



# FINANCIAL STABILITY

2019 • 1

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Financial stability means that the financial system is equipped to withstand shocks to the economy and financial markets, to mediate credit and payments, and to redistribute risks appropriately.

The purpose of the Central Bank of Iceland's *Financial Stability* report is:

- to promote informed dialogue on financial stability; i.e., its strengths and weaknesses, the macroeconomic and operational risks that it may face, and efforts to strengthen its resilience;
- to provide an analysis that is useful for financial market participants in their own risk management;
- to focus the Central Bank's work and contingency planning;
- to explain how the Central Bank carries out the mandatory tasks assigned to it with respect to an effective and sound financial system.

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Icelandic letters:

ð/Ð (pronounced like th in English this)

þ/Þ (pronounced like th in English think)

In *Financial Stability*, ð is transliterated as *d* and þ as *th* in personal names, for consistency with international references, but otherwise the Icelandic letters are retained.

## Foreword by the Governor

### Risks materialise, but resilience is strong

Risk in the financial system has been considered relatively moderate in the recent term, albeit subject to change if economic shocks should strike. Some of that risk has now materialised in the failure of the capelin catch and the collapse of WOW Air. These developments make it clear that export revenues and GDP growth will be weaker than was assumed in the Central Bank's February forecast. There are still risks that have not yet materialised but could do so in the near future.

Although WOW Air's collapse will cause some losses in the banking system, it had already been established that the direct impact on Iceland's systemically important banks would be limited. The indirect impact — including the impact of the capelin catch failure and other potential shocks — is more difficult to assess at this juncture. It will depend in part on how quickly and to what extent other airlines fill the gap left by WOW Air, and the extent to which economic policy and other policy actions mitigate the effects of the shock. It will depend as well on how the interaction between the contraction in tourism and changes in the real estate market play out in the months to come. House prices rose steeply as tourism surged, owing in part to a shift towards short-term private rentals to tourists. House price inflation has eased, however, and could continue to do so. Yet commercial real estate prices have been rising strongly and are quite high by most measures.

In spite of this uncertainty about their direct and indirect impact, the shocks that have struck recently are highly unlikely under current conditions to jeopardise the stability of the financial system. They are simply not large enough, given the current level of resilience in the domestic economy and financial system. This resilience can be seen in Iceland's positive net external position and large international reserves, in the private sector's relatively strong equity position, and in the banks' high capital ratios and ample liquidity. Furthermore, economic policy has considerable scope to respond — much more than in many other countries. The Treasury is running a surplus, and public debt is low in historical and international context. There is considerable scope to lower interest rates if conditions call for it, unlike in many of our trading partner countries, as Iceland's interest rates are well above zero.

The Central Bank is closely monitoring developments in the economy and the financial system. It will conduct an assessment of how the most recent events change the overall picture and will analyse the implications for economic and prudential policies. The publication released today provides important background for such work, as it gives a clear view of the most recent information on the position of the financial system and its customers.

A handwritten signature in black ink, appearing to read 'Mr. J. M. Andersen', is positioned at the bottom of the page.



# I Key risks

Risk in the financial system is still moderate. Uncertainty has mounted, however, and risks have materialised to an extent, although the impact on the financial system has yet to surface. As before, the key domestic risks stem from the tourism industry and high real estate prices. The global output growth outlook has deteriorated, uncertainty has grown, and there is unrest in foreign capital markets. The whirlwind growth of tourism is now giving way to a contraction, and some of the risks that accumulated during the growth phase will probably materialise to some extent. There is particular uncertainty about flight offerings during the next few months, and the collapse of WOW Air will have some impact on tourist arrivals, at least in the short run. House price inflation has eased in the past year, but prices are still high relative to fundamentals. Growth in household debt is still moderate, although mortgage debt has risen. The supply of housing has increased in the recent term and is expected to continue growing in the next few years. Commercial real estate prices are still rising strongly and are quite high by most measures. In addition, corporate debt has grown markedly, although there are signs that a slowdown in growth is in the offing. There is a strong link between risk in the real estate market and risk in the tourism industry, and a large share of the banks' lending activity is real estate- and tourism-related. On the other hand, households' and businesses' balance sheets are relatively strong at present, and the financial institutions are resilient, which mitigates the potential impact and favourably affects the overall assessment of risk.

## Tourism







### Downturn in tourist arrivals

Iceland's tourism industry has grown phenomenally in recent years and is now the largest single sector of the economy. The past few years' upswing in construction and real estate, as well as in the services sector, is closely linked to developments in tourism. If tourism experiences a substantial contraction, it will have a profound impact on related sectors, GDP growth, and the general economy.

