7%</b>	<b>11.8%</b>

Table 3-6

EC amounted to ISK 98.6 billion at 31 December 2017 and remains fairly unchanged since the previous year (2016: ISK 98.8 billion). The ratio of EC to REA decreased from 11.8% to 10.7% due to higher REA, mainly because of increased lending during the year.

Even though the credit quality improved the economic capital due to credit risk increased significantly during 2017 in tandem

with increased lending. The Group also updated its industry concentration risk calculations which results in a decline in the EC.

EC calculations for equity price risk in the trading book was changed in 2017. It is now calculated as specified in the capital requirements directive (CRR) using a stressed Value at Risk model replacing the previous "simple risk weight approach". These

changes resulted an increase in EC due to equity price risk.

The Group also adjusted its methodology for estimating interest rate risk in the banking book in foreign currency by introducing a 0% floor for yield curve shifts as specified by regulators. As a result, EC for interest rate risk and inflation risk in the banking book reduced significantly.

Credit risk as at 31 December 2017	PD	LGD	EAD	EC
Financial institutions	0.1%	45.0%	46,818	783
Public entities	0.1%	45.0%	150,347	173
Retail*	2.9%	26.4%	415,860	12,989
Corporates	2.6%	37.3%	608,843	45,532
<b>Total</b>	<b>2.3%</b>	<b>34.9%</b>	<b>1,221,868</b>	<b>59,477</b>

Credit risk as at 31 December 2016	PD	LGD	EAD	EC
Financial institutions	0.2%	45.0%	23,040	584
Public entities	0.2%	45.0%	134,713	135
Retail*	3.5%	26.9%	383,686	12,989
Corporates	2.4%	38.4%	566,046	40,127
<b>Total</b>	<b>2.5%</b>	<b>35.5%</b>	<b>1,107,485</b>	<b>53,835</b>

\*Retail exposure consists of small and medium-sized enterprises with total exposure under ISK 75 million and which meet the criteria of EU recommendation no. 2003/361/EC on SMEs and individuals.

Table 3-7

Table 3-7 shows a further breakdown for credit risk, probability of default by asset class as well as loss given default, exposure at default and economic capital.

### 3.7 Capital buffers

On 1 January 2014, a new framework for prudential requirements for banking entered into force in the EU. The framework, referred to as CRD IV, consists of two parts: an updated Directive (CRD

IV, Capital Requirements Directive) and a Regulation (CRR, Capital Requirements Regulation).

The Capital Requirements were incorporated into Icelandic law in 2016. The phasing in of capital buffers has been completed for the three large Icelandic banks, including Landsbankinn. In the case of smaller financial firms, the phasing in is expected to be completed in January 2019. The framework does not apply to the Housing Financing Fund (HFF).

The capital buffers are:

1. Systemic risk buffer
2. Other systemically important institution buffer (O-SII Buffer)
3. Counter-cyclical buffer
4. Capital conservation buffer

Development of active capital buffers for Landsbankinn as recommended by the Icelandic Financial Stability Council to the FME is shown in Table 3-8.

Table 3-8

	1.11.2016	1.1.2017	1.3.2017	1.11.2017
<b>Systemic risk buffer</b>	3.00%	3.00%	3.00%	3.00%
<b>O-SII buffer</b>	2.00%	2.00%	2.00%	2.00%
<b>Counter-cyclical buffer</b>	0.00%	0.00%	1.00%	1.25%
<b>Capital conservation buffer</b>	1.75%	2.50%	2.50%	2.50%
<b>Total</b>	<b>6.75%</b>	<b>7.50%</b>	<b>8.50%</b>	<b>8.75%</b>

The capital buffers are expressed as a proportion of REA. However, the systemic risk buffer and the counter-cyclical buffer only apply to domestic REA. Proportional distribution of domestic and foreign REA at year-end 2017 as compared to 2016 is shown in table 3-9.

Table 3-9	2017	2016
Domestic REA	95%	90%
Foreign REA	5%	10%
Total	100%	100%

Taking this distribution into account, the cumulative active capital buffers for Landsbankinn at year end 2017 is 8.5%. As mentioned the Bank has on top of the regulatory requirement determined a range for a management buffer of 1.5%-2.5% in its risk appetite.

### 3.8 Risk-adjusted return on capital

To analyse the Group's risk adjusted profit and profitability, i.e. including the cost of risk, the measured risk adjusted profit (RAP) and risk-adjusted return on capital (RAROC), are reported monthly to senior management. The objective of the measures is to assess shareholder value creation and profitability in relation to the equity capital needed to cover the risks taken on, i.e. the

economic capital. The measures enable risk-based pricing, increases incentives to measure and manage risk appropriately, focus on long term profit, as well as support the assessment of the Bank's optimal capital structure.

The measures have been enforced throughout the Group. By enforcing this measure, the Group can ensure that each of its departments are considering the cost of risk in the same way, and deciding how to structure and accept transactions within the same risk appetite guidelines.

### 3.9 Stress testing

As a part of ICAAP and the capital planning process, internal stress tests are used as an important risk management tool in order to determine how severe, unlikely but plausible, changes in the business and macro environment affect the capital need. Stress tests reveal how the capital need varies during a stress scenario, where impact on financial statements, regulatory capital requirements and capital ratios occur. The stress testing process is divided into the following steps:

- » Scenario development and approval
- » Scenario translation
  - Translation model to determine loan loss

- Translation method to determine the effect on financial statements
- Translation model to determine EC
  - » Calculation
  - » Management actions
  - » Analysis and reporting

In 2017, the Group developed 3 scenarios, including a baseline scenario. These scenarios forecast developments of key macro indicators over a three year period. Scenarios demonstrate an alternative development of key economic variables induced by various shocks compared to the baseline macroeconomic and inflation forecast of Landsbankinn's Economic Research department.

When scenarios have been developed and approved by the Board a scenario translation is applied. The Group uses both statistical models as well as expert judgement.

The Group uses a loan loss model which incorporates macroeconomic variables and produces probability of default (PD), default rates as well as loss given default (LGD) which can then be translated into loan losses for a given scenario. In addition to the loan loss model results expert judgement is applied for loan loss on selected industries hit by the scenario shock.



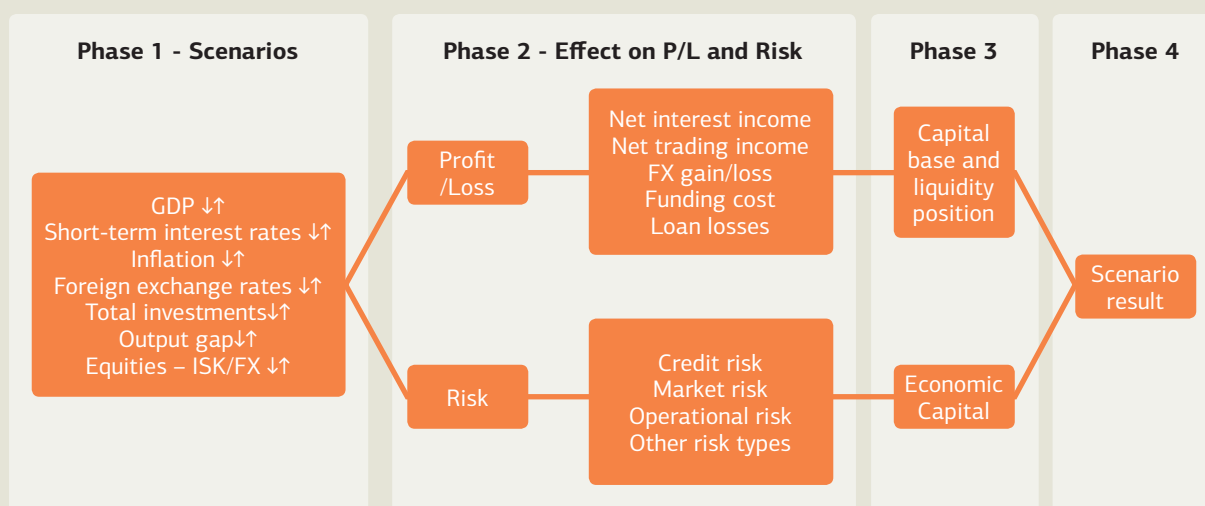


Figure 3-4

The effect on financial statements is translated and calculated with a resulting impact on the capital base and liquidity position. EC for the Bank is calculated for each scenario as well as various risk metrics within the Bank's risk appetite. If the risk appetite constraints are violated, management actions are required within the scenario.

### 3.10 Leverage ratio

The Capital Requirements Regulation (CRR) as part of Basel III framework requires banks to measure, report and monitor their leverage ratios. The ratio is defined as CET1 capital as a percentage of total leverage exposure (see table 3-10) and acts as a credible supplementary measure to the risk-based capital requirements.

A credible leverage ratio is one that ensures broad and adequate capture of both the on- and off-balance sheet sources of banks' leverage, aimed at revealing hidden leverage on banks' balance sheets. The ratio reinforces the risk-based requirements with a simple non-risk based "back-stop" measure and is intended to restrict the build-up of leverage in the banking sector. The leverage ratio minimum requirement is 3%.

**Leverage ratio**

Table 3-10

	2017	2016
Tier 1 capital	243,013	248,597
Leverage exposure		
- On-balance sheet exposure (excluding derivatives)	1,190,965	1,110,879
- Derivatives instrument exposure	1,905	278
- Potential future exposure on derivatives	1,568	835
- Off-balance sheet exposure	141,482	113,267
- Regulatory adjustments to Tier 1 capital	-3,044	-2,634
<b>Total leverage exposure</b>	<b>1,332,876</b>	<b>1,222,625</b>
<b>Leverage ratio</b>	<b>18.2%</b>	<b>20.3%</b>

At 31.12.2017, the Group's leverage ratio was 18.2%, roughly six-fold the 3% minimum requirement. Further information about the leverage ratio can be found in the additional disclosures accompanying this document.

### 3.11 Summary of Capital position

At 31.12.2017 the Group estimated its EC at ISK 99 billion and the minimum capital requirement to be ISK 74 billion. Additional

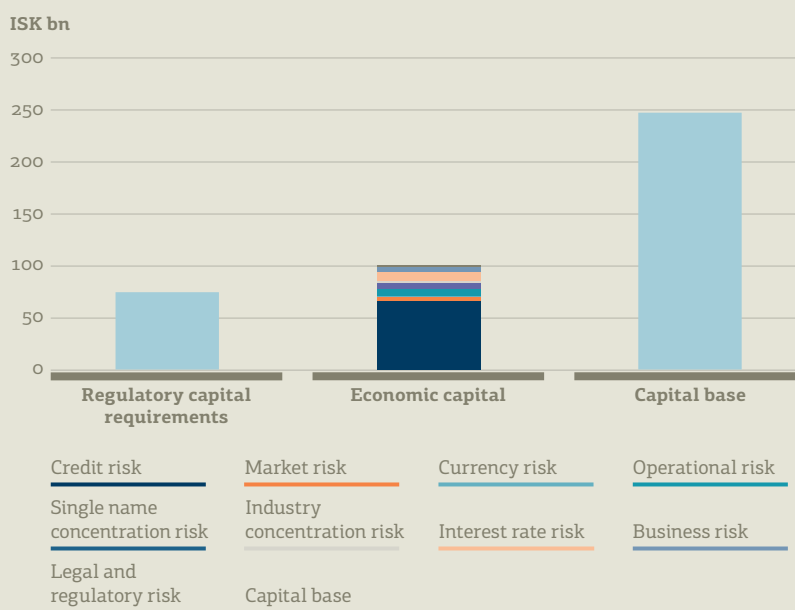
capital requirements amounted to ISK 24.7 billion compared to ISK 31.8 billion at year-end 2016. While minimum capital requirement increases due to the Bank's growth, additional capital requirement decreases most significantly by interest rate risk

Table 3-11

	REA 2017	REA 2016	CR 2017	CR 2016
<b>Minimum capital requirements</b>				
Credit risk	809,492	728,428	64,759	58,274
Market risk	13,070	12,344	1,046	988
Currency risk	4,594	4,174	368	334
Operational risk	96,962	91,811	7,757	7,345
<b>Total minimum capital requirements</b>	<b>924,118</b>	<b>836,758</b>	<b>73,929</b>	<b>66,941</b>
<b>Additional capital requirements</b>				
Credit risk			1,719	2,330
Market risk			1,671	409
Currency risk			580	541
Concentration risk			6,272	7,384
Interest rate risk and inflation risk in the banking book			10,072	15,889
Business risk			3,878	3,672
Legal & regulatory risk			482	1,579
<b>Total additional capital requirements</b>			<b>24,675</b>	<b>31,804</b>
<b>Total capital requirements (EC)</b>			<b>98,604</b>	<b>98,745</b>
<b>Total own funds (CAR)</b>			<b>247,127</b>	<b>252,806</b>
<b>EC / REA</b>			<b>10.7%</b>	<b>11.8%</b>

**Landsbankinn Capital position as of 31.12.2017**

Figure 3-5

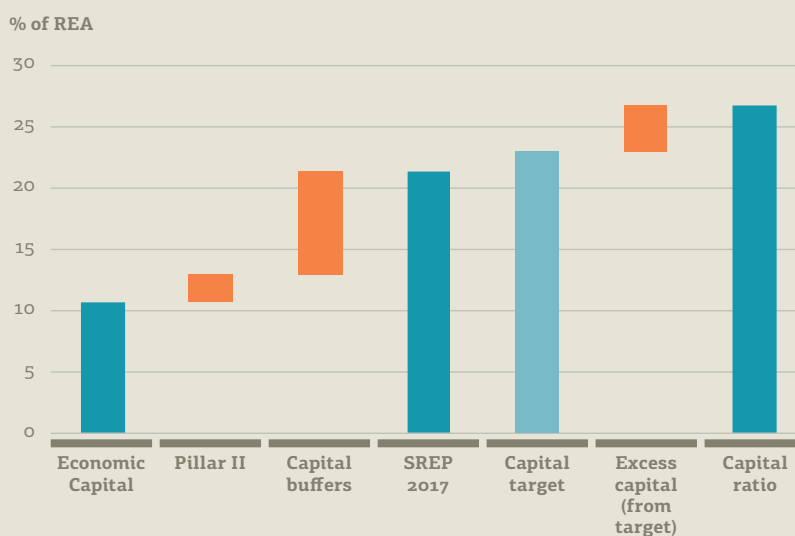


and inflation risk in the banking book but as well from concentration risk and legal and regulatory risk (see section 3.5). EC to REA was 10.7% at year-end 2017, decreasing by 1.1 percentage points from the previous year.

The Bank's capital ratio is comfortably above its strategic TCR target of  $\geq 23\%$  at year end 2017 with a TCR ratio of 26.7%. Compared to the latest SREP requirement of 21.4% the Bank's excess capital from regulatory point of view is 5.3 percentage points and 3.7 percentage points from the Bank's target.

**EC, Capital ratio and Excess Capital 31.12.2017**

Figure 3-6



## Main subsidiaries as at 31.12.2017

Table 3-12

Company	Ownership	Activity
Eignarhaldsfélag Landsbankans ehf.	100%	Holding company
Landsbréf hf.	100%	Management company for mutual funds
Hömlur ehf.	100%	Holding company – appropriated assets

### 3.12 Scope of Consolidation

The Pillar III report is based on Landsbankinn's Group definition as presented in the 2017 Annual Accounts.

Subsidiaries are investees controlled by the Group. The Group controls an investee if it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. The Group is considered to have power over an entity when it has existing rights that give it

the ability to direct the relevant activities. For the Group to have power over an entity, it must have the practical ability to exercise those rights. Subsidiaries are fully consolidated in the financial statements according to the acquisition method. In capital requirement and Economic Capital calculations the Group consolidates its subsidiaries with a full look-through approach; that is the Group looks through the subsidiary and down at each individual asset.

Associates are those entities in which the Group has significant

influence, but not control, over the financial and operating policies. Significant influence is presumed to exist when the Group holds, directly or indirectly, between 20 and 50 percent of the voting power of another entity. The Group accounts for investments in associates either using the equity method or as financial assets designated at fair value through profit or loss. In capital requirement and Economic Capital calculations the Group classifies the share in each associate with an applicable risk weight.

## Investments in associates as at 31.12.2017

Table 3-13

Associates	Ownership	31.12.2017	31.12.2016
Reiknistofa bankanna	39%	703	675
Auðkenni hf	26%	51	65
Greiðslumiðlun Íslands ehf.	48%	332	444
<b>Total</b>		<b>1,086</b>	<b>1,184</b>



# 4 Credit risk

4.1 Credit risk management .....	34
4.2 Credit portfolio.....	39

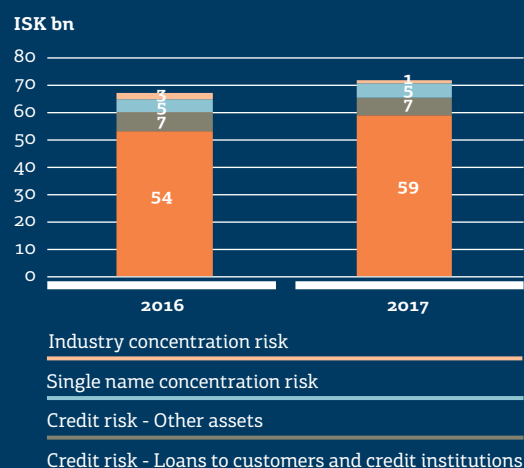


# Credit risk

**Credit risk is defined as the risk of loss if customers fail to fulfil their agreed obligations and the estimated value of pledged collateral does not cover existing claims.**

- » Probability of default decreased slightly during 2017, reaching 2.3% at year-end 2017 compared to 2.5% at the end of 2016
- » Economic capital due to credit risk increased in 2017 due to increased lending

## Economic capital



The Group offers loans, credits, guarantees and other credit related products as part of its business model and thus takes on credit risk.

At the end of 2017, 88% of the Group's risk exposure amount (REA) was due to credit risk. On the same date, total loans and advances amounted to ISK 971 billion (2016: ISK 874 billion), with ISK 926 billion coming from lending activities (2016: ISK 853 billion) and ISK 45 billion from loans and advances to financial institutions (2016: ISK 20 billion).

Credit exposure from lending activities accounts for most of the Group's credit exposure and is the focus of this section.

Managerial efforts to moderate credit risk continued to support the Group's credit risk profile in 2017. Overall credit quality remained stable, with 71% of total credit exposure having rating grades from 5 to 10, and impairment charges decreased. The credit risk profile is monitored and strengthened in accordance with the credit risk appetite, which encompasses credit quality (expected loss) and credit risk concentration (limits on single names and industries).

Regular risk reporting enables the ongoing monitoring of the Group's credit risk position relative to its risk appetite.

The credit risk appetite is converted by the business units to their specific key performance indicators (KPIs) in collaboration with Risk Management. Monitoring functions determine whether credit facilities are granted in accordance with the risk appetite. Risk Management monitors and challenges the performance and reports the progress to the Executive Board and the Board of Directors.

## 4.1 Credit risk management

Credit risk is mainly managed through the credit process and the Group's credit risk models which include PD, LGD and EAD modelling. The models are used



for various purposes, e.g. in provisioning and management reporting.

#### 4.1.1 Identification

Credit risk is defined as the risk of loss if customers fail to fulfil their agreed obligations and the estimated value of pledged collateral does not cover existing claims.

The Group's activities may give rise to risk at the time of settlement of transactions and trades. Settlement risk is the risk of loss due to the failure of an entity to honour its obligations to deliver cash, securities or other assets as contractually agreed.