Growth in tourist arrivals slowed markedly in 2018. A further turnaround has occurred this year with the contraction in available flights to and from the country. This trend will continue in the months to come. Comparable developments can be seen in figures on hotel bed-nights. The number of available rooms is now growing faster than the number of bed-nights, and hotel occupancy rates declined throughout 2018, although they are still high in international context. A large number of hotels and guesthouses are still under construction, and an estimated 1,500 new hotel rooms are expected to become available in the next two to three years, expanding the current total by about a fourth.<sup>1</sup> Average payment card spending per tourist has

1. Based on an analysis of the capital area commercial real estate market, carried out by Reykjavík Economics for the Central Bank in November 2018 - January 2019.

Table 1 Key risks

	2018/2	2019/1
Residential real estate		
Commercial real estate		
Tourism		





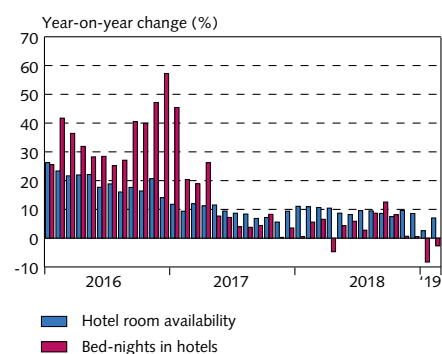
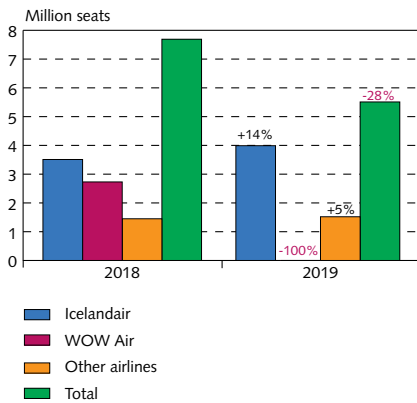
			
Least risk			Greatest risk

Chart I-1  
Bed-nights in hotels and hotel room availability



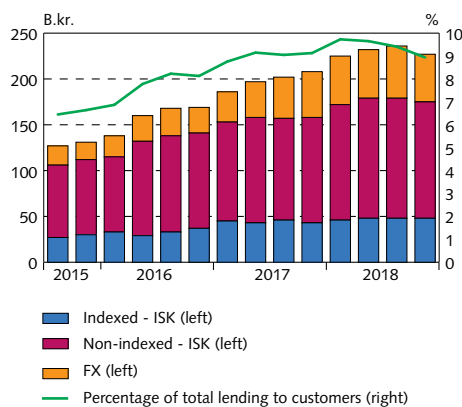
Source: Statistics Iceland.

Chart I-2  
Flight seat availability via Keflavik Airport  
April - October



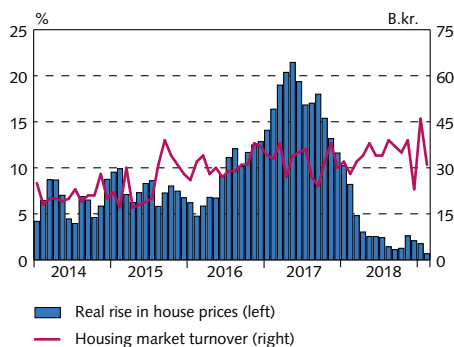
Source: ISAVIA.

Chart I-3  
D-SIB<sup>1</sup> lending to the tourism industry



1. D-SIB: Domestic systemically important banks.  
Source: Central Bank of Iceland.

Chart I-4  
Capital area housing market: Year-on-year change in real house prices and market turnover<sup>1</sup>



1. Housing market turnover at constant December 2018 prices.  
Sources: Registers Iceland, Statistics Iceland.

increased in krónur terms in recent months, but card use measured in foreign currencies appears to have held broadly unchanged.

### Reduction in airline seat offerings

The two domestically owned international airlines, Icelandair and WOW Air, have sustained the increase in seat offerings to and from Keflavik Airport in recent years, accounting for over 80% of the total in 2018. Both airlines have been grappling with a challenging operating environment for quite some time. Operational difficulties at WOW Air led to its insolvency at the end of March. Other airlines' schedules for the next several months suggest that this summer could see a year-on-year contraction in seat offerings of nearly a third. It is not a given, though, that tourist arrivals will fall commensurably. Airlines' load factor, or seat utilisation, could increase, and it is likely that other airlines will pick up the slack, at least to begin with, by emphasising passenger travel to and from Iceland, at the expense of through passengers not stopping in the country. Over time, flight offerings to and from Iceland can be expected to increase again. In addition to the above-mentioned contraction, the grounding of the new Boeing 737 MAX jets could have a further negative effect on seat offerings this summer, particularly for Icelandair, as these models represents one-fourth of the fleet assigned to the summer 2019 schedule.

### Abrupt slowdown in lending growth to the tourism industry

At the end of December 2018, lending to the tourism sector accounted for nearly 9% of the large commercial banks' loans to customers. Lending to tourism companies has slowed markedly in recent months and was virtually flat in nominal terms in the last three quarters of 2018. Year-on-year growth still equalled nearly 10% in 2018, although it was sustained by increased lending in the first half of the year. In comparison, lending growth to the sector measured 23% in 2017.

By all measures, there has been a contraction in tourism in recent months, and there are no signs of a shift in this trend in the months to come. The contraction in available flights to Iceland will have a strongly negative impact on tourism and related sectors in coming months. One manifestation of the downturn in the sector will be an increase in non-performing loans. It is vital that the tourism industry and related sectors adjust quickly to this changed operating environment. The banks must be prepared for the possibility that tourism-related counterparty risk will materialise and that operating difficulties in the tourism industry will result in loan losses.

## Housing market

### Real house prices in greater Reykjavik unchanged year-on-year ...

Capital area house prices have been virtually unchanged in the past year, after rising steeply in 2016 and 2017. For single-family homes, the twelve-month rise in real terms measured 1.8% in February, whereas condominium prices were more or less flat between years. Real house prices in regional Iceland rose more strongly, or by 5.2% year-on-year, although house price inflation outside the capital has been much less in the past.

Market turnover grew by 3.8% year-on-year in 2018, and the number of purchase agreements rose by a similar amount. The number of flats for sale surged between years, however, and the share of newly constructed homes on the market rose strongly. The number of purchase agreements has not risen in tandem with the number of homes for sale, indicating that the average time-to-sale is growing longer. The rise in house prices in 2016 and 2017 was driven largely by demand that far outstripped supply, as can be seen in the rapid drop in available homes for sale during that period. Tensions in the housing market appear to be easing at present, with supply growing and prices broadly unchanged in the past year.

### ...but prices remain high relative to fundamentals

House prices in greater Reykjavík are still high by most measures, even though they have risen very little in the past year. In 2016 and 2017, prices rose in excess of both wages and rent, and well in excess of construction costs. The imbalances that accumulated at that time have remained unchanged for the most part since then.

After house price inflation began to ease, rent continued to rise, and the ratio of house prices to rent has therefore fallen. The limited supply of rental housing is likely a major factor in this. One of the large rental housing companies in the market<sup>2</sup> has downsized its portfolio recently and aims to keep doing so in the next few years. To some extent, this will increase the supply of flats for sale but reduce the supply of rentals. As a result, it is uncertain whether a declining house price-to-rent price ratio is a sign of a better balanced housing market or an overstretched rental market. It is important to monitor the rental housing supply and rent prices in the coming term.

### Will supply overtake demand?

Residential construction has been growing apace in recent years, after stagnating in the wake of the financial crisis. Some 10,000 flats are scheduled for completion in the next three years.<sup>3</sup> Statistics Iceland's population projections indicate that the supply of residential property will exceed population growth in greater Reykjavík in coming years. This surge in construction should therefore meet some of the past years' pent-up demand for housing.

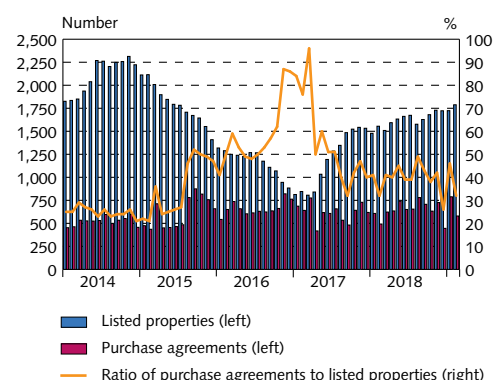
Concurrent with increased residential development, it appears that the main drivers of house price inflation are losing steam. From 2015 through mid-2018, there was a steep rise in the number of flats used for short-term rentals to tourists, particularly in or near the city centre. That trend has now reversed, however, and the occupancy rate of the remaining short-term rental flats has fallen. A downturn in tourist arrivals is expected this year. As a result, the trend away from short-term rentals is likely to continue, and flats previously used for tourist rentals will probably enter the market as long-term rentals or be advertised for sale.