Credit risk is the greatest single risk faced by the Group and arises principally from loans and advances to customers and from investments in debt securities, but also from commitments, guarantees and documentary credits, counterparty credit risk in derivatives contracts, and the aforementioned settlement risk.

#### 4.1.2 Assessment

Credit risk is measured in three main dimensions: probability of default (PD), loss given default (LGD) and exposure at default (EAD). For the purpose of measuring PD, the Group has developed an internal rating system, including a number of internally developed rating models. The objectives of the rating system are to provide a meaningful assessment of obligor characteristics; a meaningful differentiation of credit quality; and accurate and consistent quantitative estimates of default risk, i.e. probabilities of default (PD). Internal ratings and

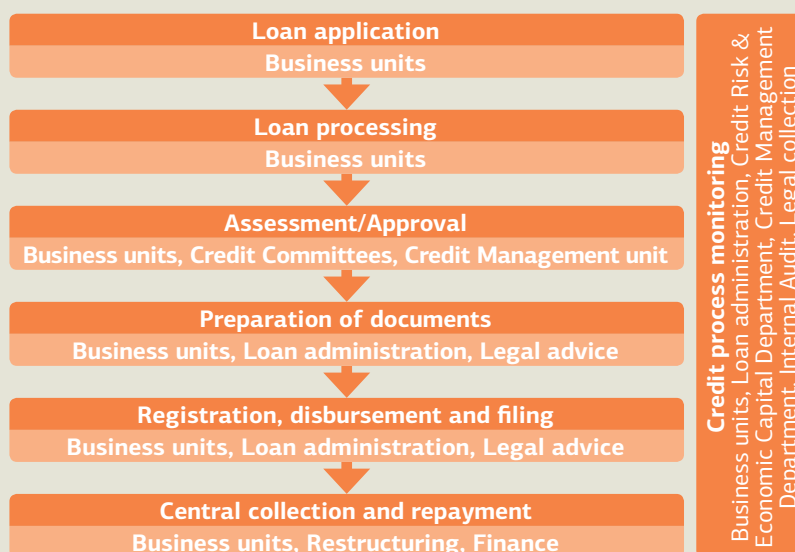


Figure 4-1

#### Rating category and PD band

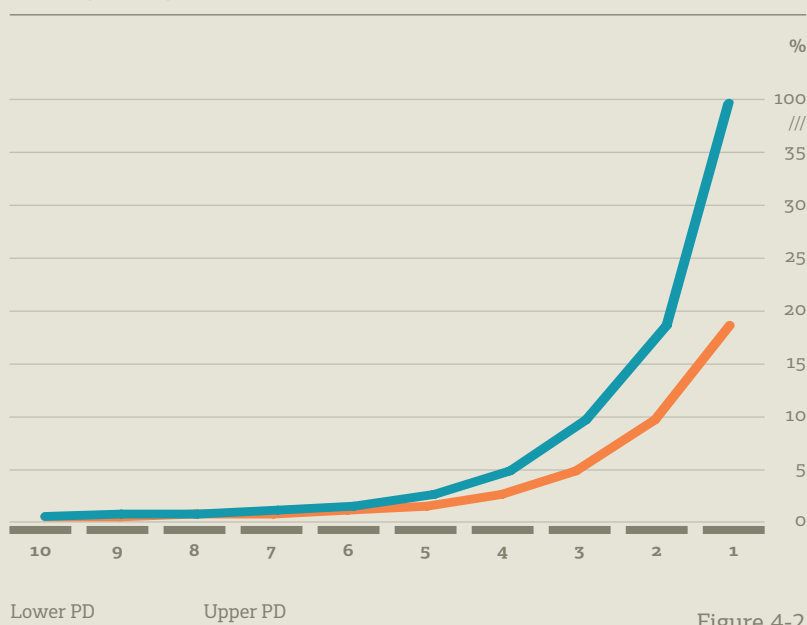


Figure 4-2

associated PD are essential in the risk management and decision-making process, and in the credit approval and corporate governance functions.

The rating system has an obligor rating scale which reflects exclusively quantification of the risk of

obligor default, or credit quality. The obligor rating scale has 10 rating grades for non-defaulted obligors from '1' to '10', with '10' indicating the highest credit quality, and the grade '0' for defaulted obligors. The rating assignment is supported by rating models, which take information

such as industry classification, financial accounts and payment behaviour into account.

The rating assignment and approval is an integrated part of the credit approval process and assignment shall be updated at least annually or when material information on the obligor or exposure becomes available, whichever is earlier.

The credit rating models' discriminatory power significantly exceeds the Basel II requirement of 0.5. Furthermore, the models are well calibrated, i.e. the weighted probability of default for each rating grade is equal to the actual default rate with respect to reasonable error limits.

### Internal mapping from internal rating grade to S&P rating grades

Internal rating grade	S&P	Lower PD	Upper PD
10	AAA/AA+/AA/AA-	0.00%	0.04%
9	A+/A/A-	0.04%	0.10%
8	BBB+	0.10%	0.21%
7	BBB/BBB-	0.21%	0.46%
6	BB+/BB	0.46%	0.99%
5	BB-	0.99%	2.13%
4	B+	2.13%	4.54%
3	B	4.54%	9.39%
2	B-	9.39%	18.42%
1	CCC/C	18.42%	100.00%

Table 4-1

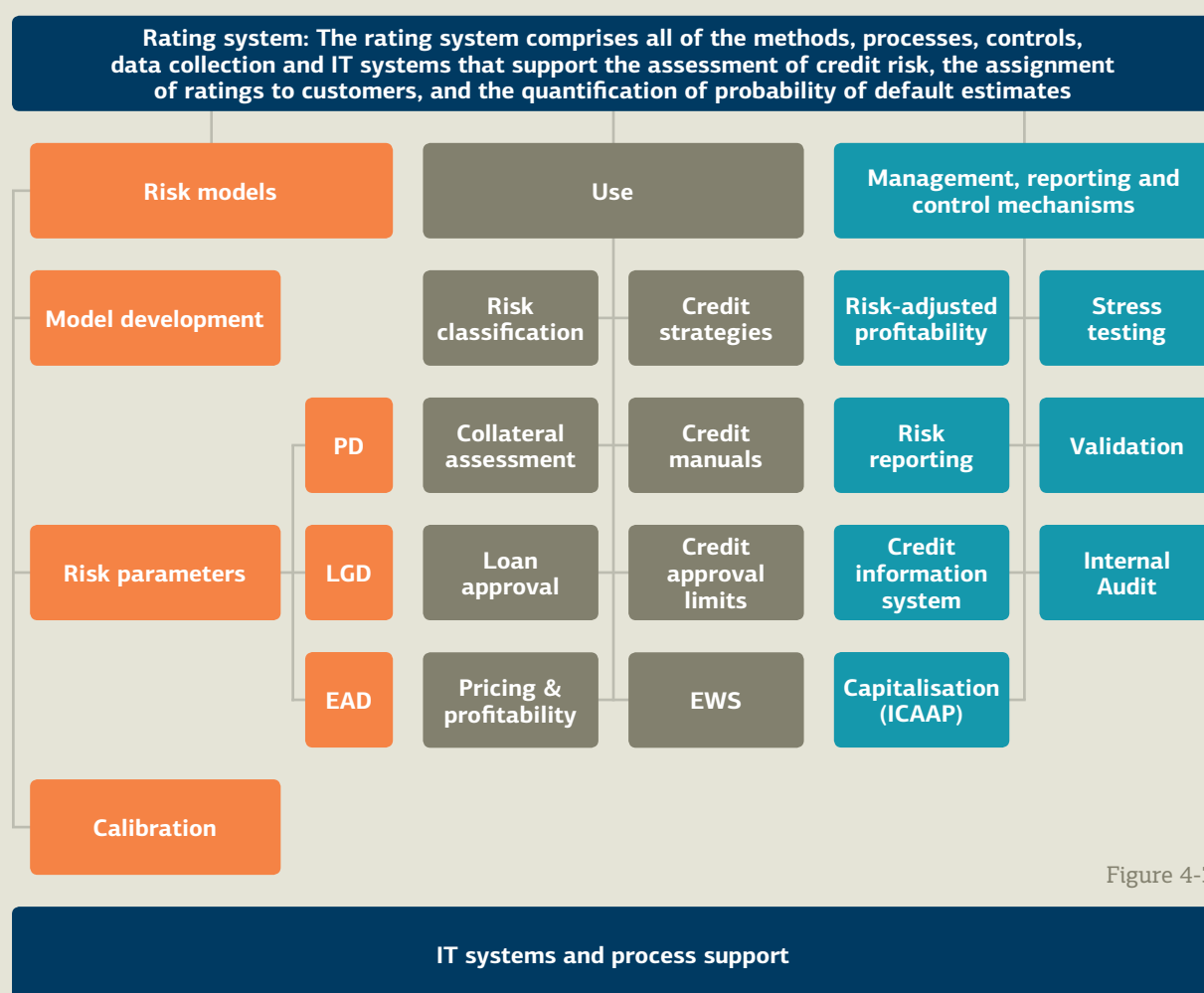


Figure 4-3



LGD is measured using an internal LGD model for the purpose of EC calculations. The internal LGD model, which takes into account more types of collateral and is more sensitive to the collateralisation level than the model defined in the Basel framework, was updated and calibrated to historical loss data in 2017.

Exposure at default is an estimate of the amount outstanding (drawn amounts plus likely future drawdowns of yet undrawn lines) in case the borrower defaults.



Figure 4-4

#### 4.1.3 Management and policy

The Group's credit risk management is based on active monitoring by the Board of Directors, the CEO, the Risk & Finance Committee, the Credit Committee, the credit departments within the Risk Management Division and the business units. The Group manages credit risk according to its risk appetite statement and credit policy approved by the Board of Directors, as well as detailed credit policies approved by the CEO. The risk appetite and credit policy include limits on large exposure to individual borrowers or groups of borrowers, concentration of risk and exposures to certain industries. The CEO ensures that the risk policy is reflected in the Group's internal framework of regulations and guidelines. The Bank's executives

are responsible for ensuring that the Bank's business units execute the risk policy appropriately as the CEO is responsible for the oversight of the process as a whole.

Incremental credit authorisation levels are defined based on size of units, types of customers and the lending experience of credit officers. The Group has also implemented industry policies to the credit decision process. Credit decisions exceeding authorization levels of business units are subject to confirmation by Credit Management, a department within Risk Management. Credit decisions exceeding the limits of Credit Management are subject to approval by the Group's Credit

Committee. Credit decisions exceeding the limits of the Credit Committee are subject to approval by the Board of Directors which holds the highest credit authorisation within the Bank.

#### 4.1.4 Mitigation

Mitigating risks in the credit portfolio is a key element of the Group's credit policy, as well as an inherent part of the credit-decision process. Securing loans with collateral is the main method of mitigating credit risk whereas for some loan products, collateral is required by legislation, as in the mortgage finance market, or is standard market practice.

The majority of collateral types are real estate, vessels and financial assets (shares or bonds).

The amount and type of collateral required depends on an assessment of the credit risk associated with the counterparty. Valuation parameters and the acceptability of different types of collateral are defined in the Group's credit policy. Credit extended by the Group may be secured on residential or commercial properties, land, securities, transport vessels, fishing vessels together with their non-transferable fishing quotas, etc. The Group also secures its loans by means of receivables, inventory and operating assets, such as machinery and equipment. Residential mortgages involve the underlying residential property. Less stringent requirements are set for securing short-term personal loans, such as overdrafts and credit card borrowings.

The Group regularly assesses the market value of collateral received. The Group has developed models to estimate the value of the most frequent types of collateral. For collateral for which no valuation model exists, the Group estimates the value as the market value less a haircut. The haircut represents a conservative estimate of the costs to sell the asset in a forced sale. Costs to sell include maintenance costs in the period over which the asset is up

for sale, fees for external advisory services and any loss in value. For listed securities, haircuts are calculated with an internal model based on variables, such as price volatility and marketability.

The Group monitors the market value of mark-to-market collateral and may require additional collateral in accordance with the underlying loan agreements.

In order to limit further the credit risk arising from financial instruments, the Group enters into netting agreements, under which the Group is able to set off all contracts covered by the netting agreement against the debt in cases of default. The arrangements generally include all market transactions between the Group and the client.

Generally, collateral is not held over loans and advances to financial institutions, nor is it usually held against bonds and debt instruments.

The Group includes all collateral to which a value is assigned in accordance with its internal procedures. Guarantees are included if they imply lower risk weights than the original exposure. In addition, collateral is volatility-adjusted (by means of a haircut) in order to take into account price volatility and the expected costs of repossession and sale of the pledge.

#### 4.1.4.1 Derivative financial instruments

In order to mitigate credit risk arising from derivatives, the Group chooses the counterparties for derivatives trading based on stringent rules, according to which clients must meet certain conditions set by the Group. The Group also enters into standard International Swaps and Derivatives Association (ISDA) master netting agreements and similar general netting agreements with financial counterparties.

Commensurate collateral and margin requirements are in place for all derivative contracts the Group enters into. Collateral management and monitoring is performed daily and derivative contracts with clients are usually fully hedged.

The Group's supervision system monitors both derivatives exposure and collateral value and calculates a credit equivalent value for each derivative intraday. It also issues margin calls and manages netting agreements.

Amounts due to and from the Group are offset when the Group has a legally enforceable right to set off a recognised amount and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously. External ratings are used where applicable to assist in man-

aging the credit risk exposure of bonds. Otherwise the Group uses fair value estimates based on available information and the Group's own estimates.

#### 4.1.5 Control and monitoring

The Group monitors exposures to identify signs of weakness in customer earnings and liquidity as soon as possible. To monitor customers, the Group uses – supplemental to ratings – an Early Warning System which classifies credit exposures to four credit risk groups (green, yellow, orange and red). The colour classification is as follows:

- » Green: the customer is considered as performing without signs of repayment problems
- » Yellow: the customer shows indication of deteriorating financial strength, which could lead to financial difficulties
- » Orange: the customer is or has been in financial difficulties or default

- » Red: the customer is in default and in legal collection and/or restructuring

The Credit Risk & Economic Capital Department within Risk Management is together with the business units responsible for the colour classification of customers.

#### 4.1.6 Impairment process

Group policy requires that individual financial assets above materiality thresholds are reviewed at least quarterly, and more frequently when circumstances require. Impairment allowances on individually assessed accounts are determined on a case-by-case basis by evaluating incurred losses at the reporting date. Collectively assessed impairment allowances are permitted in the following cases: (i) portfolios of homogenous loans that are individually below materiality thresholds, and (ii) losses that have been incurred but not yet identified, using the available historical experience together with experienced judgement and statistical techniques.

Should the expected cash flows be re-examined and the present value of the cash flows (calculated using the effective interest rate) be revised, the difference is then recognised in profit or loss (as either impairment or net adjustments to loans and advances). Impairment is calculated using the effective interest rate, before any revision of the expected cash flows. Any adjustments to the carrying amount which result from revising the expected cash flows are recognised in profit or loss. The impact of financial restructuring of the Group's customers is reflected in loan impairment, or net adjustments to loans and advances, as the expected cash flow of customers has changed.

## 4.2 Credit portfolio

### 4.2.1 Credit exposure

The Group's credit exposure shown in table 4-2 is defined as balance sheet items and off-balance-sheet items that carry credit risk, and the exposure is calculated net of accumulated loan

Table 4-2 shows the classification of the Group's financial assets.

### Classification of the Group's financial assets

Table 4-2

#### As at 31 December 2017

Financial assets	Loans and receivables	Held for trading	Designated as at fair value	Liabilities at amortised cost	Total carrying amount
Cash and balances with Central Bank	55,192	-	-	-	55,192
Bonds and debt instruments	49,421	57,176	10,713	-	117,310
Equities and equity instruments	-	9,298	18,682	-	27,980
Derivatives instruments	-	1,905	-	-	1,905
Loans and advances to financial institutions	44,866	-	-	-	44,866
Loans and advances to customers	925,636	-	-	-	925,636
Other financial assets	5,457	-	-	-	5,457
<b>Total</b>	<b>1,080,572</b>	<b>68,379</b>	<b>29,395</b>	<b>0</b>	<b>1,178,346</b>

#### As at 31 December 2016

Financial assets	Loans and receivables	Held for trading	Designated as at fair value	Liabilities at amortised cost	Total carrying amount
Cash and balances with Central Bank	30,662	-	-	-	30,662
Bonds and debt instruments	110,822	34,006	10,064	-	154,892
Equities and equity instruments	-	9,890	16,798	-	26,688
Derivatives instruments	-	278	-	-	278
Loans and advances to financial institutions	20,408	-	-	-	20,408
Loans and advances to customers	853,417	-	-	-	853,417
Other financial assets	6,528	-	-	-	6,528
<b>Total</b>	<b>1,021,837</b>	<b>44,174</b>	<b>26,862</b>	<b>0</b>	<b>1,092,873</b>

impairment charges. Most of the exposure derives from lending activities in the form of loans with and without collateral.

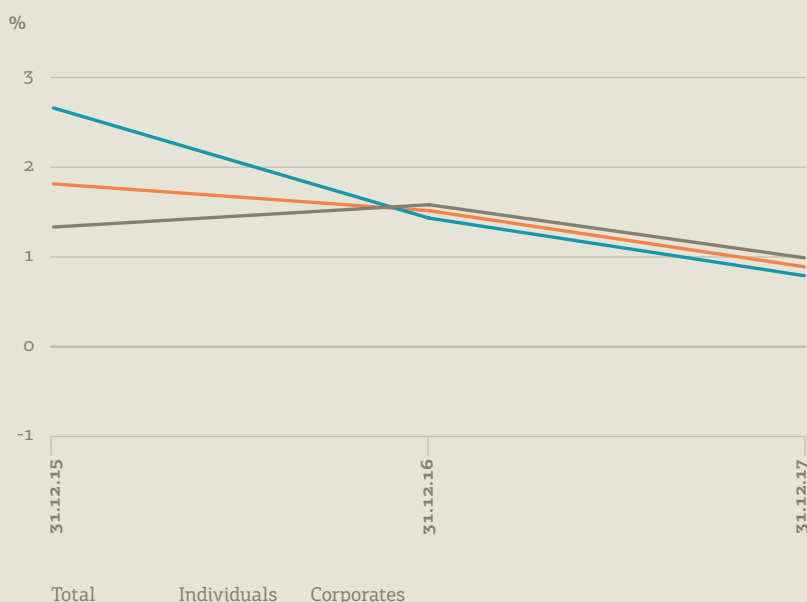
At the end of 2017, the total carrying amount was ISK 1,178 billion. Some ISK 926 billion are derived from lending activities, ISK 117 billion from bonds and debt instruments, and ISK 1.9 billion is derived from the carrying amount of derivatives.

#### 4.2.1.1 Credit exposure from lending activities

At the end of 2017, the Group's total credit exposure from lending activities amounted to ISK 926 billion, against ISK 853 billion at the end of 2016. This represents an increase of a 8%. In 2017, increased credit demand was seen in the corporate area, mainly in the service, construction and real estate sectors, which resulted in a significant increase in credit exposure. Credit exposure to individuals also grew substantially, mainly due to an increase in household mortgage lending. Together with continued increased lending activities, the Group continued its focus on services to existing customers

#### 90 days past due ratio

Figure 4-5



and refinancing of their loans as well as restructuring clients in financial distress.

The overall 90 days past due ratio decreased further during the year, at a faster pace than in the previous year, which witnessed slower decline than the year before. The decrement was driven by both the individual and corporate parts of the portfolio where

credit exposure over 90 days past due reduced significantly, which is a positive development as the corporate portfolio experienced an increase in 2016.