2. Heimavellir. Annual accounts 2018, presentation for market agents. <https://www.heimavellir.is/static/files/uppgjorskygning-2018-v5.pdf>

3. Report from the task force on increased housing supply. <https://www.stjornarradid.is/lisalib/getfile.aspx?itemid=efc6e7a3-1e48-11e9-942f-005056bc530c>

Chart I-5

Listed properties and registered purchase agreements in the capital area<sup>1</sup>

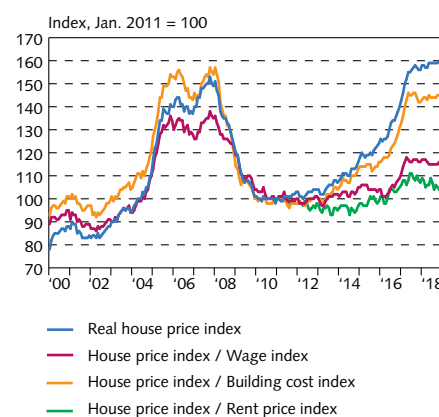


1. Number of properties listed for sale on the mbl.is real estate website, monthly average. Central Bank estimate of properties for sale May 2018-February 2019.

Sources: mbl.is real estate website, Registers Iceland, Central Bank of Iceland.

Chart I-6

Real house prices in the capital area and their determinants<sup>1</sup>

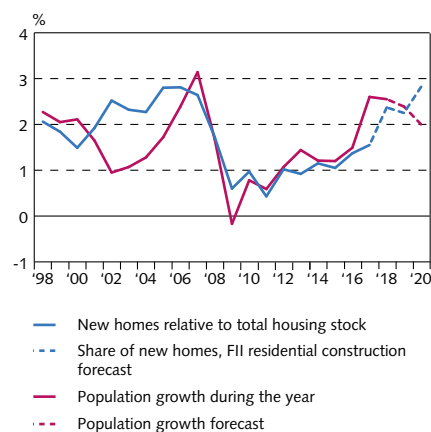


1. Real prices deflated with the CPI.

Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

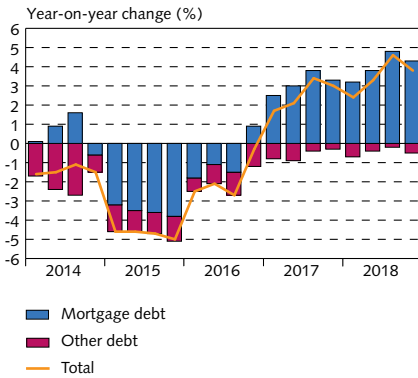
Chart I-7

New construction ratio<sup>1</sup> and population growth in greater Reykjavík<sup>2</sup>



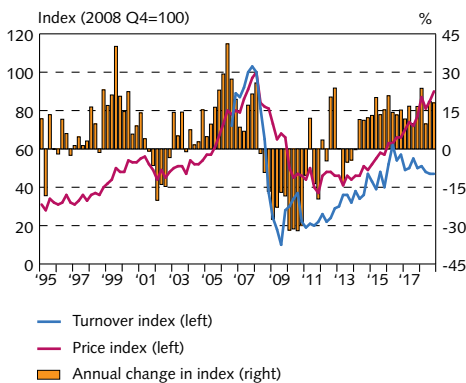
1. New construction relative to total housing stock. 2. Statistics Iceland forecast of nationwide population growth 2019-2020. Sources: Federation of Icelandic Industries, Registers Iceland, Statistics Iceland.

Chart I-8  
Real growth in household debt<sup>1</sup>  
Contribution of mortgage debt



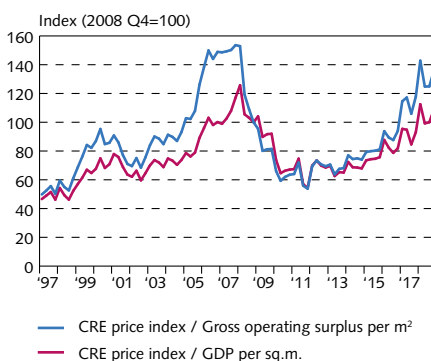
1. Deflated with the CPI. Growth in households' mortgage debt, other debt, and total debt.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-9  
Capital area commercial real estate market<sup>1</sup>



1. CPI-deflated commercial real estate price index, showing a weighted average price of office, retail, and industrial housing. The most recent observation is preliminary. The turnover index shows a four-quarter moving average, deflated with the CPI.  
Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

Chart I-10  
Capital area CRE prices and other economic variables<sup>1</sup>



1. All variables are set to a value of 100 as of Q4/2008 before ratios are calculated. Annual data for gross operating surplus are non-linearly interpolated. Annual data for the housing stock are linearly interpolated. Value for housing stock at year-end 2018 is preliminary.  
Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

Other factors point in the same direction. Labour importation has eased, and real wage growth has lost momentum. According to the Central Bank's February forecast,<sup>4</sup> demand pressures in the economy are projected to subside quickly and the supply of housing to rise at the same time.