Since the beginning of 2017, credit exposure in over 90 days past due decreased from ISK 13 billion to ISK 8 billion resulting in a 0.9% 90 days past due ratio. The decrease is mainly due to

## Past due loans by industry

Table 4-3

As at 31 December 2017	Loans and advances to customers	Past due loans	Loans and advances to customers past due more than 90 days
Public entities	11,222	0.4%	0.0%
Individuals	356,258	3.3%	0.8%
Corporates	558,156	3.4%	1.0%
Real estate companies	123,245	3.5%	1.4%
Construction companies	79,906	1.7%	0.9%
Holding companies	25,894	3.0%	0.1%
Fisheries	114,136	1.3%	1.0%
Manufacturing	17,152	18.1%	0.4%
Agriculture	8,710	2.3%	0.6%
Information, technology and communication	31,563	1.7%	0.0%
Retail	54,034	3.5%	0.9%
Services	103,517	5.7%	1.4%
Other	1	0.1%	0.0%
<b>Total loans</b>	<b>925,636</b>	<b>3.4%</b>	<b>0.9%</b>
Financial institutions	44,866	0.0%	0.0%
<b>Total loans including financial institutions</b>	<b>970,502</b>	<b>3.2%</b>	<b>0.9%</b>

As at 31 December 2016	Loans and advances to customers	Past due loans	Loans and advances to customers past due more than 90 days
Public entities	9,783	3.2%	2.7%
Individuals	320,691	5.1%	1.4%
Corporates	522,944	4.0%	1.6%
Real estate companies	113,364	5.9%	1.5%
Construction companies	74,963	3.2%	1.1%
Holding companies	40,490	2.9%	0.4%
Fisheries	123,627	0.6%	0.3%
Manufacturing	24,167	17.8%	9.3%
Agriculture	10,135	4.7%	0.1%
Information, technology and communication	19,220	0.7%	0.1%
Retail	42,235	3.1%	1.1%
Services	74,743	5.8%	3.2%
Other	1	0.4%	0.4%
<b>Total loans</b>	<b>853.417</b>	<b>4.4%</b>	<b>1.5%</b>
Financial institutions	20.408	0.0%	0.0%
<b>Total loans including financial institutions</b>	<b>873.825</b>	<b>4.3%</b>	<b>1.5%</b>



Table 4-4 shows the different types of collateral held by the Group against credit exposures. Residential property is the principal collateral held against loans to individuals. Construction projects and commercial property are the main real estate collateral held against loans to corporates. The collateral value amounts are assigned to claim value amounts. The value of each individual collateral item held cannot exceed the maximum credit exposure of the corresponding individual claim. Changes in collateral value amounts between periods result either from changes in the underlying value of collateral or changes in the credit exposure.

Table 4-4

As at 31 December 2017						
Collateral value after haircut	Collateral types					Total
	Real estate	Vessels	Deposits	Securities	Other	
Financial institutions	0	0	0	0	0	0
Public entities	1,282	0	36	0	346	1,664
Individuals	311,117	97	537	2,917	15,887	330,555
Individuals-mortgage	266,979	16	28	112	3,138	270,273
Individuals-other	44,138	81	509	2,805	12,749	60,282
Corporates	303,026	79,172	2,762	60,594	111,010	556,564
Fisheries	9,664	77,401	169	16,151	19,682	123,067
Construction companies	78,553	78	1,137	7	7,022	86,787
Real estate companies	114,403	31	196	1,965	910	117,505
Holding companies	1,714	0	15	23,554	11	25,294
Retail	21,096	5	110	3,700	32,218	57,129
Services	62,690	1,602	815	3,975	34,417	103,499
Information, technology and communication	557	0	45	9,618	4,577	14,797
Manufacturing	8,025	48	272	1,624	9,275	19,244
Agriculture	6,324	7	3	-	2,898	9,244
Other	0	0	0	-	-	0
<b>Total</b>	<b>615,425</b>	<b>79,269</b>	<b>3,335</b>	<b>63,511</b>	<b>127,243</b>	<b>888,783</b>

As at 31 December 2016						
Collateral value after haircut	Collateral types					Total
	Real estate	Vessels	Deposits	Securities	Other	
Financial institutions	0	0	0	0	0	0
Public entities	1,692	0	41	0	123	1,856
Individuals	270,629	221	584	3,262	14,024	288,720
Individuals-mortgage	228,954	10	82	191	2,555	231,792
Individuals-other	41,675	211	502	3,071	11,469	56,928
Corporates	271,474	93,714	3,835	57,720	102,542	529,285
Fisheries	12,010	91,101	152	16,205	20,948	140,416
Construction companies	71,513	81	823	2,240	6,586	81,243
Real estate companies	107,642	23	256	440	599	108,969
Holding companies	5,528	0	870	26,572	507	33,477
Retail	16,161	11	562	1,066	23,981	41,782
Services	40,367	2,443	640	1,651	28,077	73,179
Information, technology and communication	603	0	121	5,738	7,375	13,837
Manufacturing	10,104	50	384	3,808	12,023	26,369
Agriculture	7,545	5	2	0	2,332	9,884
Other	0	0	16	0	113	129
<b>Total</b>	<b>543,795</b>	<b>93,935</b>	<b>4,460</b>	<b>60,982</b>	<b>116,689</b>	<b>819,861</b>

Note: The item Other includes such collateral as financial claims, invoices, liquid assets, vehicles, machines, aircraft and inventories.

improved financial position of the Group's borrowers and, in part, also due to the Group's continued emphasis on reacting before default occurs. Customers in default represented 2% in year end 2017.

At the same time, the portfolio quality improved slightly during the year, resulting in an exposure-weighted average probability of default of 2.3% (discussed further in section 5.2.3).

#### 4.2.2 Risk concentration

Concentration risk includes (i) single name concentrations of large (connected) individual counterparties and (ii) significant exposures to groups of counterparties whose likelihood of default is driven by common underlying factors, e.g. sector, economy, geographical location, instrument type or other.

Limit management for single name and segment concentrations is set, monitored and managed through the Group's risk appetite and its limit management structure. The Group's risk profile for concentration risks is reported monthly to the Risk & Finance Committee and the Board of Directors according to internal guidelines.

The Group uses the identification of risk concentrations in the credit portfolio as a credit risk management parameter. Risk concentrations arise in the credit portfolio as an inevitable conse-

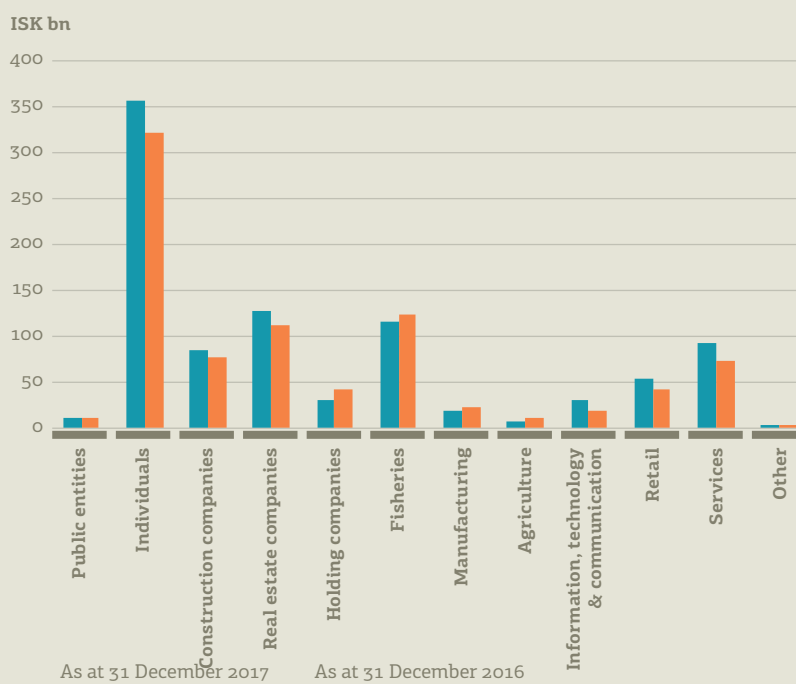
**Large exposures between 10% and 20% of the Group's eligible capital**

Figure 4-6



**Industry segmentation of credit exposure**

Figure 4-7



quence of the Group's business strategy. Concentration risk is credit risk related to the degree of diversification in the credit portfolio and includes both single name concentration risk and segment concentration risk.

According to rules on large exposures by exposures to a single customer or a group of related customers – after the deduction of particularly secure claims – may not exceed 25% of the capital base.

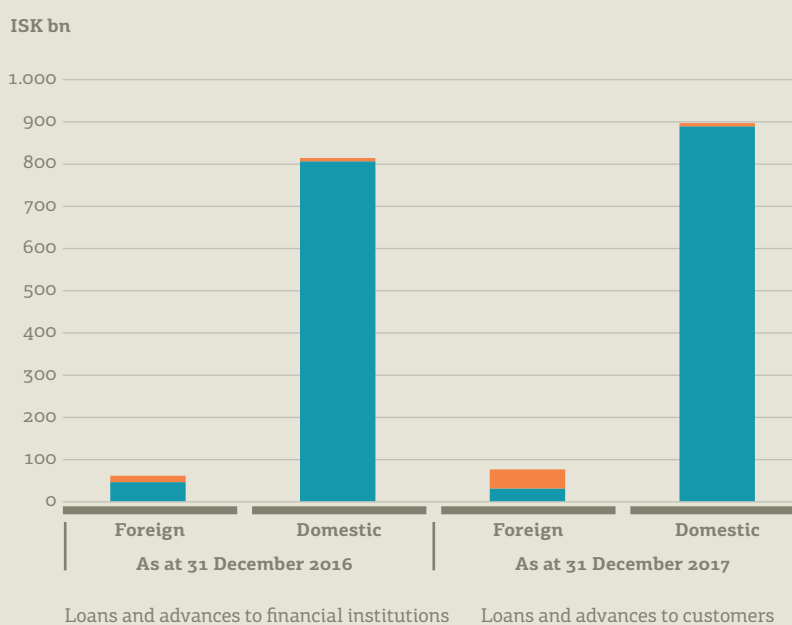
The Group's risk profile for large exposures is reported monthly to management and the Board of Directors according to internal guidelines.

As for single name concentration the Group's Board of Directors sets portfolio limits for segment concentration in the Group's risk appetite.

It is a logical consequence of the Group's business model that credit exposure from lending activities is concentrated to some industries. At the end of 2017, lending to individuals represented 38% of the Group's total credit exposure (year-end 2016: 38%). Most of the demand from individuals is for property financing and the Group's lending to retail

## Loans and advances by geographical area

Figure 4-8



customers is therefore mostly secured on real estate.

The Group's credit exposures are primarily to Icelandic corporate customers. Real estate companies, fisheries companies and service companies represent the largest exposure to single industry sectors.

Customers domiciled in Iceland accounted for 96% of the Group's total credit exposure in 2017 (2016: 95%). Exposure to foreign

counterparties relates mainly to the management of the Group's foreign liquidity reserves.

### 4.2.3 Migration analysis

Migration analysis in this section is based on the Group's rating scale and PD estimates. At the end of 2017, the average exposure-weighted PD was 2.3% (2016: 2.5%). Excluding loans to financial institutions, which as mentioned above relates to the management of the Group's foreign liquidity

reserves, the exposure-weighted PD was 2.4% (2016: 2.5%).

The overall credit quality of the loan portfolio improved slightly in 2017, mostly driven by positive migration in the individuals-

portfolio. The Group, however, experienced both positive and negative migration within different industry sectors in 2017. A slightly increased average probability of default in the corporate portfolio is due, to a large

extent to the significant increase within the fisheries industry. The increase in the sector is due to lower credit ratings of limited number of customers with relatively large credit exposures rather than being representative

#### Probability of default (PD )

Table 4-5

(%)	As at 31 December 2017	As at 31 December 2016
Financial institutions	0.1%	0.2%
Public entities	0.1%	0.2%
Individuals	2.6%	3.2%
Corporates	3.0%	2.8%
Construction companies	3.3%	3.2%
Real estate companies	2.8%	3.4%
Holding companies	2.9%	3.7%
Fisheries	2.4%	1.7%
Manufacturing	3.1%	2.1%
Agriculture	2.2%	5.0%
Information, technology & communication	2.3%	1.2%
Retail	2.6%	1.9%
Services	3.8%	3.4%
Other	3.0%	4.5%
<b>Total</b>	<b>2.3%</b>	<b>2.5%</b>

of a lower quality in the sector's loan portfolio in general. Where improvement was seen, as for example in the real estate sector which is the largest industry sector in the portfolio, underlying drivers include improved borrower operating performance, debt restructurings, customers

with poor credit rating leaving the Group and bankruptcy resolutions. Furthermore, new exposures to highly rated customers have positive impact on the credit quality of the portfolio as a whole, and as mentioned before, improved credit quality in the individuals-portfolio contributes

significantly to lower probability of default in the loan portfolio.

Figures 4-9 and 4-10 show the rating grade distribution of the loan portfolio broken down by individuals and corporates.

Figure 4-9

### Rating grade distribution - Corporates

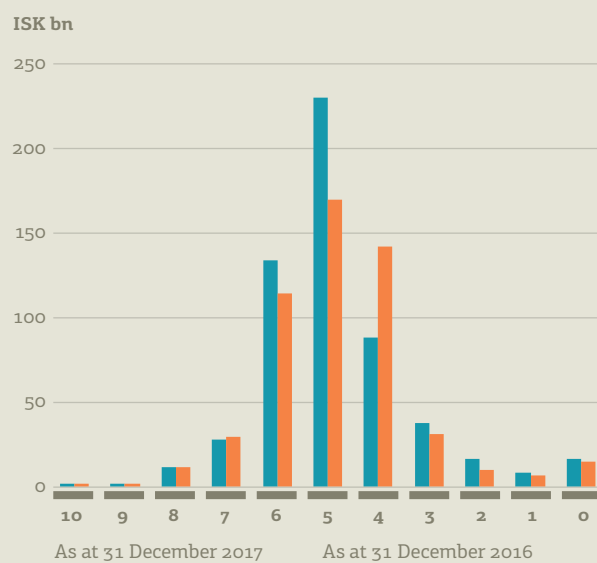


Figure 4-10

### Rating grade distribution - Individuals

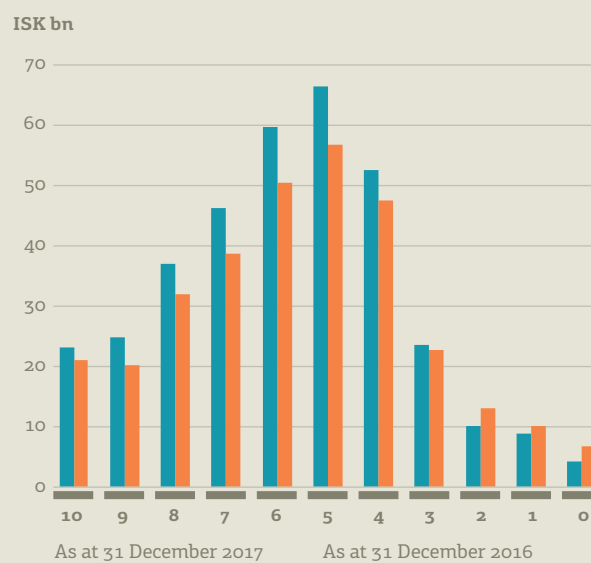


Figure 4-11

## Rating migration of corporates in 2017

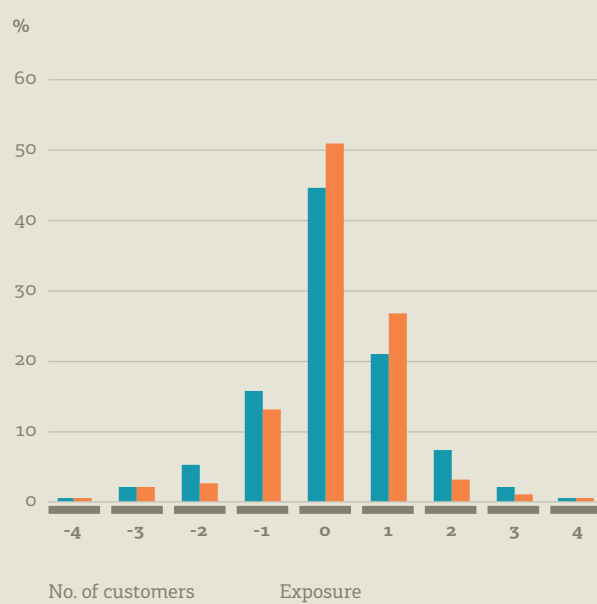
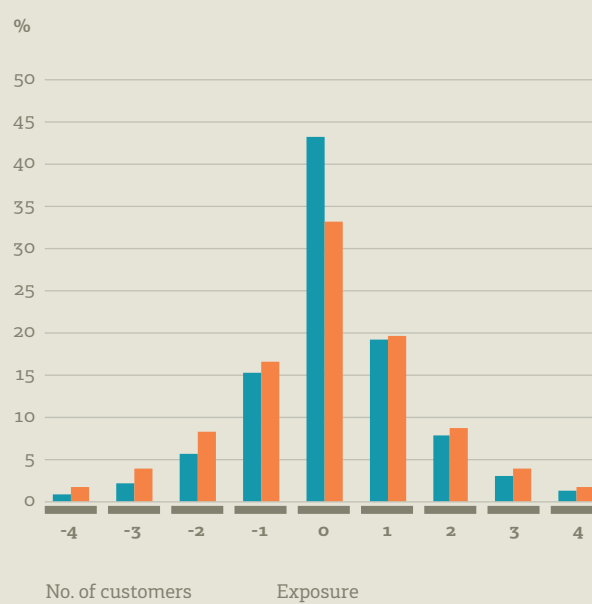
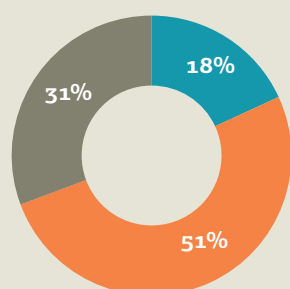


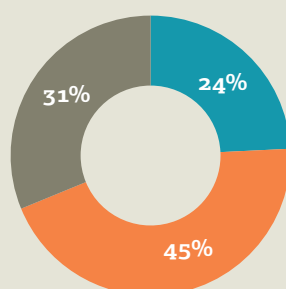
Figure 4-12

## Rating migration of individuals in 2017

Rating migration of corporates in 2017  
Carrying amount

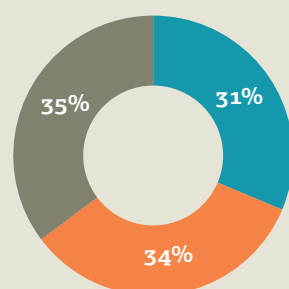
Downgrades  
Unchanged  
Upgrades

Figure 4-13

Rating migration of corporates in 2017  
No. of customers

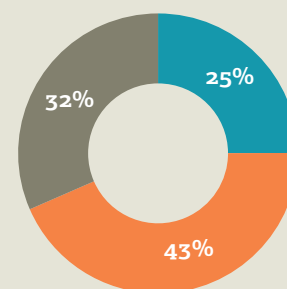
Downgrades  
Unchanged  
Upgrades

Figure 4-14

Rating migration of individuals in 2017  
Carrying amount

Downgrades  
Unchanged  
Upgrades

Figure 4-15

Rating migration of individuals in 2017  
No. of customers

Downgrades  
Unchanged  
Upgrades

Figure 4-16

Figures 4.11 to 4.16 show the rating grade migration for corporates and individuals during 2017, based on existing customers at year-end 2016 and 2017.

Migration is shown both in terms of number of customers and exposure. Migration analysis does not cover customers in default, i.e., customers in rating category o.

Out of the total exposure in the corporate portfolio, approximately 49% migrated up or down during 2017. This corresponds to 55% of counterparties. Upward migration was significantly higher than downward migration during 2017 with 31% of corporate exposure moving to higher rating grades.

In the individuals portfolio, approximately 67% migrated either up or down in 2017 with respect to exposure and 56% in terms of customer numbers.

On an overall level, migration had a positive impact on credit risk economic capital during 2017 and reduced IRB credit risk economic capital for corporates.



The rating and risk grade distribution changes mainly due to three factors: Changes in rating grade for existing customers, or pure migration; different rating grade distribution of new customers and customers leaving the Group, compared to the rating grade distribution of existing customers during the comparison period; and, increased or decreased exposure per rating grade to existing customers.

Altogether, the percentage of upgrades was higher than the percentage of downgrades both in the corporate and individual segment. At the end of 2017, the average exposure-weighted PD for corporate customers was 3.0% (2016: 2.8%). For individuals, the average exposure-weighted PD was 2.6% (2016: 3.2%). As mentioned before positive developments in the individual sector and real estate companies have

the largest impact of decrease to the measurement value.

The default rate, which is measured by number of customers and not exposure, for corporate customers for 2017, was 2.5% as compared to the predicted 4.8%. No corporate customers in rating grades 7, 8, 9 and 10 defaulted. The default rate of individuals for 2017 was 1.4% as compared to the predicted 2.4%. For individual rat-

Figure 4-17

#### 12 month default rate vs. probability of default band - Corporates 2017

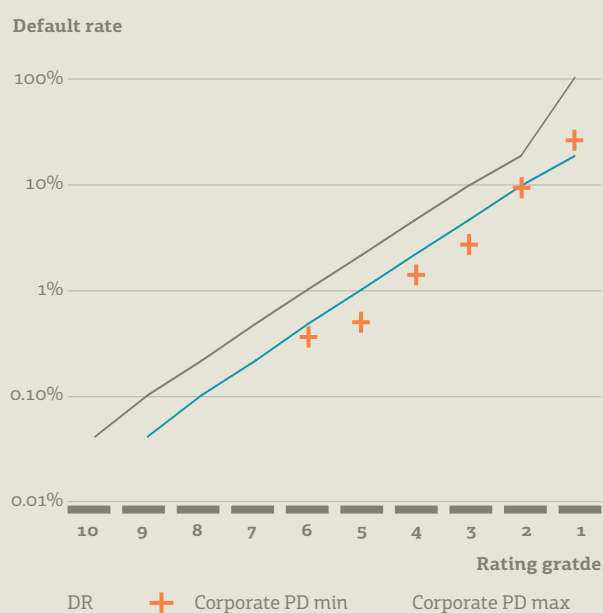
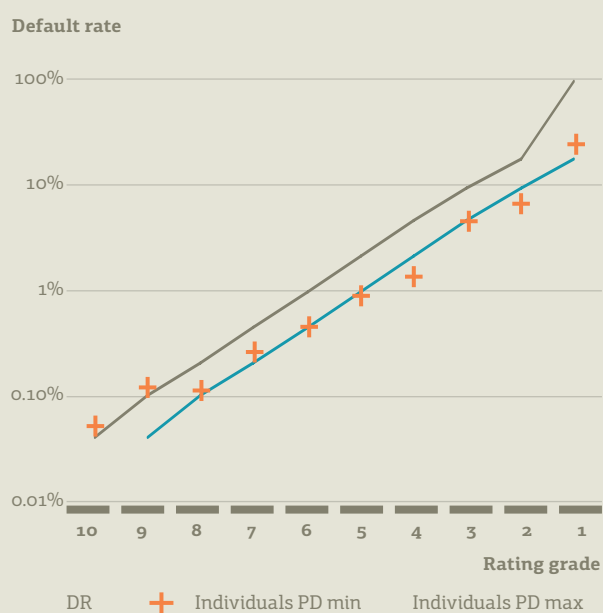


Figure 4-18

#### 12 month default rate vs. probability of default band - Individuals 2017



ing grades, the default rate was in coherence with what was expected, except for grades 9 and 10.

#### 4.2.4 Loan impairment

Total allowance for impairment totalled ISK 16 billion in 2017,

as compared to ISK 21 billion in 2016. Allowances decreased in nearly all industry sectors during 2017 while the overall carrying amount increased. The decrease in allowances is mainly due to written-off loans, improved collaterals and lower past due rate.

At the end of 2017, 95% of the portfolio consisted of claims that were neither past due nor impaired. The accumulated impairment amounted to ISK 6 billion.

Impaired loans gross decreased by 18% during the year to reach

### Loan impairment

Table 4-6

	Individual allowance	Collective allowance	Total
Open 1.1.2017	-16,928	-4,023	-20,951
New provisions	-3,668	-13	-3,681
Reversals	3,665	0	3,665
Provisions used to cover write-offs	4,777	0	4,777
Closing 31.12.2017	-12,154	-4,036	-16,190

	Individual allowance	Collective allowance	Total
Open 1.1.2016	-28,200	-5,457	-33,656
New provisions	-4,677	0	-4,677
Reversals	8,469	1,434	9,903
Provisions used to cover write-offs	7,479	0	7,479
Closing 31.12.2016	-16,928	-4,023	-20,951

Table 4-7

1.1.-31.12.2017			
Impairment loss	Customers	Financials	Total
New provisions	-3,681	0	-3,681
Write-offs	-6,270	0	-6,270
Provisions used to cover write-offs	4,777	0	4,777
Reversals	3,665	0	3,665
Recoveries	1,815	0	1,815
Translation difference	101	0	101
Impairment loss for the period	506	0	506
Impairment of claims reversed			
Net impairment loss for the period	<b>506</b>	<b>0</b>	<b>506</b>

1.1.-31.12.2016			
Impairment loss	Customers	Financials	Total
New provisions	-4,677	0	-4,677
Write-offs	-9,660	0	-9,660
Provisions used to cover write-offs	7,479	0	7,479
Reversals	9,903	0	9,903
Recoveries	2,208	0	2,208
Translation difference	0	0	0
Impairment loss for the period	5,253		5,253
Impairment of claims reversed		-225	-225
Net impairment loss for the period	<b>5,253</b>	<b>-225</b>	<b>5,028</b>

ISK 28 billion. This corresponds to 3.0% of total loans excluding financial institutions (2016: 3.9%). The decrease in impaired loans was mainly related to improved credit quality in the household sector which saw a decrease of ISK 4 billion and a decrease of ISK 3 billion was seen in the Service companies industry, as well.

Impaired loans net, after allowances for individually assessed impaired loans, decreased to ISK 16 billion, corresponding to 1.7% of total loans. Allowances for individually assessed loans

decreased by ISK 5 billion, to ISK 12 billion, and collectively assessed loans remained at ISK 4 billion. The ratio of individual allowances for impaired loans reduced to 44% (2016: 50%) and total allowances in relation to impaired loans decreased as well to 58% (2016: 62%).

IFRS 9 will replace the earlier accounting standard for financial instruments, IAS 39, when it becomes effective in 2018. IFRS 9 is a mandatory regulatory change which addresses the accounting for financial instruments and contains three main topics: clas-

sification and measurement of financial instruments, impairment of financial assets and hedge accounting. It creates significant challenges for banks due to its material financial impact and very high complexity of implementation. The effective date has been set at 1st January 2018. The Group is prepared for the regulatory change and has developed models and calculations which are fully compliant with the IFRS 9 accounting requirements and related prudential regulation. A parallel run was carried through within the Group throughout 2017. For further details on the

## Impaired loans split by industry sectors

Table 4-8

As at 31 December 2017	Gross carrying amount	Carrying amount	Impaired loans before allowances	Impaired loans in % of loans	Collective allowance	Individual allowance	Total provisioning ratio
Financial institutions	44,866	44,866	-	0.0%	-	-	-
Public entities	11,345	11,243	135	1.2%	56	46	75.6%
Individuals	359,917	356,940	4,965	1.4%	1,076	1,901	60.0%
Corporates	570,564	557,453	22,741	4.0%	2,905	10,206	57.7%
Fisheries	115,045	114,354	783	0.7%	357	334	88.2%
Construction companies	81,954	80,067	2,025	2.5%	643	1,243	93.1%
Real estate companies	124,986	123,483	3,751	3.0%	548	954	40.1%
Holding companies	26,179	25,943	138	0.5%	142	94	171.6%
Retail	53,078	52,363	1,537	2.9%	225	490	46.5%
Services	106,381	103,706	5,760	5.4%	522	2,153	46.4%
Information, technology and communication	32,066	31,624	82	0.3%	374	69	539.0%
Manufacturing	22,024	17,185	8,209	37.3%	73	4,766	59.0%
Agriculture	8,849	8,726	456	5.2%	20	103	27.0%
Other	1	1	-	0.0%	0	-	-
<b>Total</b>	<b>986,692</b>	<b>970,502</b>	<b>27,840</b>	<b>2.8%</b>	<b>4,037</b>	<b>12,153</b>	<b>58.2%</b>

As at 31 December 2016	Gross carrying amount	Carrying amount	Impaired loans before allowances	Impaired loans in % of loans	Collective allowance	Individual allowance	Total provisioning ratio
Financial institutions	20,408	20,408	-	0.0%	-	-	-
Public entities	10,028	9,783	464	4.6%	48	198	52.9%
Individuals	326,844	320,690	9,229	2.8%	1,499	4,655	66.7%
Corporates	537,496	522,944	24,356	4.5%	2,476	12,076	59.7%
Fisheries	124,094	123,626	779	0.6%	145	322	60.0%
Construction companies	76,897	74,963	2,095	2.7%	537	1,397	92.3%
Real estate companies	115,922	113,364	4,195	3.6%	667	1,891	61.0%
Holding companies	41,148	40,490	644	1.6%	251	408	102.2%
Retail	43,436	42,235	1,806	4.2%	224	977	66.5%
Services	80,833	74,743	9,072	11.2%	401	5,690	67.1%
Information, technology and communication	19,383	19,220	77	0.4%	115	49	213.0%
Manufacturing	25,535	24,167	5,606	22.0%	91	1,277	24.4%
Agriculture	10,247	10,135	84	0.8%	45	68	133.8%
Other	1	1	-	0.0%	0	-	-
<b>Total</b>	<b>894,776</b>	<b>873,826</b>	<b>34,050</b>	<b>3.8%</b>	<b>4,023</b>	<b>16,927</b>	<b>61.5%</b>

IFRS 9 implementation, see the Group's 2017 Consolidated Financial Statements, note 92.42.

#### 4.2.5 Forbearance

The Group adopts forbearance plans to assist customers in financial difficulty. Concessions granted to customers include interest-reduction schedules, interest-only schedules, temporary payment holidays, term extensions, cancelation of outstanding fees and settlements.

Forbearance plans must comply with the Group's Credit Policy. They are used as an instrument to maintain long-term customer relationship during economic

downturns if there is a realistic possibility that the customer will be able to meet obligations again and are used for minimising loss in the event of default.

The Group has implemented the European Banking Authority's (the EBA's) definition of loans subject to forbearance measures. Table 4-9 is based on the EBA's definition, which states that a minimum two-year probation period must pass from the date forborne exposures are considered to be performing again. Such exposures are included in the Under Probation category. Exposures with forbearance measures are divided into performing and non-performing loans.

#### 4.2.6 Credit risk analysis by industry sectors

This section describes developments in credit quality in selected segments of the Group's lending portfolio in the year 2017.

##### 4.2.6.1 Fisheries

Appreciation of the ISK continued to put pressure on the fisheries and seafood industry in 2017, with the ISK exchange rate index gaining 12.2% during the year. The CBI has calculated and published trade-weighted exchange rate indices since 1991 and this increase is unprecedented. The closest the ISK has come to this rate of appreciation before was

#### Exposures subject to forbearance measures

Table 4-9

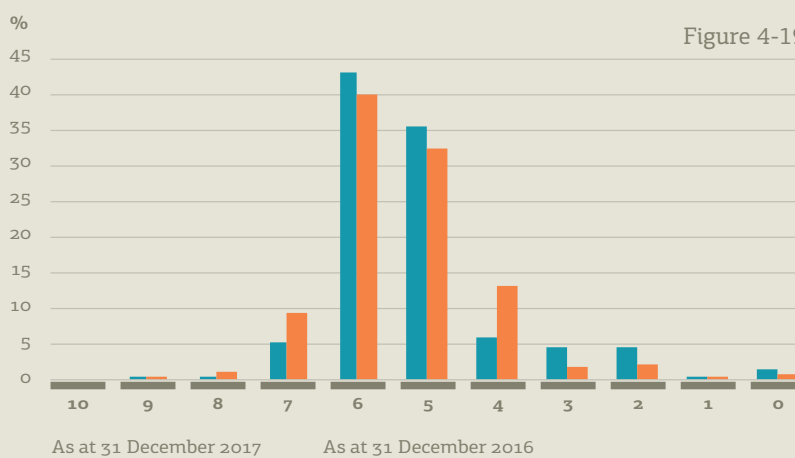
(ISK millions)	31.12.2017		31.12.2016	
	Performing	Non-performing	Performing	Non-performing
Modification	13,168	13,702	11,718	15,592
Refinancing	22,464	6,590	16,546	861
- of which: Under probation	451	0	4,612	0
<b>Total</b>	<b>35,632</b>	<b>20,292</b>	<b>28,264</b>	<b>16,453</b>

in 2016, when the index grew by 11.8%. Last year was the fifth consecutive year of YoY growth in the index and this consistent and considerable appreciation is almost entirely the result of exponential growth in the Icelandic travel industry in recent years. The ISK has appreciated by 38% in these past 5 years.

The real exchange rate of the ISK was 99.8 points last year, the highest it has been since 2005, when it peaked at 100.1 points. Going back to the year 1980, the real exchange rate in 2017 was the fourth highest ever measured. The real exchange rate was strongest in 1988, or 100.8 points, which means that last year's real exchange rate was only 1% away from being the highest measured since 1980.

Export of marine products amounted to ISK 183.3 billion in the first 11 months of 2017, contracting by ISK 33.9 billion as compared to the same period in 2016, or by 15.6%. This contraction is due mostly to the aforementioned appreciation of the ISK. The fishermen's strike was also a factor, lasting until mid-February of 2017. A look at the decline in export by species of fish at a fixed exchange rate shows that lower cod exports affected the outcome the most, with cod exports contracting by ISK 5.4 billion, or 63% of the total contrac-

## Loans and advances to fisheries sector per rating grade



tion in marine product exports at a fixed exchange rate. The fishermen's strike accounts for a good deal of this contraction. The best indicator is that cod fisheries increased by 10% in March-December of 2017 as compared with the same period in 2016. Despite that increase, the total catch of cod contracted by 4.4% between years due to the smaller catch of January and February.

Counteracting the strong ISK and other factors that decreased export income was the price increase of marine products in foreign currency. The average price of Icelandic marine products in foreign currency was 5.8% higher during the first 11 months of 2017 as compared to the same period in 2016. November prices reached a record high,

with the index from Statistics Iceland going back to January 2006. The price index of demersal catch was 6% higher during the first 11 months of 2017 as compared with the same period in 2016, with the price index for pelagics being 4.4% higher.

Oil has long been one of the largest expense items for Icelandic fishing and seafood processing companies. World oil prices bottomed out temporarily in June of 2017 and have since been rising steadily. The average barrel price of North Sea oil was USD 65 in December and has not been as high since November 2014. At that time, oil price was falling at the fastest pace - it was USD 114 per barrel in June 2014. Last year, the average price was 25% higher than in 2016.



Table 4-10

Fisheries ISK m	As at 31 December 2017	As at 31 December 2016
Gross carrying amount	115,045	124,094
Performing - Individual allowance	-230	-71
Non-performing - Individual allowance	-104	-250
Collective allowance	-357	-145
Carrying amount	114,354	123,627

Loans and advances to customers in the fisheries industry amounted to ISK 114 billion as at 31 December 2017 (2016: ISK 124 billion). Credit exposure to the sector represented 12% of the Group's loan portfolio.

Impaired exposure in the sector amounts to ISK 0.8 billion and the amount of not individually impaired loans is ISK 114 billion. The collective allowance is ISK 0.4 billion.

At the end of 2017, the loans and advances to fisheries customers in rating grades 4 and higher represented 89% of the total compared to 95% in 2016.

The sector's average exposure-weighted PD was 2.4% as at 31 December 2017 and increased significantly during the year. The increase is as mentioned before due to negative migration of limited number of customers with relatively large credit exposures.

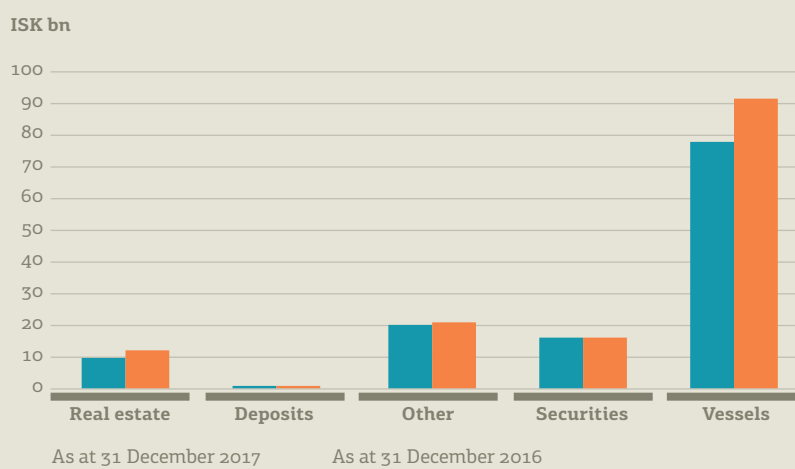
Credit extended by the Group to the fisheries industry is mainly secured by transport and fishing vessels together with their non-transferable fishing quotas, or 63% of the total sector's collateral.

#### 4.2.6.2 Real estate companies

In 2017 real estate companies witnessed continued favourable

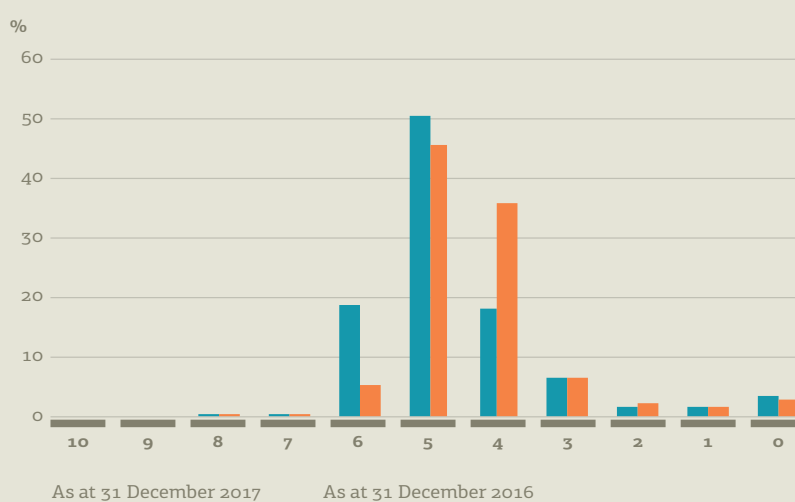
### Fisheries - Collateral types

Figure 4-20



### Loans and advances to Construction and real estate sector per rating grade

Figure 4-21



developments in market conditions in terms of housing prices.

While purchasing power has seldom increased faster than in

recent years, real estate prices have risen even faster. A look at 2017 shows that the real price of real estate rose by over 20% while purchasing power has

grown by 5-6%. This comparison shows that real estate prices have far outstripped this underlying factor.