### Mortgage debt still rising

Household mortgage debt increased by 5.7% in real terms in 2018, whereas the twelve-month rise in house prices was only 0.7% in February 2019. Mortgage debt has grown since the beginning of 2017, and the rate of growth picked up strongly in 2018. Total household debt accumulation has more or less kept pace with disposable income and GDP in the recent term, however, and is still considered modest.

House prices are high but have been rather stable in the past twelve months. On the other hand, growth in household debt outpaced the rise in house prices in 2018 and slightly exceeded the rise in disposable income. Alongside growing indebtedness and high house prices, housing market turnover is still strong. Under such conditions, systemic risk related to the housing market could accumulate, and mortgage loan quality could deteriorate if prices tumble.

### Commercial real estate market

#### Prices climbing unimpeded ...

The capital area commercial real estate (CRE) price index rose by 18% in real terms in 2018 and has increased by an average of more than 15% per year for the past five years.<sup>5</sup> Early in the period, the market was probably rebalancing and correcting after the post-crisis plunge in prices. Demand for housing has increased in line with growing economic activity. In the past two years, however, market turnover has fallen, which is often a precursor to price stagnation or a price slump. But at present, prices are very high by most measures, and GDP growth is slowing.

The components of the index suggest that the price of office space has risen moderately in real terms but that retail/wholesale and industrial property prices have risen steeply. Such an analysis is subject to considerable uncertainty, however.

#### ... and mismatches between prices and major determinants grow larger ...

The ratio of the CRE price index to gross operating surpluses is approaching its peak from the previous upswing, and it is now more than 50% above its 1997-2018 average of 89.6.<sup>6</sup> The same is true of

4. *Monetary Bulletin* 2019/1.

5. The index is based on the weighted average price per square metre in registered purchase agreements for retail/wholesale, office, industrial, and warehouse space in the capital area. Commercial real estate varies greatly in type and contracts are infrequent; therefore, the index is subject to some uncertainty. It does not include transactions with hotels and guesthouses. Transactions where holding companies, but not the properties themselves, are bought and sold are also excluded from the index.

6. Gross operating surplus is the amount a company has left in order to pay for contributed capital, credit financing, and investments, housing chief among them.



the ratio of the CRE price index to GDP, although the gap between these two ratios has widened. Similar developments can be detected during the run-up to the last two economic contractions. The ratio of prices to construction costs — either the Statistics Iceland building cost index or an index of standardised building cost estimates — also indicates increased tension.<sup>7</sup> The main difference between these two indices is that the building cost index measures the cost of building a specific reference flat and does not apply to commercial property, which the latter index does. Standardised cost estimates also include building lot prices. The two ratios move more or less in tandem, although the latter indicates less tension. That ratio is now 21% above its average, whereas the ratio versus the Statistics Iceland index is a full 34% above its average. Trend calculations give similar results, indicating that the CRE price index is now well above its long-term trend.

### ... while turnover declines

Although the metrics above suggest that prices have overshot, they apply to averages only. Prices in individual transactions can vary, and both location and type of housing make a significant difference. All measures suggest that purchases driven primarily by expectations of continued rises in the general price level are highly risky at present. Turnover as measured by the number of registered transactions has declined for two years in a row, a frequent harbinger of a stagnation or decline in prices. Last year's drop in turnover measured 5%, and in 2017 it was even larger, at 10%.

### Supply picking up slowly

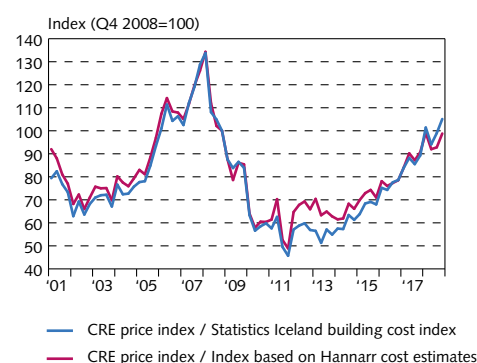
High prices tend to stimulate the supply of commercial property, but often with long lags. This contributes to price volatility, but it also means that economic conditions can change radically from the time construction begins to the time it ends.