The number of transactions involving residential housing has fluctuated significantly in recent months. The number of transactions involving multi-family dwellings has been declining since November of 2016, albeit not uninterruptedly. A review of transaction numbers over a longer period shows fairly clearly that the period of continuous YoY growth has passed, at least for now.

For multi-family dwellings, prices rose by 18.6% between 2016 and 2017. The wave of rising prices seems to be abating.

Apartments for sale in the capital region grew more numerous in 2017, following a near continuous decline in 2015 and 2016. The current volume is now approaching the levels seen in the latter half of 2015. The sale process duration for real estate has grown longer. Data on apartment transactions over the past two years reveals that new apartments are generally both larger and have a higher per square meter price tag than older apartments. The unit price of new apartments is thus significantly higher than on older ones. As a result, an increased supply of new apartments is likely to contribute to higher prices, other things equal.

## Construction and real estate sector - Collateral types

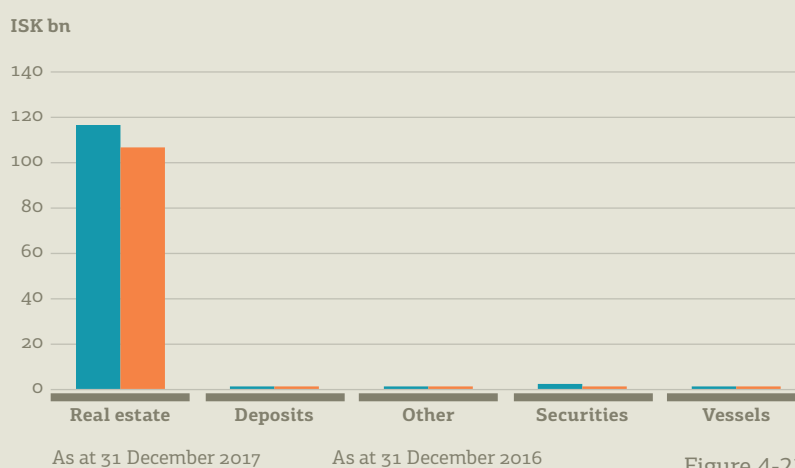


Figure 4-22

It is generally accepted that the market demand for new apartments in the capital region lies between 1,800-2,000 apartments in an average year; the need is now higher due to accumulated demand. New apartments sold in the capital region each year are remarkably few. According to initial figures from Statistics Iceland, investment in residential housing increased by 28.6% between H1 of 2016 and 2017; the increase between Q1 and Q2 of 2017 was 4.7%.

Loans and advances to customers in the real estate industry amounted to ISK 126 billion as at 31 December 2017 (2016: ISK 113 billion). Credit exposure to the sector represented 14% of the Group's loan portfolio.

Impaired exposure in the sector amounts to ISK 3.7 billion and the amount of not individually impaired loans is ISK 124 billion. The collective allowance is ISK 0.6 billion.

Positive developments and improvement in the sector's credit quality can both be seen in a significant migration from the lowest rating grades, 1 and 2 to higher ones as well as increased exposure in rating grades 5 and 6.

The sector's average exposure-weighted PD was 2.8% as at 31 December 2017 and improved significantly during the year.

Credit extended by the Group to real estate companies is well secured, mainly on real estate, or 97% of the total sector's collateral.

Table 4-11

Real estate companies	As at 31 December 2017	As at 31 December 2016
Gross carrying amount	124,986	115,922
Performing - Individual allowance	-624	-817
Non-performing - Individual allowance	-330	-1,074
Collective allowance	-548	-667
Carrying amount	123,483	113,364

#### 4.2.6.3 Tourism industry

The importance of tourism in Icelandic economy has accelerated rapidly over recent years, and the sector now represents the country's largest export business. The development in Iceland is in fact unique compared to international development. In 2016, tourism accounted for 39% of the total country's exports compared to just over 7% world-wide.

The increase in tourism in recent years has repeatedly exceeded the most optimistic forecasts, as it has proved impossible to fully explain the growth with traditional statistical and economic models. It is clear, therefore, that all future forecasts are subject to great uncertainty.

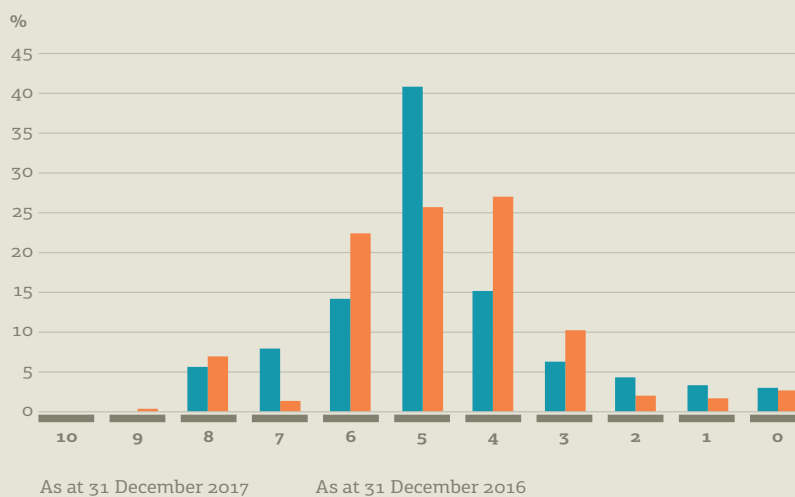
Nevertheless, the economic impact of tourism in Iceland has gone from being only relatively small to be very important for economic growth, job creation, exchange rate developments, inflation and thus purchasing power and living conditions of Icelandic households.

The Group's sector classification does not include the tourism sector specially but most of the loans to tourism are classified as service companies. Loans to service companies represent 11% of the Bank's total loan portfolio, thereof are 8% to tourism and 3% to other service companies.

Loans and advances to customers in the tourism industry

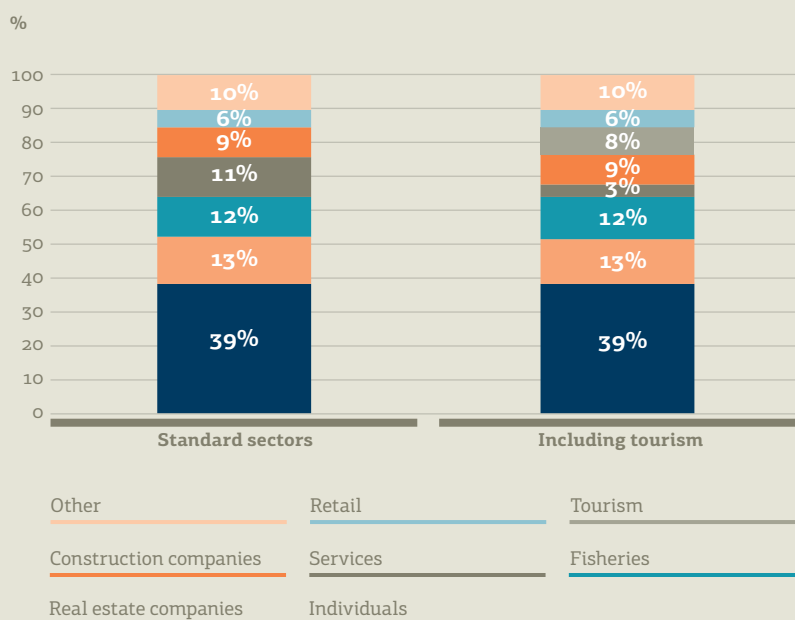
#### Loans and advances to tourism sector per rating grade

Figure 4-23



#### Loans and advances to customers by industry sector

Figure 4-24



amounted to ISK 75 billion as at 31 December 2017 (2016: ISK 64 billion) which is an increase

of over 18%. By comparison, the number of tourists increased by 24% in 2017.



# 5 Market risk

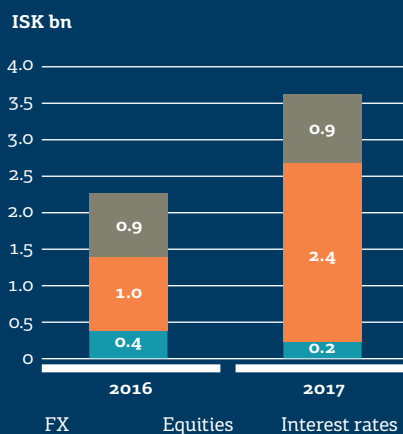
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# Market risk

**Market risk is the risk that changes in market prices will adversely impact the fair value or future cash flows of financial instruments. Market risk arises from open positions in currency, equities and interest rate products, all of which are exposed to general and specific market movements and changing volatility levels in market rates and prices, for instance in interest rates, inflation, foreign exchange rates and equity prices.**

- » The Group's market risk remained relatively stable in 2017 and well within the Group's risk appetite, in spite of increasing volatility in the market;
- » Total market risk in the Group's trading book together with foreign exchange risk, as measured by economic capital, was ISK 3.7 billion at year-end 2017 compared to ISK 2.3 billion at the end of 2016. The increase in market risk EC is first and foremost due to updated methodology in calculating equity price risk in the trading book;
- » The majority of the Group's exposures that entail market risk consists of equities and equity derivatives, bonds and fixed income products and open currency positions.

## Economic capital



## 5.1 Market risk management and policy

The Board of Directors is responsible for determining the Group's market risk appetite and the Risk & Finance Committee is responsible for developing detailed market risk management policies and setting market risk limits. Market risk is managed centrally by Treasury as well as within trading units, in accordance with

the Group's policies, limits and risk appetite. The objective of market risk management is to identify, locate and monitor market risk exposures and analyse and report them to appropriate parties. Together, the risk appetite of the Bank and the market risk policies set the overall limits for market risk management within the Group in accordance with the Group's three lines of defence principle.

The Group separates its exposure to market risk into trading and non-trading portfolios, managing each separately. Trading portfolios include positions arising from market-making, hedges for derivative sales and proprietary position-taking. Non-trading portfolios include positions arising from the Group's retail and commercial banking operations, proprietary position-taking as part of asset and liability management and funding transactions,

## Total net exposure subject to market risk

Table 5-1

	Net position at year-end	
	2017	2016
Equities and equity instruments in the trading book	4,927	4,420
Bonds and debt instruments in the trading book	6,129	8,569
FX balance	3,988	3,480

managed by Treasury. Treasury is also responsible for daily liquidity management, which includes exposure to market risk.

Market risk mitigation is reflected in the Group's overall risk appetite by identifying the target level and strategy of market risk factors. Other market risk mitigation plans are made on a case-by-case basis and involve hedging strategies and risk reduction through diversification.

### 5.2 Control and monitoring

The aim of the market risk management process is to quickly detect and correct deficiencies in compliance to policies, processes and procedures. The Group monitors early indicators that can provide warning of an increased risk of future losses. Market risk

indicators need to be concise, reported in a timely manner, give clear signals and highlight portfolio risk concentrations and reflect current risk positions. Risk reports show the Group's total risk in addition to summarizing risk concentration in different business units and asset classes as well as across other attributes, as appropriate, pursuant to the Group's activities.

Market risk arising from trading and non-trading activities is measured, monitored and reported on a daily, weekly and monthly basis. The market risk limits set by the Risk & Finance Committee are monitored by Market Risk and all exceptions and breaches of limits are reported on a regular basis to the Risk & Finance Committee and other relevant parties as necessary. Furthermore, summarized reports highlighting market risk, risk appetite

measurements and any concerns regarding market risk are sent to the Board of Directors on a regular basis.

### 5.3 Market risk exposure

Table 5-1 summarizes the Group's exposure to market risk at year-end 2017.

The Group also faces counterparty credit risk arising from derivative contracts with customers and financial institutions. Counterparty credit risk is, however, very low compared to other credit risk and is mitigated through strict collateral requirements and limits. Further information about the Group's exposure to counterparty credit risk can be found in the additional disclosures accompanying this document (see also 4.1.4.1).



## Total market risk (REA measure) at year-end

Table 5-2

	2017		2016	
	REA	Ratio to REA	REA	Ratio to REA
Equity price risk in the trading book	10,117	1.1%	8,889	1.1%
Interest rate risk in the trading book	2,388	0.3%	3,456	0.4%
Foreign exchange risk	4,594	0.5%	4,174	0.5%
CVA risk	565	0.1%		
<b>Total</b>	<b>17,664</b>	<b>1.9%</b>	<b>16,519</b>	<b>2.0%</b>

### 5.3.1 Banking book exposures

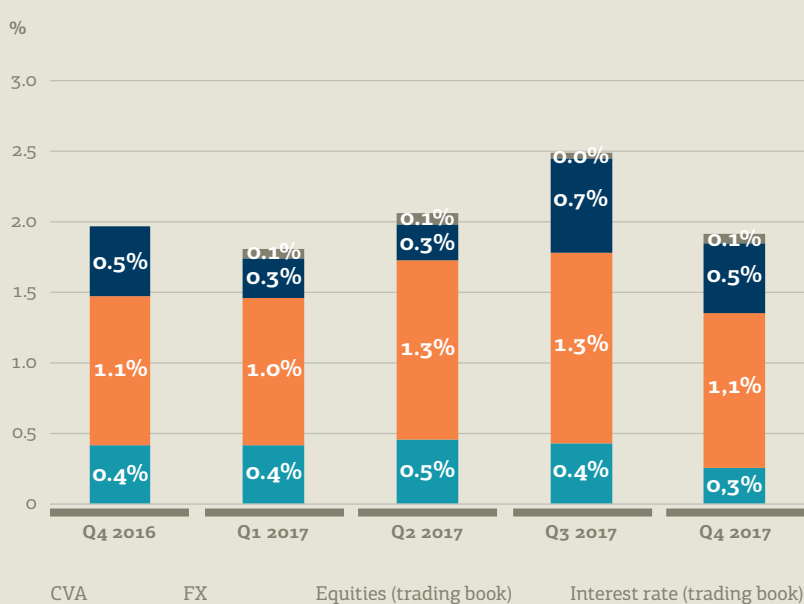
The banking book exposures of the Group pertaining to market risk are exposures in equities and bonds. The vast majority of the equities are unlisted and are, for the most part, legacy positions obtained through corporate restructuring or acquired when the Bank was established in 2008. The bond holdings in the banking book are comprised of strategic investments and liquidity management instruments. Capital reserved against these exposures is classified as credit risk.

## 5.4 Measuring market risk

The Bank uses risk exposure amounts (REA) and economic capital (EC) as a common denominator for measuring risk across different asset classes, including those assets subject to market risk. Risk exposure amounts are determined by applying specific risk weights to the Group's assets, according to capital requirement regulations. Several other indicators are used as measures of market risk as well, including Value-at-Risk (VaR), daily profits and losses, delta positions and net positions across different attributes such as the currency and issuer. These risk measurements

## Total market risk (Ratio to total REA)

Figure 5-1



are supplemented by specific stress tests and scenario analysis as appropriate, taking the Group's balance sheet composition and operating environment into account.

Total market risk, measured as ratio of risk exposure amounts to total REA, is considered modest, amounting to 1.9% at year-end 2017 (compared to 2.0% at year-end 2016), well within the Group's market risk appetite.

### 5.4.1 Equity price risk in the trading book

Equity price risk is the risk of equity value fluctuations due to open positions in equity-based instruments. The Group's equity trading portfolio is comprised of proprietary trading positions and exposures due to market making, including equity derivatives and hedging positions. Equity-based derivative contracts are usually fully hedged with regards to market risk and are subject to various limit requirements.

### 5.4.2 Interest rate risk in the trading book

Interest rate risk is the risk of loss arising from the impact of adverse changes in market interest rates. The Group's trading portfolios contain exposures due to market making and proprietary trading, highly concentrated on government-guaranteed bills/bonds as well as covered bonds and fixed income derivatives. As

with equity-based derivatives, fixed income derivative contracts are usually fully hedged with regards to market risk and are subject to strict limit requirements.

### 5.4.3 Interest rate risk in the banking book

Interest rate risk in the banking book is the current or prospective risk to earnings and capital arising

from adverse movements in interest rates. Changes in interest rates on the Group's assets and liabilities impact its interest rate margin and/or the value of its shareholders' equity. This risk is primarily the result of duration mismatch of assets and liabilities. Net positions of assets and liabilities in the banking book by interest rate fixing period, at year-end 2017 and 2016, are shown in Table 5-3.

**Assets and liabilities in the banking book by interest rate fixing period**

Table 5-3

Net position at year-end 2017					
	Up to 3 M	3-12 M	1-5 Y	Over 5 Y	Total
Total assets	941,499	72,519	68,081	68,267	1,050,366
Total liabilities	-666,949	-24,776	-162,400	-74,119	-928,244
Net on-balance sheet position	274,550	47,743	-94,319	-5,852	222,122
Effect of derivatives held for risk management	-41,066	-37,275	41,066	37,275	0
Net off-balance sheet position	0	0	0	0	0
<b>Total interest repricing gap</b>	<b>233,484</b>	<b>10,468</b>	<b>-53,252</b>	<b>31,423</b>	<b>222,123</b>
Net position at year-end 2016					
	Up to 3 M	3-12 M	1-5 Y	Over 5 Y	Total
Total assets	813,323	104,901	88,204	59,757	1,066,185
Total liabilities	-691,128	-19,198	-111,376	-21,383	-843,085
Net on-balance sheet position	122,195	85,703	-23,172	38,374	223,100
Net off-balance sheet position	153	-153	0	0	0
<b>Total interest repricing gap</b>	<b>122,348</b>	<b>85,550</b>	<b>-23,172</b>	<b>38,374</b>	<b>223,100</b>

## Interest rate risk (fair value sensitivity) in the banking book at year-end

Table 5-4

	2017		2016	
	+100 bps	-100 bps	+100 bps	-100 bps
ISK non-indexed	122	-126	102	-112
ISK indexed	-4,081	5,137	-5,235	6,189
EUR	2,004	-2,061	2,771	-2,881
USD	-64	65	-146	147
GBP	0	0	1	-1
JPY	-4	4	-6	6
CHF	-5	5	-6	6
Other	320	-328	367	-380
<b>Total</b>	<b>-1,708</b>	<b>2,696</b>	<b>-2,152</b>	<b>2,974</b>

The Group employs a monthly stress test of the interest rate risk in the banking book by measuring the impact of shifting the relevant interest rates for every currency on the fair value of all interest-rate sensitive assets and liabilities in the banking book. Table 5-4 summarizes the sensitivity of the Group's banking book fair value resulting from a flat 100 bps upward and downward shift of all yield curves at year-end:

### 5.4.4 Foreign exchange risk

Foreign exchange risk (FX risk) is the risk of adverse movements due to exchange rate fluctuations. Foreign exchange risk within the

Group may arise from holding assets in one currency and liabilities in another, or from a spot or forward foreign exchange trade, currency swaps or other currency

contracts which are not matched with an offsetting contract. The net FX balance at year-end 2017 can be seen in Table 5-5.

## Net FX balance

Table 5-5

	Net position at year-end	
	2017	2016
CHF	111	117
EUR	2,335	2,829
GBP	237	43
JPY	376	59
USD	502	309
Other	427	123
<b>Total</b>	<b>3,988</b>	<b>3,480</b>

### 5.4.5 Other market risk

Other market risk within the Group is comprised of inflation risk and risk due to credit valuation adjustment (CVA).

CVA is an adjustment to the fair value (or price) of derivative instruments to account for counterparty credit risk. The derivative contracts the Group enters into that entail CVA risk are well collateralized, reducing CVA risk. Hence, the Group's CVA risk is low and considered immaterial.