There was a long slump in construction after the financial crisis. The stock of completed commercial property in greater Reykjavík has grown slowly since 2011, or by an average of 1.1% per year, which was also the growth rate in 2018. Growth has also been slow in regional Iceland, although it reached 2.4% last year. Now, however, an increase in supply is in the offing. At the beginning of 2018, nearly 88,000 more square metres of commercial property were under construction nationwide than in the previous year. This was the first increase in volume under construction since 2009. The beginning of 2019 saw another increase, with property under construction amounting to 4.6% of the total CRE stock. In Reykjavík, Kópavogur, and Mosfellsbær, new construction permits issued in 2018 provided for a full third more square metres than permits issued in 2017. Growth in construction in these municipalities was similar between 2016 and 2017, whereas the increase was smaller in Hafnarfjörður and Garðabær.

A cautious estimate of the CRE supply in greater Reykjavík (in square metres, and based solely on large, already existing projects)

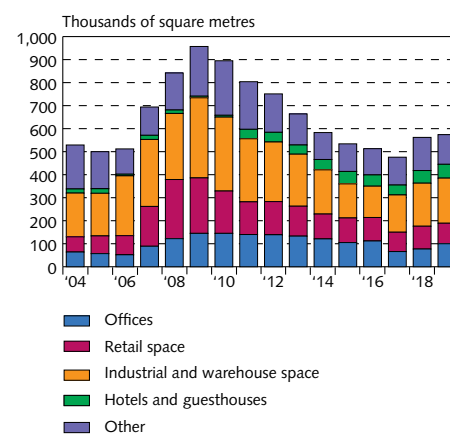
7. The standardised cost estimates from engineering firm Hannarr's Construction Key, for eight types of office, retail, and industrial property.

Chart I-11  
CRE prices relative to building costs<sup>1</sup>



1. Capital area commercial real estate price index relative to two building cost indices: Statistics Iceland's building cost index and an index of standardised building cost estimates for eight types of commercial property, designed by engineering firm Hannarr.  
Sources: Hannarr ehf., Registers Iceland, Statistics Iceland, Central Bank of Iceland.

Chart I-12  
Commercial real estate under construction  
2004-2019<sup>1</sup>



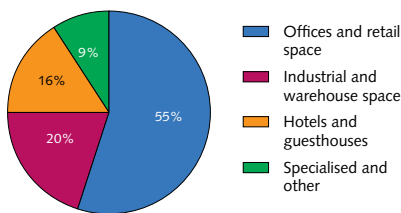
1. Commercial property nationwide in construction stages 1-6 at the beginning of each year.  
Sources: Reykjavík Economics, Registers Iceland.

indicates that office space will increase by a total of 6% and retail space by 5% over the next four years.<sup>8</sup> The actual increase will probably be considerably greater once smaller projects are included. Furthermore, there are several large projects involving construction of industrial and warehouse space, although these are difficult to quantify.<sup>9</sup> In addition, about 1,500 new hotel rooms are scheduled for completion in greater Reykjavík and nearby communities in the next two to three years, expanding the current supply by a fourth.

In November 2018, the occupancy rate was 92% for office space, 96% for retail space, and 93% for industrial and warehouse space. At around the same time, real estate firms Eik, Reitir, and Reginn had an occupancy rate of nearly 97%, perhaps indicating that they own relatively desirable property.

These figures do not necessarily indicate that an oversupply of property could develop in coming years, except perhaps in the hotel sector. According to the Central Bank's most recent forecast, GDP growth is expected to slow markedly in 2019. It is uncertain what impact weaker GDP growth — in particular, weaker private consumption growth and a contraction in tourist arrivals — will have on demand for commercial property. Operational difficulties are already apparent in the tourism industry and in related sectors such as restaurant operations.

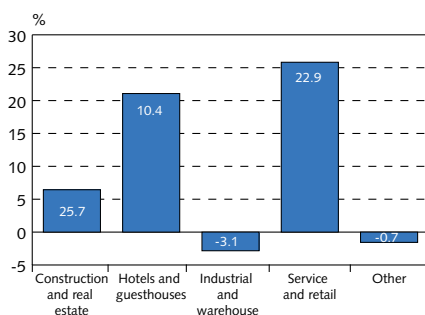
Chart I-13

CRE pledged as collateral, by property type<sup>1</sup>

1. Based on CRE firms' own analysis of their asset portfolios and a sectoral analysis of commercial banks' CRE-backed mortgage lending at year-end 2018. Excludes lending to fishing, agriculture, and transport sectors.

Sources: Annual reports of Eik, Reginn, and Reitir; Central Bank of Iceland.

Chart I-14

Real growth in CRE-backed lending, by debtor sector<sup>1</sup>

1. Real growth in CRE-backed lending by commercial banks in 2018, by debtor sector. The figure on each bar is the increase in b.kr., at constant December 2018 prices.

Sources: Statistics Iceland, Central Bank of Iceland.