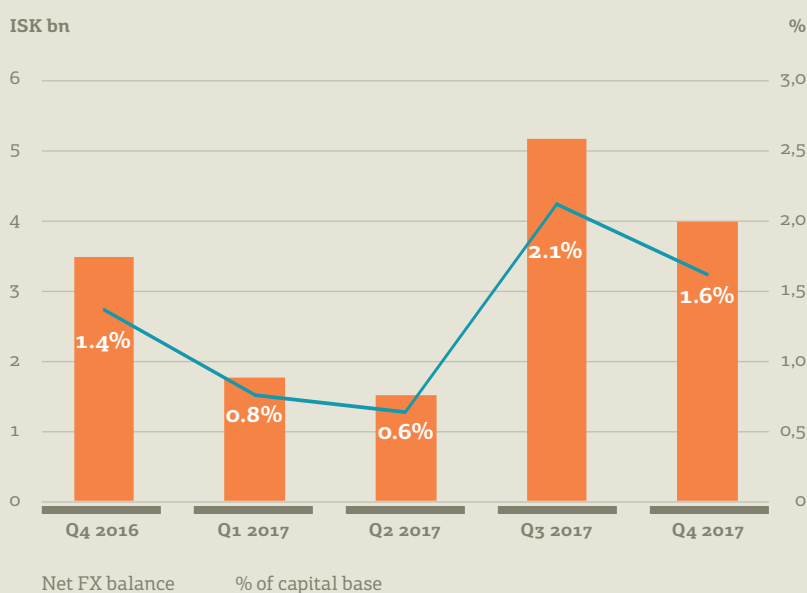
Inflation risk is the risk that the fair value or future cash flows of CPI-indexed financial instruments may fluctuate due to changes in the Icelandic CPI index. Mismatch between CPI-linked assets and liabilities exposes the Group to inflation risk. The Group's total CPI indexation balance at year-end 2017 amounted to ISK 222 billion as compared to ISK 207 billion at year-end 2016.

## 5.5 Stress testing and sensitivity analysis

The Group conducts stress tests and sensitivity analysis pertaining to market risk on a regular and ad-hoc basis. A comprehensive market risk stress testing is conducted as a part of the Group's ICAAP once a year with a time horizon of three years. Other stress tests and sensitivity analysis of the Group's trading and non-trading portfolios with

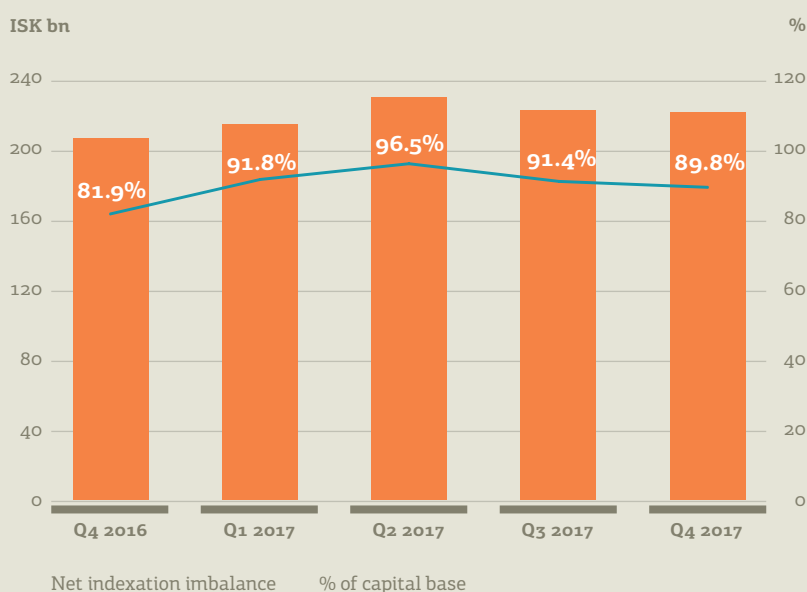
### Net FX balance

Figure 5-2



### Indexation imbalance

Figure 5-3



regards to equity and interest rate risk and currency risk are made on a case-by case basis. These stress tests are subjective and may pertain to specific portfolios, instruments or issuers and usually stem from concerns regarding the Bank's operating environment, economic conditions, portfolio composition or other matters relevant to the Group at the time.

Landsbankinn uses value-at-risk (VaR) and expected shortfall (ES) as a common ground for measuring market risk in different products. An internal VaR model is in place for the quantification of market risk and estimation of economic capital and the Group calculates daily VaR at the 99% confidence interval using at least one year of historical data. Both

parametric and historical VaR for the Group's trading books in equity, fixed income and FX are calculated and reported to relevant parties.

Back-testing is used to evaluate the quality of the Group's VaR model. Back-testing is done according to the Basel III market risk framework comparing the output of the model (i.e. VaR numbers) to actual and hypothetical P&L values ("hypothetical" means using changes in portfolio value that would occur if end-of-day positions were to remain unchanged). A period of one year is applied as a general reference.

It is important to note that all VaR models are subject to certain assumptions and approximations that may or may not hold in real-

ity and can have a major effect on the model outcomes. Limitations of VaR include, for example, the use of historical data as an indicator of future events, assumptions of being able to liquidate or hedge positions fully within the relevant time horizon and potential losses beyond the given confidence interval. Furthermore, domestic markets are relatively small and shallow. Hence, it is necessary to complement Value-at-Risk calculations with subjective stress testing and sensitivity analysis to estimate possible losses due to market risk. In light of this, the Group does not employ VaR to control market risk or set trading book limits, but rather views it as one of several indicators to be better able to manage market risk.



# 6 Liquidity risk

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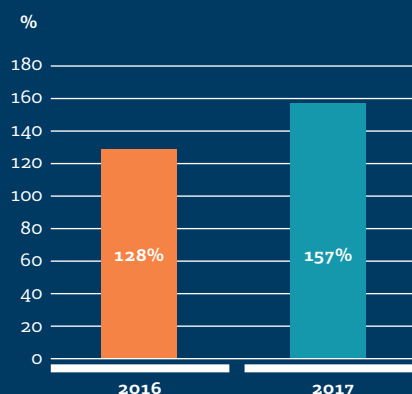


# Liquidity risk

**Liquidity risk is the risk that the Group will encounter difficulty in meeting its financial liabilities obligations that are settled by delivering cash or another financial asset, or of having to do so at excessive cost. This risk arises from the mismatch between maturities of financial liabilities and financial assets.**

- » Liquidity risk is identified as one of the Group's key risk factors. Accordingly, the Bank places great emphasis on liquidity risk management, reflected in both its risk appetite as well as in internal liquidity management policies and rules;
- » Great focus has been put on securing and maintaining a strong liquidity position for the past few years and sustaining a strong liquidity position in the near- and longer-term is reflected in the Bank's business plan;
- » The Group's liquidity position remains strong and is well above regulatory requirements and the Group's risk appetite;

**Liquidity Coverage Ratio-Total**



## 6.1 Identification

The Board has set a liquidity risk management policy for the Group. Liquidity risk management refers to the internal policies and procedures containing quantitative and qualitative objectives, limits and reporting. The policy describes how the Group identifies, evaluates, measures, monitors, manages and reports its liquidity. The policy clearly outlines the structure, responsibilities and controls for managing liquidity risk within the Group and includes a contingency

liquidity plan, along with a communication strategy. The contingency plan provides a framework for detecting an upcoming liquidity event with predefined early warnings and actions for preventing temporary or longer term liquidity disruptions.

## 6.2 Management

The objective of the liquidity management policy is to ensure that sufficient liquid assets and funding are available to meet financial obligations and with-

stand withdrawals of confidence sensitive deposits in a timely manner and at a reasonable cost, even under stressed conditions.

The policy aims to ensure that the Group does that by maintaining an adequate level of unencumbered, high-quality liquid assets that can readily be converted into cash. The Group has also implemented stringent stress tests that have a realistic basis in the Group's operating environment to further measure the Group's ability to withstand different and adverse scenarios of stressed operating environments.



The Group's liquidity risk is managed centrally by Treasury and is monitored by Market Risk. This allows management to monitor and manage liquidity risk throughout the Group. The Risk & Finance Committee monitors the Group's liquidity risk, while the Bank's Internal Audit function assesses whether the liquidity management process is designed properly and operating effectively.

The Group's liquidity management process entails procedures, measurements, monitoring and reporting of both short-term and longer-term liquidity risk as well as structural issues in the balance sheet. An integral part of the management process is conducting forward-looking analysis to estimate future liquidity position, taking the Bank's commitments into account.

The liquidity management policy is largely built on the liquidity risk measurement framework defined in Basel III and implemented through the CRD IV/CRR framework, as well as taking the Bank's current operating environment into account.

## 6.3 Assessment

The Group measures two key indicators, LCR and NSFR, to monitor and manage short-term liquidity

### Short-term liquidity risk

- » Intra-day
- » 30 days (LCR)
- » Stress testing

### Longer-term liquidity risk

- » Medium to long-term (NSFR)
- » Cash flow projections
- » Stress testing

### Structural issues

- » Balance sheet mismatches and maturity profiling
- » Concentration of liquidity
- » Contingency planning

Figure 6-1

risk and medium to long-term liquidity risk respectively.

The Group complies with the liquidity rules set by the Central Bank of Iceland no. 266/2017 which replaced former rules no. 1031/2014 on the 31 of March 2017. The liquidity rules are based on the liquidity requirements set forth in the CRD IV/CRR framework, which was fully implemented in Iceland in 2017 (regulation no. 233/2017).

The Group also follows rules No. 1032/2014 on funding set by the Central Bank of Iceland as well as following guidelines No. 2/2010 from the Icelandic Financial Supervisory Authority on best practice for managing liquidity in banking organisation. The

guidelines further promote sound management and supervision of liquidity within the Bank which is reflected in the Group's risk appetite and internal processes and policies.

The Bank submits monthly reports on its liquidity position to the Central Bank and the FME.

#### 6.3.1 Liquidity Coverage Ratio (LCR)

The Group measures the Liquidity Coverage Ratio (LCR) as a key indicator for short-term liquidity. The objective of the ratio is to promote short-term resilience by ensuring that the Group has sufficient high-quality liquid assets to withstand a significant stress scenario lasting 30 calendar days.

Table 6-1

		Total unweighted value*	Total weighted value*
		31.12.2017	31.12.2017
<b>Number of data points used in the calculation of averages</b>		<b>12</b>	<b>12</b>
<b>HIGH-QUALITY LIQUID ASSETS</b>			
1	Total high-quality liquid assets (HQLA)		130,880
<b>CASH-OUTFLOWS</b>			
2	Retail deposits and deposits from small business customers, of which:	261,229	24,651
3	Stable deposits	84,381	4,219
4	Less stable deposits	176,847	20,432
5	Unsecured wholesale funding	164,568	96,428
6	Operational deposits (all counterparties) and deposits in networks of cooperative banks	0	0
7	Non-operational deposits (all counterparties)	162,469	94,329
8	Unsecured debt	2,099	2,099
9	Secured wholesale funding		0
10	Additional requirements-	114,827	11,639
11	Outflows related to derivative exposures and other collateral requirements	2,177	2,176
12	Outflows related to loss of funding on debt products	491	491
13	Credit and liquidity facilities	112,159	8,971
14	Other contractual funding obligations	6,675	1,291
15	Other contingent funding obligations	24,956	6,848
16	<b>TOTAL CASH OUTFLOWS</b>		140,857
<b>CASH-INFLOWS</b>			
17	Secured lending (e.g. reverse repos)	0	0
18	Inflows from fully performing exposures	79,784	57,361
19	Other cash inflows	9,881	2,285
EU-19a	(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)		0
EU-19b	(Excess inflows from a related specialised credit institution)		0
20	<b>TOTAL CASH INFLOWS</b>	89,664	59,646
EU-20a	<b>Fully exempt inflows</b>	0	0
EU-20b	<b>Inflows Subject to 90% Cap</b>	0	0
EU-20c	<b>Inflows Subject to 75% Cap</b>	89,664	59,646
			<b>TOTAL ADJUSTED VALUE</b>
21	<b>LIQUIDITY BUFFER</b>		<b>130,880</b>
22	<b>TOTAL NET CASH OUTFLOWS</b>		<b>84,237</b>
23	<b>LIQUIDITY COVERAGE RATIO (%)</b>		<b>157%</b>

\*EU LIQ1 template; values are a simple arithmetic average of end of month data for each month in the previous year.

## Total deposits by groups

Table 6-2

As at 31. December 2017	Run off rate	0-30 days	Term	Total
Retail deposits				
Individuals	5% - 100%	233,421	88,893	322,314
Small and Medium Sized Corporates	5% - 100%	58,391	5,832	64,223
Operational deposits	5% - 25%	0	0	0
Non-operational deposits		0	0	0
Large Corporates	20% - 40%	89,462	26,953	116,415
Government	20% - 40%	24,871	1,729	26,600
Financial customers	100%	45,798	57,117	102,915
Other*		4,753	0	4,753
<b>Total deposits</b>		<b>456,695</b>	<b>180,525</b>	<b>637,220</b>

\*Include pledged deposits and other deposits not included in the Group's LCR but are included in the Group's consolidated financial statement.

Quantitative information of the Group's average LCR at year-end 2017 is shown in table 6-1. Further information can be found in the additional disclosures ac-

companying this document.

Table 6-2 shows the Group's deposit base at year-end 2017. Run off rates are used to estimate

deposit outflows under stressed conditions for the next 30 calendar days according to liquidity rules no. 266/2017.

### 6.3.2 Net Stable Funding Ratio (NSFR)

The Net Stable Funding Ratio has a longer time horizon and its objective is to capture structural issues in the balance sheet to support a sustainable maturity structure of assets and liabilities. The aim of NSFR is to promote more medium and long term funding. It establishes a minimum acceptable amount of stable funding based on the Group's funding profile and limits over-reliance on short-term wholesale funding.

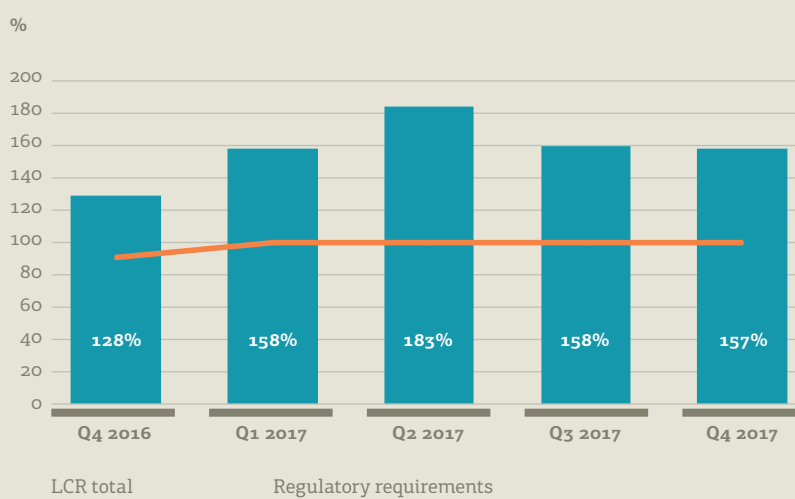
NSFR is defined as the ratio between the amount of available stable funding to the amount of required stable funding:

$$\text{NSFR} = \frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}}$$

Available stable funding is defined as the portion of capital and liabilities expected to be available over the time horizon considered by the NSFR. The amount of such stable funding required for the Bank is a function of the liquidity characteristics and residual maturities of the various assets held by the institution as well as its off-balance sheet (OBS) exposures. The Group's NSFR in foreign currencies at 31 December 2017 was 179%.

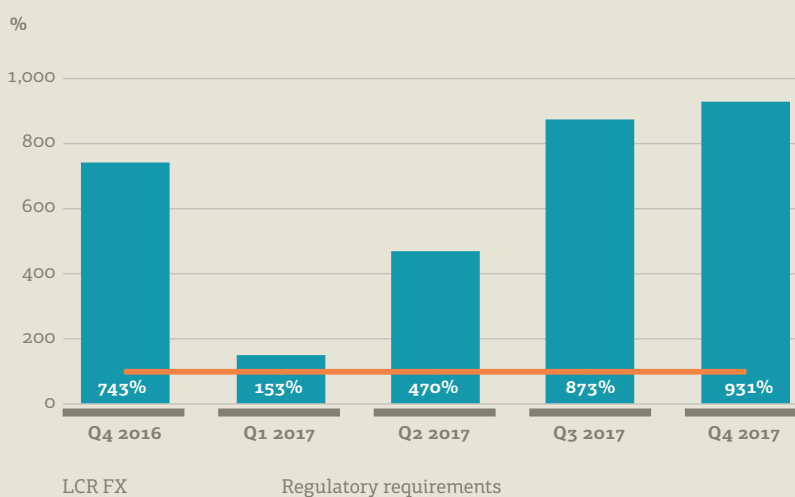
Liquidity Coverage Ratio (total)

Figure 6-2



Liquidity Coverage Ratio (FX)

Figure 6-3



## 6.4 Control and monitoring

The Bank's Treasury Department is responsible for day-to-day liquidity management, which entails closely monitoring current trends and potential market developments that may present significant and complex challenges for the Bank's liquidity strategy.

Liquidity risk is primarily controlled through tolerance limits set in the Group's risk appetite. Limit management is supplemented by regular monitoring and reporting of liquidity position under normal and stressed business conditions.

The Risk Management Division of the Bank regularly evaluates the Group's liquidity position and monitors internal and external events and factors that may affect the liquidity position.

### 6.4.1 Liquidity Contingency Plan

The Bank has in place a contingency plan which provides a framework for detecting an upcoming liquidity event with early warning indicators and actions for preventing temporary or longer term liquidity disruptions.

The Liquidity Contingency Plan stipulates the actions which shall be taken to monitor the likelihood or imminence of the occurrence of a liquidity event or a confidence crisis. It also includes a detailed action plan and procedures for the managing of a liquidity event. The Contingency Plan includes the following items:

- » A list of potential confidence crisis scenarios and their likely effects on the Bank's liquidity position;
- » A list of potential liquidity events and their effects on the Bank's liquidity management;
- » Various management actions aimed at resolving liquidity disruptions.

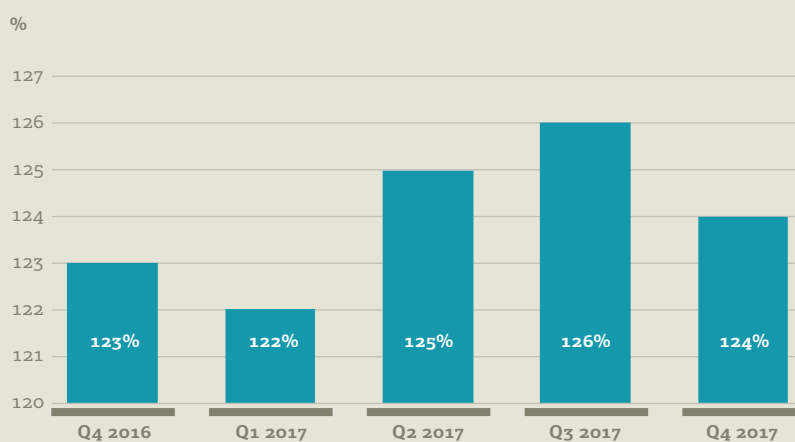
The contingency plan is supplemented by the monitoring of early warning indicators that have defined warning and trigger levels.