### Surge in CRE-backed lending ...

The commercial banks' CRE-backed lending grew by 10.2% at constant prices in 2018, to 936 b.kr. at the year-end. About a fifth of these loans were to companies in fishing, agriculture, transport, and transit. In these sectors, CRE-backed loans are also secured by other collateral that is nearly five times as valuable as the buildings. As a result, developments in CRE prices do not have a decisive impact on loan quality. Loans to sectors other than those mentioned above totalled nearly 747 b.kr. at the end of 2018 and accounted for about a fourth of all of the banks' customer loans. This portion of the credit stock grew by 8.0% year-on-year at constant prices in 2018.<sup>10</sup>

Loans to construction and real estate firms increased most in krónur terms in 2018. Such companies build, own, and operate commercial property of all types. However, growth was proportionally greatest in lending to firms in hotel operations and to retail and services companies, which primarily use office and retail space. As Chart I-13 shows, a rough estimate indicates that just over half of the commercial property used as collateral is office and retail space, while a fifth is industrial and warehouse space. Hotels and guesthouses account for nearly a sixth, and the remainder is miscellaneous specialised housing. Retail and office space weigh heavily. Lending to

8. Based on an analysis of the capital area commercial real estate market, carried out by Reykjavík Economics for the Central Bank in November 2018-January 2019.

9. On the one hand, it is likely that some buildings will be demolished to accommodate those being built. On the other hand, in order to determine the impact on the market as a whole, it would be necessary to examine the increase relative to the stock net of specialised industrial property, which constitutes a large share of the total.

10. The discussion that follows is based on CRE-backed loans net of loans to these sectors.

these sectors increased markedly in 2018, and prices rose steeply. It is important to monitor the risk associated with this, as well as the risks attached to the hotel sector, particularly in view of steeply rising debt.

### ...but LTV ratios have fallen

Credit cycles are closely related to prices in asset markets. The two can exacerbate one another with a debt-price spiral.<sup>11</sup> Research indicates, among other things, that in order to contain such spirals, banks must maintain stringent lending standards throughout periods of price volatility and even tighten them as asset prices continue to rise.<sup>12</sup>

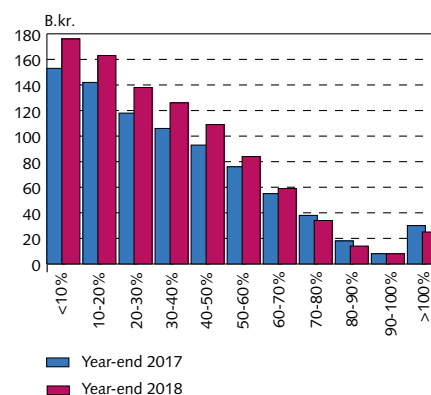
Seen in this light, the decline in loan-to-value (LTV) ratios of CRE-backed loans in 2018 was a sign of strength. Chart I-15 shows CRE-backed lending by commercial banks by LTV range at the beginning and end of 2018. Amounts in all LTV ranges below 70% increased during the year, whereas amounts in all ranges above 70% declined. The portion of loans with an LTV ratio of more than 80% contracted by 15% year-on-year, to just over 47 b.kr. at the year-end. The drop in LTV ratios was driven largely by rising asset prices, although stricter lending terms may have been a factor as well. While loans increased by 8.0% in real terms, the value of the commercial property provided as collateral rose 15.8%.<sup>13</sup> The increase in collateral value is due in part to a higher price per square metre for the same properties and in part to increased volume and changed composition. As a rough estimate, the banks, in updating their appraisals of collateral, assumed an average real price rise of 6-10% per square metre, which is much smaller than the CRE price index indicates.

On the whole, it appears that the banks were successful in limiting their exposures to CRE-related risk in 2018. The hotel sector stands out, however. The combined amount of loans to the sector with an LTV ratio of over 80% increased by about 30% year-on-year, although it accounts for only a small share of the total.

There were few non-performing CRE-backed loans in 2018, as can be expected during an upswing. The facility-level non-performing loan ratio was 1.12%, marginally higher than in 2017.<sup>14</sup> While this is a sign of strength, it should be borne in mind that a decline in non-performing loans can temporarily go hand-in-hand with accumulation of systemic risk.

When commercial property prices rise rapidly and debt increases strongly, there is a greater probability that systemic risk will accumulate. Prices are now quite high and supply is increasing with a considerable lag at a time when debt is growing rapidly and GDP growth is slowing down.

Chart I-15  
CRE-backed mortgages, by LTV ratio



1. Real growth in commercial bank lending in 2018, by loan-to-value ratio. Each loan is divided into appropriate LTV ranges, and the total in each range is then calculated.  
Sources: Statistics Iceland, Central Bank of Iceland.