### 6.4.2 Stress test / sensitivity analysis

Various stress tests have been constructed to model how different scenarios affect the Group's liquidity position and liquidity

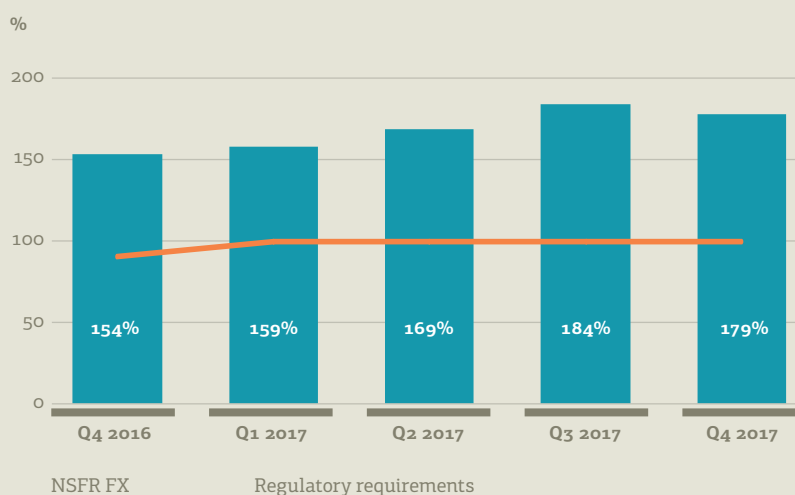
Net Stable Funding Ratio (Total)

Figure 6-4



Net Stable Funding Ratio (FX)

Figure 6-5



risk. The stress tests are based on the composition of the Group's balance sheet and take into account the Group's operating environment. The Group's own subjective views, historical trends and expert opinion are key factors in constructing the stress tests. The Group also performs other internal stress tests that may vary from time to time.

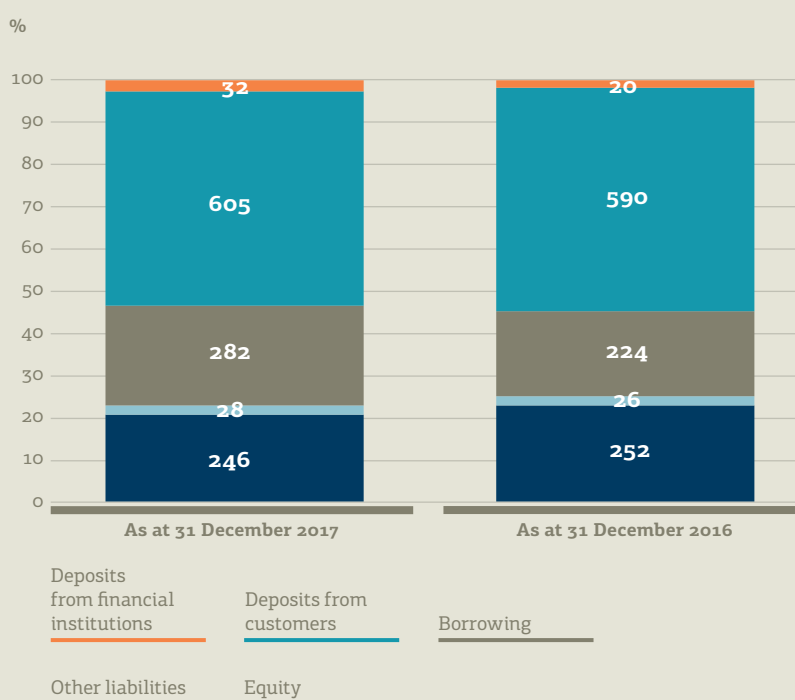
## 6.5 Funding and financing

Landsbankinn continued to work towards diversifying the Bank's funding profile in 2017 in particular in foreign currency. Landsbankinn completed an EUR issuance and SEK issuance under the Bank's EMTN programme in the first half of 2017. The proceeds were primarily used to pre-pay in full the secured bonds issued to LBI ehf. in June 2017. Landsbankinn issued foreign currency denominated bonds to LBI ehf. in December 2009 as a consideration for the assets and liabilities transferred from LBI to the Bank in October 2008, originally amounting to ISK 350 billion at the date of issue.

In 2017 Landsbankinn also took further steps to proactively manage the Bank's balance sheet by issuing a 5.5 year EUR 300 million bond under the Bank's EMTN programme in November and used the proceeds to refinance outstanding debt. Landsbankinn held a tender offer

### Funding profile - ISK billions

Figure 6-6



whereby the Bank purchased EUR 150 million of outstanding EUR 300 million notes maturing in October 2018.

Landsbankinn was also an active issuer on the domestic bond market with issuance of covered bonds as well as with issuance of bills.

Landsbankinn has a credit rating from Standard and Poor's and the Bank's credit rating is BBB+ / A-2 with a stable outlook. The last rating action taken by S&P was in October 2017 when the Bank received an upgrade from BBB to its current rating grade.

### 6.5.1 Funding

Landsbankinn's funding rests on three pillars. Deposits from customers are the Bank's primary funding source but the Bank is also funded through borrowing in the form of bond issuance, both in the international markets in foreign currencies as well as in the domestic market in Icelandic króna. Furthermore the Bank is funded with contributions from owners in the form of equity. Figure 6-6 shows the Bank's funding structure as of year-end 2017 and 2016.

## EMTN Programme

Table 6-3

As at 31 December 2017	Currency	Final maturity	Outstanding principal	Contractual interest rate
LBANK 3 10/18	EUR	19.10.2018	150	FIXED 3%
LBANK FLOAT 06/19 - SEK	SEK	10.06.2019	350	STIBOR + 2.60%
LBANK FLOAT 06/19 - NOK	NOK	11.06.2019	500	NIBOR + 2.60%
LBANK 1.625 3/21	EUR	15.03.2021	500	FIXED 1.625%
LBANK FLOAT 11/20	SEK	24.11.2020	250	STIBOR + 1.50%
LBANK 1.375 11/20	SEK	24.11.2020	750	FIXED 1.375%
LBANK 1.375 3/22	EUR	14.03.2022	300	FIXED 1.375%
LBANK FLOAT 06/20	SEK	22.06.2020	700	STIBOR + 1%
LBANK 0.75 06/20	SEK	22.06.2020	300	FIXED 0.75%
LBANK 1 05/23	EUR	30.05.2023	300	FIXED 1%

## 6.5.2 Borrowing

### 6.5.2.1 EMTN Programme

The size of the Bank's EMTN programme is EUR 2,000 million and was increased from EUR 1,500 million in 2017. At year-end 2017 EMTN bond issuance amounted to ISK 191 billion, increasing by 73 billion during the course of the year.

### 6.5.2.2 Covered bonds

Landsbankinn has set up an ISK 120 billion covered bond programme and the size was increased from ISK 100 billion during the year 2017. The purpose of the programme is to provide funding for the Bank's mortgage loan portfolio and hedge the Bank's fixed interest rate risk exposure. Landsbankinn held monthly auctions in 2017

and issued two new series of bonds during the year, LBANK CBI 24, a 7.5 year CPI-linked fixed rate bond and LBANK CB 23, a six year fixed rate bond, as well as tap issues to pre-existing bond series. At year-end the total nominal value of covered bonds outstanding amounted to 70 billion ISK, up from 39 billion ISK at year-end 2016.

## Covered bonds

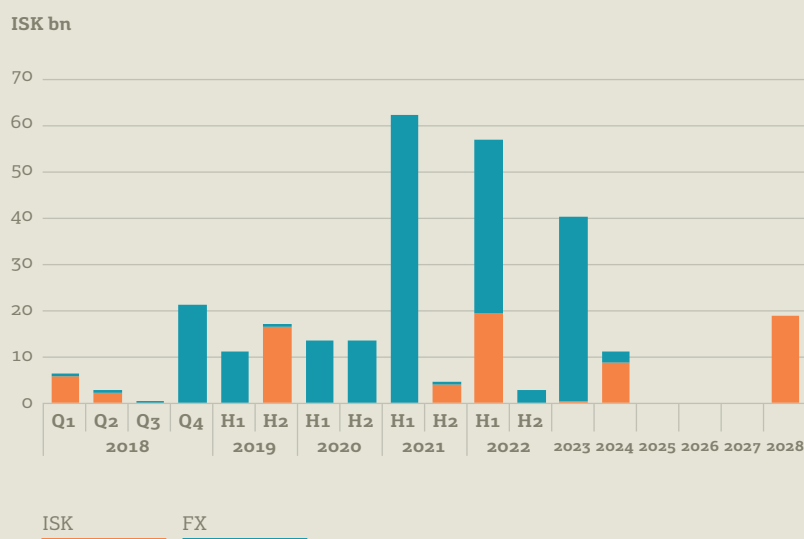
Table 6-4

As at 31 December 2017	Currency	Final maturity	Outstanding principal	Fixed contractual interest rate
LBANK CB 19	ISK	17.09.2019	16,120	6.80%
LBANK CB 21	ISK	30.11.2021	3,720	5.50%
LBANK CB 23	ISK	23.11.2023	420	5.00%
LBANK CBI 22	ISK	28.04.2022	19,540	3.00%
LBANK CBI 24	ISK	15.11.2024	8,640	3.00%
LBANK CBI 28	ISK	04.10.2028	19,000	3.00%



## Maturity Profile

Figure 6-7



### 6.5.2.3 Commercial Paper

Landsbankinn has set up an ISK 50 billion Debt issuance programme and issued commercial paper under the programme regularly throughout 2017 for general funding purposes. Outstanding commercial paper amounted to 7.5 billion ISK at year-end compared to 11.5 billion ISK at year-end 2016.

## Commercial Paper

Table 6-5

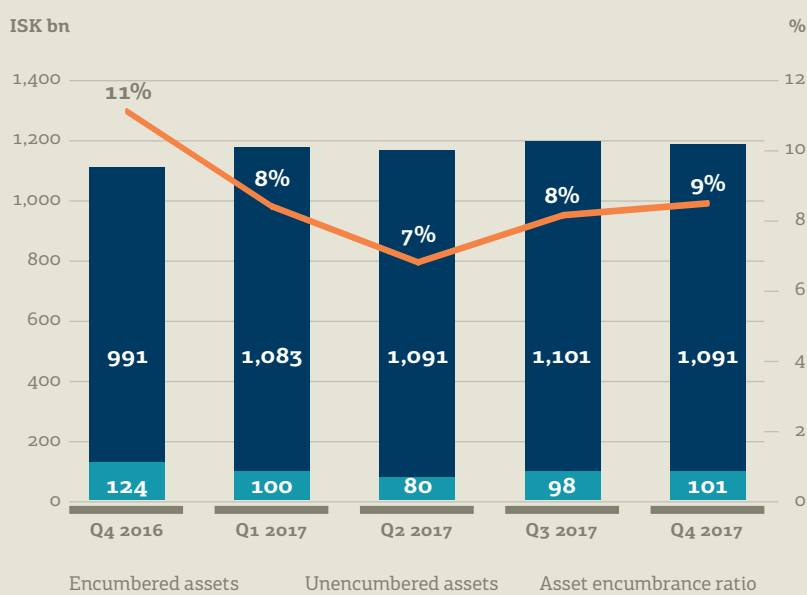
As at 31 December 2017	Currency	Final maturity	Outstanding principal
LBANK 180110	ISK	10.1.2018	220
LBANK 180212	ISK	12.2.2018	2,720
LBANK 180312	ISK	12.3.2018	2,700
LBANK 180410	ISK	10.4.2018	1,440
LBANK 180510	ISK	10.5.2018	420

### 6.5.3 Asset encumbrance ratio

The Group's liquidity and funding risk framework includes a measure of encumbered assets as a ratio to total assets. Encumbered assets are mainly comprised of loans and advances which are pledged against covered bonds issued by the Bank. Other encumbered assets are pledged as collateral to the Central Bank, pledged as collateral to secure trading lines and credit support for GMRA/ISDA master agreements and other pledges of similar nature.

Asset encumbrance ratio

Figure 6-8





The background of the page is a photograph of a massive, layered rock cliff face. The rock is grey and brown, showing distinct horizontal strata. At the base of the cliff, there is a dense forest of green trees. In the foreground, a calm body of water reflects the cliff and the sky. A small wooden platform with people on it is visible on the right side of the forest.

# 7 Operational risk

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# Operational risk

**Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events.**

- » Implementation of new payment and deposit systems in 2017
- » Biggest IT project in the history of the bank influenced the growth in incidents related to weakness in processes or systems

## Economic capital



Landsbankinn is exposed to operational risk through its activities. Loss may result from inadequate or failed internal processes, people and systems, or from external events. This includes factors such as legal and compliance risk and IT risk.

Legal and compliance risk is the risk to earnings and capital arising from failure to comply with statutory or regulatory obligations whereas IT risk deals with the risk of failure in IT systems. Both factors are relevant in the Bank's current environment.

The Bank identifies the types of operational risk to which it is exposed in order to better understand its operational risk profile and assess its vulnerability to these risks. The aim is to identify and assess the operational risk inherent in all existing or new material products, activities, processes and systems.

Effective operational risk identification and assessment processes are crucial in establishing a framework for operational risk monitoring and control.

In identifying operational risk, the Bank examines both internal and external factors that could adversely affect its performance and prevent the achievement of its objectives, such as:

- » Risk culture, human resource management practices, organizational changes and employee turnover
- » The nature of the Bank's customers, products, contractors and activities, including sources of business, distribution mechanisms and volume of transactions
- » The design, implementation, review and operation of the processes and systems

involved in the operating cycle of the Bank's products and activities

- » The external operating environment and industry trends, including political, legal, technological and economic factors, as well as the competitive environment and market structure

## 7.1 Control

The Board of Directors sets the Bank's policy regarding operational risk and risk appetite. Detailed rules on operational risk are in two parts. The first part is approved by the Board; the second part by the CEO. The rules set out the policy regarding operational risk, the roles and responsibilities of stakeholders in the Bank and the operational risk tolerance in terms of limits.

The Operational Risk Committee is responsible for all risk relating to operational risk, including IT risk and physical security. All rules connected to the remit of the Operational Risk Committee are approved by it.

The Operational Risk Department is a part of the Risk Management Division and is responsible for developing and maintaining the framework for managing operational risk and supporting the organization in the implementation of the framework. Part of this framework is the business continuity plans of the Bank as well as the security system for the online bank. The Department is also responsible for the ISO 27001 certification of the bank.

Internal Audit is responsible for auditing the effectiveness of the operational risk framework and the work of the Operational Risk Department.

Operational risk measurements are reported to the Board in a comprehensive manner as a part of the monthly reporting by Risk Management. Managing directors receive semi-annual reports on the key risk indicators relevant to operations under their control.

## 7.2 Measurement, mitigation, processes and control

In order to understand the effects of the exposures to operational risks the Bank continually assesses its operational risks. A number of tools are used to identify and assess operational risk.

- » Self-assessment. The Bank assesses its operations and activities against a menu of potential risk vulnerabilities. As a part of this internally driven procedure, the Bank has set up a well-documented process to identify strengths and weaknesses in the operational risk environment. The self-assessment is done by senior directors for operations under their control and then reported up to managing directors. This is done on a two year cycle and more often if there are material changes in the operational risk environment of departments. The self-assessment identifies control gaps, enabling appropriate corrective action to be taken;
- » Risk mapping. This process involves mapping all

reported incidents by risk type and to business units. This exercise reveals areas of weakness, leads to corrective action and assists in prioritizing subsequent management action;

- » Key risk indicators (KRIs) are statistics and/or metrics, often financial, which can provide insight into the Bank's risk position. These indicators are reviewed periodically to alert the Bank of changes that indicate risk concerns;
- » The Bank is certified in adherence to ISO 27001, the international standard on information security. This standard helps the Bank in assessing and monitoring operational risk in the certified areas.

For some time now, "Execution, delivery and process management" has had by far the largest number of events, 34 in 2015, 41 in 2016 and 46 in 2017.

The Bank categorizes operational incidents into deviation from rules or processes, weakness in processes or systems, external circumstances or security violations.

### 7.2.1 Mitigation

The Bank utilizes insurance as a part of its mitigation technique when it comes to operational risk. This is done through a Bankers' Comprehensive Crime policy.

Clear procedures are in place regarding the mitigating actions that result from self-assessment. There are separate procedures in place for how the Bank handles operational incidents and corrective and mitigating actions resulting from these incidents.

The architecture of the Bank's information systems is based on two mirrored data centres, primary and secondary, located in two different buildings linked with high speed communication. This setup allows the Bank to run its core systems with access to mission critical data even though one data centre (for instance the primary data centre) becomes unusable. In the event of a failure, core systems will switch automatically from one site (the failed one) to the other.

Number of loss incidents based on Basel II classification

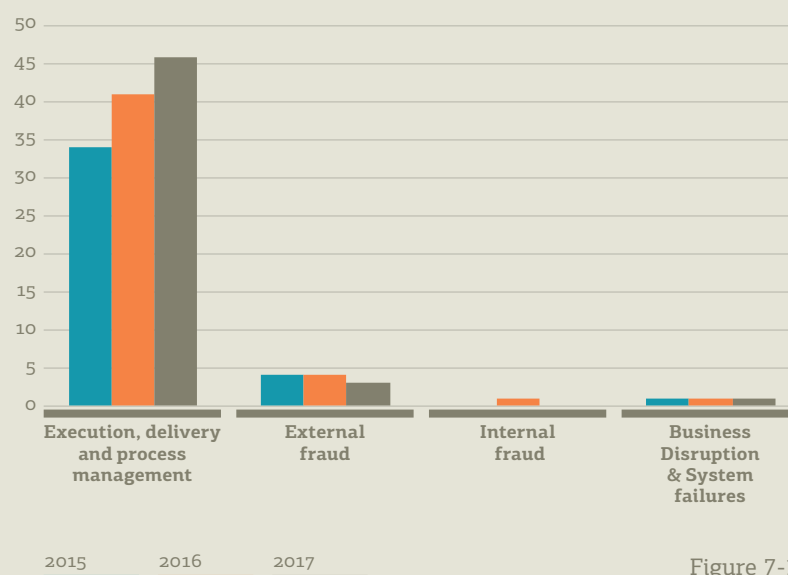


Figure 7-1

There are business continuity plans in place for all operations considered to be mission critical to the Bank. These plans are all tested on a yearly basis, apart from the IT Department's plan which is tested more frequently.

### 7.2.2 Control and monitoring

The Board and the CEO set detailed rules on operational risk governance and responsibilities. Day-to-day management of operational risk is a part of all managers' responsibilities and they

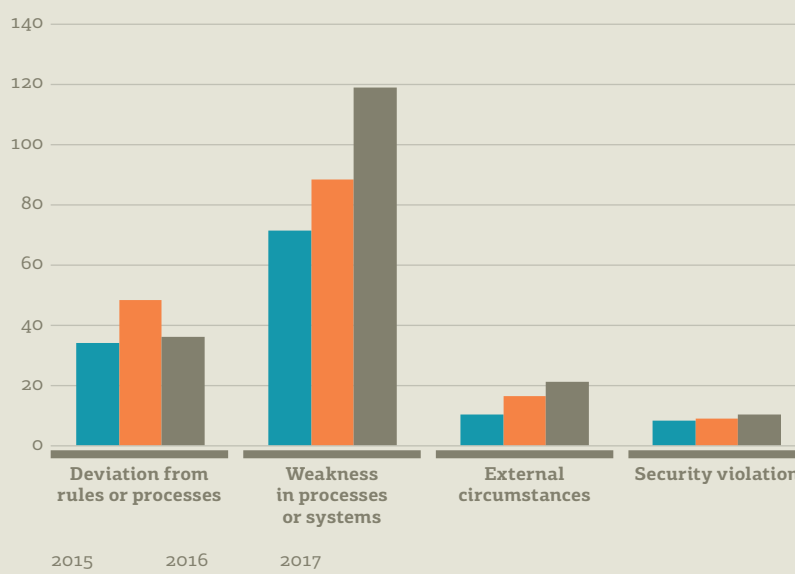
are also responsible for monitoring and controlling the operational risk in their departments. Managers evaluate operational risk through risk self-assessment, focusing on key risks identified with top-down management involvement.

Information security, physical security, education and training activities are important components of the management of operational risk and close co-operation is maintained with the relevant departments involved in these processes. Internal Audit and Compliance are key functions in the framework which the Bank has established to monitor and control operational risk.

Incident reporting, auditing and follow-up is an important part of operational risk management. The identification and remedial action helps to limit losses resulting from inadequate and failed processes. The Operational Risk Department is responsible for business continuity management and for maintaining the Bank's disaster recovery plans.

## Operational incidents

Figure 7-2



A number of documents, policies, rules and work procedures cover key aspects of the responsibilities of the Operational Risk Department. Those include the Bank's policy on information security, rules on operational risk, rules on information security, rules on operational risk assessment and rules on documents and document handling.

## 7.3 Cybersecurity risk

For the last six years Landsbankinn has built up a cyber-response team, a network with peers in the Financial sector and made major investments into IT Security in order to increase resilience for cyber security threats and cybercrime. The government and Central Bank of Iceland



enforced capital restrictions after the financial crisis in 2008. These restrictions limited cybercrime but since they were phased out there has been a notable increase in fraud related cases in Iceland. As the banking sector becomes more digitalised so does financial crimes. This is something that the Bank is aware of and is actively increasing the awareness of its customers.

This can be divided into five categories:

» **Know** – Gaining the institutional understanding to identify what systems need to be protected, assess priority in light of organisational mission, and manage processes to achieve cost effective risk management goals, and to aim to know vulnerability;

» **Prevent** – Categories of management, technical, and operational activities that enable the organisation to decide on the appropriate outcome-based actions to ensure adequate protection against threats to business systems that support critical infrastructure components;

» **Detect** – Activities that identify (through ongoing monitoring or other means of observation) the presence of undesirable cyber risk events, and the processes to assess the potential impact of those events;

» **Respond** – Specific risk management decisions and activities enacted based upon previously implemented planning (from the Prevent function) relative to estimated impact;

» **Recover** - Categories of management, technical, and operational activities that restore services that have previously been impaired through an undesirable cybersecurity risk event.

In relation to detection and knowing the Bank has created an incident response team with members both from IT and Risk departments. This team uses NIST (National Institute of Standards and Technology) as a template for the Bank to build its cyber resilience with the five bullets mentioned above. The Bank also uses several external vendors for sharing intelligence as it has been shown that there is limited overlap between them and the newest contributor is the Nordic Financial CERT. The Bank also sees itself participating in sharing IOC (Indicators of Compromise) to the Nordic society that will help all participants in preventing fraud.

The focus on prevention and respond is twofold, both external and internal. For external prevention, the Bank has created a website dedicated for cybercrime prevention. The aim is to limit cybercrime incidents by sharing information to make customers more risk aware. The security team has also both visited

companies and attended conferences to give presentations about cybercrime and best practices to avoid fraud. This is also seen by the Bank as part of social responsibility in the Icelandic society. Finally in this regard the Bank distributed a commercial, on TV and in the Cinema, to educate viewers about how fraud can be committed. See link below:

<https://umraedan.landsbankinn.is/umraedan/samfelagid/verum-vakandi>

Internally the Bank has invested, for the last years, in creating layered security approach. There has been focus on secure coding for in-house solutions, policies and procedures have been implemented to improve security at different layers based on ISO27001:2013, and finally the Bank has used 3rd party pen-testers on a 24/7 basis to better understand any security gaps. This has been very useful and shown in practice, the importance to also use external vendors to review the Bank's IT systems. The Bank has also created procedures to be followed in case of incident for example BEC fraud, DDOS attack, External Breach, Data theft and Ransomware.

In response the Bank reviews its procedure every year. For the recovery part a categorisation is in place for the Bank's systems. Those deemed as A-system have a fault tolerance setup and there are plans for data guard in 2018. In general the approach is ever evolving as technology is always changing.

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# New regulations

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## 8.1 Regulatory changes

<b>Act No. 23/2017, amending the Act on Financial Undertakings and the Act on Official Supervision of Financial Activities (notification of violations on the financial market)</b>	The Act amends the Act on Financial Undertakings, No. 161/2002, as well as the Act on Official Supervision of Financial Activities, No. 87/1998, concerning notifications from employees about violations in the operations of financial undertakings and similar notifications to the Financial Supervisory Authority, Iceland (FME), and violations in the operations of parties subject to public supervision of financial activities. The objective of the amendment is to facilitate notifications of violations in the operations of financial undertakings and increase the possibility of informing more promptly of violations in the operations of parties subject to public supervision of financial activities.
<b>Act No. 94/2017, amending the Act on Financial Undertakings, No. 161/2002, with subsequent amendments (authority of the FME to take measures to minimise damage to the financial market)</b>	The Act extends the time limit on powers granted to the FME to take extraordinary measures under certain circumstances or events to minimise damage or the risk of damage to the financial market.
<b>Act No. 36/2017, on amendments to the Act on Interest and Indexation, the Act on the Central Bank of Iceland (CBI), the Act on Consumer Credit and the Act on Housing Loans to Consumers (loans linked to foreign currency).</b>	The Act cancels the inexorable ban on indexing ISK-denominated loans to foreign currencies. The CBI was authorised to set rules, in the interest of financial stability and after receiving the opinion of the Financial Stability Counsel, on limits on lending linked to foreign currencies to parties not hedged against currency risk. Firstly, the law provides that the CBI can limit FX-indexed lending by credit institutions to non-hedged parties by determining on the one hand that the weight of such loans in the loan portfolio of a credit institution, either overall or to certain groups of non-hedged borrowers, shall be subject to specified limits. Secondly, the Act provides that the CBI shall be given authority to determine maximum or minimum loan terms of FX-indexed loans granted to non-hedged parties.



<b>Act No. 27/2017, on the Treatment of Króna-Denominated Assets Subject to Special Restrictions, No. 37/2016, as subsequently amended (withdrawal limits).</b>	The objective of the Act is to promote the liberalisation of capital controls and loosen restrictions on withdrawal limits on accounts previously subject to special restrictions under Act No. 37/2006. The law authorises the withdrawal of accrued payments such as interest, interest indexation, dividend and contractual instalments on the principal of loan obligations prior to the due date, along with indexation on same. The monetary limit provided for in Article 2 of the Act was raised from ISK 1,000,000 to ISK 100,000,000.
<b>Act No. 63/2017, on amendments to the Act on Compulsory Insurance of Pension Rights and Activities of Pension Funds No. 129/1997, and Act No. 111/2016, on Support to First-Time Home Owners.</b>	The Act effected the change that Temporary Provision XVII of the Act on disbursement of supplementary pension savings shall not exceed the amount of the beneficiary's paid contributions, was extended for a further two years, or to 30 June 2019. This is in line with amendments to the Act on Support to First-Time Home Owners in which Temporary Provision XVII was extended for a further two years.
<b>Act No. 61/2017, on Supplementary Supervision of Financial Conglomerates.</b>	The provisions of the Act allow the Financial Supervisory Authority, Iceland (FME), to assess the financial standing of financial undertakings and insurances companies on a group level following special rules on additional monitoring of solvency, risk concentration and transactions within groups.
<b>Act No. 55/2017, on Short Selling and Credit Default Swaps.</b>	The Act transposes into Icelandic law EU Regulation No. 236/2012, on short selling and certain aspects of credit default swaps and necessary related provisions, i.e. on implementing supervision of the provisions of the Act, on granting regulators authorisation for information gathering, the enforceability of decisions by the EFTA Surveillance Authority and the EFTA Court, penalty provisions, laying charges and the authority of a minister to set rules.

## 8.2 Regulatory developments (expected changes)

<b>Bill of legislation amending Act No. 161/2002, on Financial Undertakings (group monitoring, recovery and restoration plans, early intervention etc.).</b>	The bill is based on Directive 2013/36/EU of the European Parliament and of the Council (CRD IV) and Directive 2014/59/EU of the European Parliament and of the Council (the Bank Recovery and Resolution Directive, BRRD). The bill amends provisions on group monitoring of financial undertakings in Iceland. Directive 2013/36/EU has not been incorporated in the Agreement on a European Economic Area yet its main points have nonetheless been transposed into Icelandic law. The bill also proposes to transpose elements of Directive 2014/59/EU, pertaining <i>inter alia</i> to new demands requiring financial undertakings to have recovery and restoration plans in place and new authority and measures granted to the FME to intervene in the operation of financial undertakings, into Icelandic law. These new requirements and authorisations are intended to deal with difficulties that may arise in the operation of financial undertakings with the objective of restoring the financial position of such companies and ensuring financial stability. Work is under way to incorporate both directives in the EEA Agreement.
<b>EU Regulation No. 648/2012, on OTC derivatives, central counterparties and trade repositories (EMIR)</b>	Applies to central counterparties and trade repositories that qualify as systemically important to the financial system but are not located in Iceland.
<b>Directive 2014/59/EU establishes a framework for the recovery and resolution of credit institutions and investment firms (BRRD)</b>	The BRRD harmonises rules on readiness and response to operating difficulties in financial undertakings, not least in systemically important undertakings, across Europe; conception of BRRD can be traced back to the financial crisis in 2008. The BRRD obliges financial undertakings to prepare recovery plans and resolution authorities to prepare resolution plans, etc. The substantial provisions of the BRRD refer to the payment intermediation role of financial undertakings, as well as payment and settlement systems recognised under the Settlement Financial Directive (SDF).

<b>EU Regulation No. 909/2014, on improving securities settlement in the European Union and on central securities depositories (CSDR)</b>	The objective of CSDR is to harmonise laws, rules and market practice on European securities markets. Various rules have hitherto applied to settlement in EU member states, providing for different clearing and settlement times, as well as varying operating conditions and authorisations.
<b>Payments Account Directive 2014/92/EU (PAD)</b>	Applies to all payment service providers with certain parts of the Directive applying only to financial undertakings. Provides for financial inclusion, i.e. the right of all EEA member state nationals to own a general payment account, regardless of domicile and financial standing. The provisions of PAD pertain to the comparability and transparency of fees charged for payment accounts and facilitating the transferral of business, etc.
<b>EU Regulation No. 2015/751, on interchange fees for card-based payment transactions (IFR)</b>	Applies to card-based payment transactions. Payment cards remain the most common means of payment for goods and services for the purpose of PSD. The regulation provides for, <i>inter alia</i> , maximum interchange fees.
<b>Payment Services Directive 2015/2366/EU, repealing Directive 2007/64/EC (PSD2)</b>	Revision of older directive on the same subject. PSD2 replaces PSD1 from 2007. The concept of payment service is widened, the scope of the Directive amended somewhat, provisions set on further collaboration and information sharing between regulators across borders, surcharging, etc. Emphasis is placed on security measures and risk management, not least with regard to operational risk.
<b>Bill of legislation on data protection (transposing the EU data protection regulation)</b>	Comprehensive changes to data protection that <i>inter alia</i> alter and expand the role of domestic regulators, advance the rights of individuals, provide for new security certification and considerably increase fining powers. The new regulation strengthens the basic rights of individuals on the digital market while providing support for its development.
<b>Bill of legislation amending the Act on Measures to Prevent Money Laundering and Terrorist Financing (directive on measures to prevent money laundering and terrorist financing)</b>	Transposition of the fourth directive of the European Parliament and of the Council to combat money laundering.
<b>Bill of legislation amending the Act on Public Registration of Documents (electronic registration of documents)</b>	Amendments to legislation to allow for the public registration of documents electronically. This provides for the public registration of documents on certain subjects via electronic means in the Register. It is expected that a regulation will be passed based on the amended Act to clarify which documents may be electronically registered and which parties have authority to register documents electronically.



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# Disclosure Policy

## 9.1 Introduction

The Basel III Accord, implemented in the European Union through the Capital Requirements Directive (CRD 2013/36/EU ('the Directive')) establishes a revised regulatory capital framework across Europe governing the amount and nature of capital that must be maintained by credit institutions. Parts of the Directive have been implemented into Icelandic law by amendments to the Act on Financial Undertakings (Act. No. 57/2015 and Act No. 69/2016 amending Act No. 161/2002 on Financial Undertakings). The amendments to Icelandic law incorporate among other things the CRD IV capital buffer requirements, disclosure requirements, minimum leverage ratio, supervisory review and evaluation process and capital definitions.

The Basel II framework consists of three 'Pillars':

- » Pillar I sets out the minimum capital amount that meets the firm's credit, market and operational risk;
- » Pillar II requires the firm to assess whether its Pillar I capital is adequate to meet its risks (Internal Capital Adequacy Assessment Process, ICAAP) and is subject to annual review by the FME in the Supervisory Review and Evaluation Process (SREP);
- » Pillar III requires disclosure of specified information about the underlying risk management controls and capital position.

This publication, Risk and Capital Management 2017, reviews the Group's organisation and processes relating the identification and management of the risk type characteristic of a financial group with its type of business concept. It also describes the Group's risk position on the basis of the requirements under Pillar III.

## 9.2 Disclosure policy

In accordance with the Directive, the Group has adopted a formal disclosure policy in that it will comply with the requirement to publicly disclose relevant information.

The rules provide that one or more of the required disclosures may be omitted if it is believed that the information is immaterial. Materiality is based on the criteria that the omission or misstatement of material information would be likely to change or influence the assessment or decision of a user relying on that information for the purposes of making economic decisions. If disclosure is considered to be immaterial, it will be stated in the relevant section.

One or more of the required disclosures may be omitted where it is believed that the information is regarded as proprietary or confidential. Proprietary information is that which, if it

were shared, would undermine a competitive position. Information is considered to be confidential where there are obligations binding the Group to confidentiality with customers and counterparties. If information is omitted for either of these reasons, it will be stated in the relevant section along with the rationale. Further general information on the subject of required disclosures will be published where appropriate.

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### **9.3 Frequency of publication**

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The disclosures will be reviewed on an annual basis at a minimum and, if appropriate, more frequently. Disclosures will be published as soon as is practicable following any revisions.

### **9.4 Verification**

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The disclosures have been put together to explain the basis of preparation and disclosure of certain capital requirements and provide information about the management of certain risks and for no other purposes. They do not constitute any form of audited financial statement and have been produced solely for the purpose of Pillar III. They should not be relied upon in making judgements about the Group. The disclosures will only be subject to external verification to the extent that they are equivalent to those made under accounting requirements.

The disclosures are reviewed and approved by the Group's Board of Directors and Risk & Finance Committee.

This publication, Risk and Capital Management 2017, has not been audited by external auditors. However, it has been appropriately verified internally and includes information from the audited Consolidated Financial Statements 2017. There may be some discrepancy between financial information in the Consolidated Financial Statement 2017 and information in the Risk and Capital Management 2017 as the report has been prepared in accordance with the Capital Requirements Directive and the Basel III capital framework, rather than in accordance with IFRS.

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### **9.5 Media and location of publication**

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The disclosures will be published on the Landsbankinn hf. website.

# 10 Appendix

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## 10.1 Landsbankinn's 2017 Remuneration report

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### 10.1.1 Introduction

Landsbankinn hf. emphasises hiring and employing exceptional personnel. The aim of the remuneration policy is to make Landsbankinn a desirable workplace for qualified employees to ensure the Bank's competitiveness, continued development and acceptable profitability. The remuneration policy shall support sound operations in the long term and not encourage unreasonable risk-taking. It is the Bank's aim that the terms of employment of executives and other employees are competitive without being leading in the market. In determining terms of employment, responsibility and performance shall be taken into account, as

well as equal rights perspectives. The remuneration policy applies to the Board of Directors, the Executive Board of Landsbankinn, and all Landsbankinn employees. The subsidiary of Landsbréf has its own remuneration policy and Remuneration Committee.

### 10.1.2 Governance

The remuneration policy of Landsbankinn shall be approved by its Board of Directors. Furthermore, the remuneration policy shall be submitted to the Bank's Annual General Meeting for approval or rejection. The remuneration policy may be reviewed more than once yearly and any amendments submitted to a shareholders' meeting for approval. The remuneration policy serves as an indicative guideline for the Bank and the Board of Directors. The Board of Direc-

tors shall enter any deviations from the remuneration policy and substantiation thereof in the minutes. Deviations shall be presented to the Bank's next AGM.

The Remuneration Committee of Landsbankinn is comprised of three Directors. The role of the Remuneration Committee is to guide the Board of Directors and CEO in deciding on the terms of employment of key executives and to advise on the remuneration policy. The Committee shall ensure that the terms of employment of the Bank's executives are within the framework provided by the remuneration policy and report on its implementation yearly in connection with the Bank's AGM. The Committee shall monitor the developments of collective bargaining agreements, trends in salary expenses and number of employees. The

Board of Directors has issued Terms of Reference for the Committee in which its role and duties are defined.

In the year 2017 the Remuneration committee members are Chairman of the board, Helga Björk Eiríksdóttir (Chairman of the Remuneration Committee), Magnús Pétursson and Berglind Svavarsdóttir. In addition the CEO of Landsbankinn, Head of HR and Head of Legal regularly attend certain parts of Remuneration Committee meetings.

In the year 2017 the committee reviewed the remuneration policy prior to the annual meeting and made no changes to the policy. During 2017 the Committee held 6 meetings.

### **10.1.3 Remuneration policies for Landsbankinn Board of Directors and CEO**

Board members shall receive set monthly remuneration in accordance with the decision of the AGM each year as provided for in Article 79 of Act No. 2/1995, on Public Limited Companies. In determining the remuneration amount, consideration shall be taken to the hours spent on the job, the responsibilities

borne by the board members and the company's performance. The Remuneration Committee presents the Board of Directors with a substantiated proposal for remuneration to Board members in the coming operating year. The Board of Directors deliberates on the Committee's proposal and submits a final proposal on remuneration to the AGM. The Bank reimburses Directors domiciled outside the capitol region for travel expenses. Board members may not conclude severance agreements with the Bank.

The Board of Directors appoints the Bank's CEO. According to the Act on the Senior Civil Servant's Board No. 47/2006 the Senior Civil Servant's Salary Board determined the remuneration of the Bank's CEO until the 1 July 2017. The Senior Civil Servant's Salary Board is an independent board which is entrusted with the task of deciding salaries and remuneration of senior state officials. In December 2016, Parliament passed a new Act on the Senior Civil Servant's Board. The new Act No. 130/2016 entered into force on 1 July 2017 and repealed and replaced Act No. 47/2006. The new Act stipulates that the Board of Directors determines the remuneration of the Bank's CEO.

The CEO hires the Bank's key executives and their terms of employment shall be competitive without leading the market. Landsbankinn makes public the terms of employment of Directors and key executives in its annual report.

All employees in Landsbankinn receive a fixed salary, according to position and function. The salary level is evaluated on an annual basis. Employee benefits are offered to all employees. All employees have mandatory pension contributions and paid holidays on market aligned terms.

Landsbankinn does not offer variable remuneration, and has no plan to implement variable remuneration. Any decision to implement variable remuneration has to be presented to a shareholders' meeting for approval.

The remuneration committee performs an annual comparison with market data on remuneration to ensure remuneration is competitive, but not leading for various groups, such as Executive board, Managers, Branch managers and Control functions.

**Publisher:** Landsbankinn  
**Responsible party:** Perla Ösp Ásgeirsdóttir  
**Design:** Jónsson & Le'macks  
**Layout:** Guðmundur Ragnar Steingrímsson  
**Photography:** Marino Thorlacius