11. See, for example, Bernanke, B., Gertler, M., and Gilchrist, S. (1994). The financial accelerator and the flight to quality. *Review of Economics and Statistics*, 78, and Kiyotaki, N., and Moore, J. (1997). Credit cycles. *Journal of Political Economy*.

12. See Davis, E.P., and Zhu, H. (2011). Bank lending and commercial property cycles: Some cross-country evidence. *Journal of International Money and Finance*, 30.

13. The value of other collateral rose by 24.1% over the same period. At the end of 2018, commercial property accounted for 70% of collateral and other assets for the remaining 30%.

14. The facility-level non-performing loan ratio is based on individual loans at least 90 days in arrears.



## II Financial institutions' operating environment

Economic developments in Iceland have been favourable in recent years, with strong GDP growth, a sustained current account surplus, and a year-by-year increase in households' and businesses' resilience. Prospects for the future have grown more uncertain, however. The outlook is for a marked slowdown in GDP growth in 2019, with a shrinking current account surplus and a worsening global GDP outlook, as well as elevated uncertainty about the global economy. Terms of trade have continued to deteriorate in recent months, and the real exchange rate is now somewhat lower than it was a year ago.

Households and business have taken advantage of favourable conditions in recent years by deleveraging and strengthening their financial position. Now there are signs that this strength has peaked, however, and liabilities appear to be growing faster than assets. Debt grew significantly in 2018, but indicators imply that growth has slowed. In spite of this turnaround, borrowers' resilience could be put to the test if the economic environment takes a sudden turn for the worse.

### Macroeconomic environment and financial markets

#### GDP growth set to weaken

Iceland has enjoyed robust GDP growth in the past few years, but the outlook is now for a considerable slowdown. Output growth measured 4.6% in 2018 and was driven mainly by private consumption growth. The outlook for reduced GDP growth is due mainly to weaker growth in domestic demand and exports, with the prospect of a contraction in tourism.

Inflation spiked in H2/2018, measuring 3.7% in December, owing mainly to the rise in import prices, a result of the depreciation of the króna in the autumn. Inflation has tapered off since the beginning of 2019, measuring 2.9% in March. Households' and businesses' long-term inflation expectations have risen since end-2018,<sup>1</sup> whereas market agents' expectations have fallen. All groups expect inflation to be above the Central Bank's 2½% inflation target.

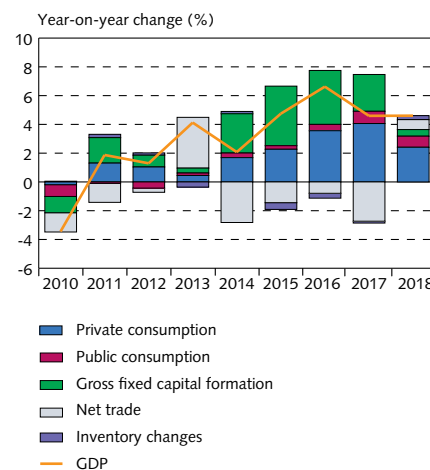
The ratio of Treasury debt to GDP declined by over six percentage points year-on-year, to 30% by end-2018. The interest rate spread between eurobonds issued by the Icelandic Treasury and comparable German bonds has narrowed in the past few years and was less than 1% throughout 2018. Iceland's sovereign credit rating was unchanged last year.<sup>2</sup>

#### The breakeven inflation rate in the bond market has fallen

The Central Bank's key interest rate was raised to 4.5% in November 2018. Yields on indexed and nominal Treasury bonds have fallen in the recent term, although nominal yields have fallen more. The reduc-

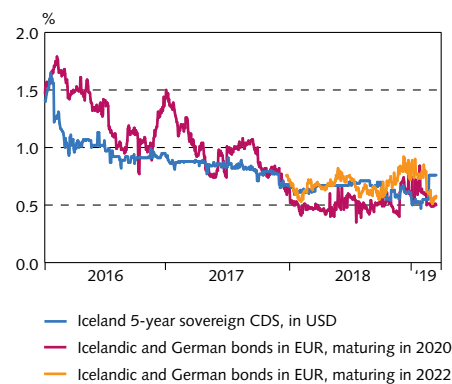
1. Gallup's spring survey of households and Iceland's 400 largest companies.  
2. For further information on the ratings from Moody's, Fitch, and S&P, see the Government Debt Management website: <http://www.lanamal.is/fagfjarestar/lanshaefismat>, or the Central Bank website: <https://www.sedlabanki.is/um-sedlabanka-islands/lanamal-rikisins/gogn-matsfyrirtaekja/>.

Chart II-1  
Output growth<sup>1</sup>



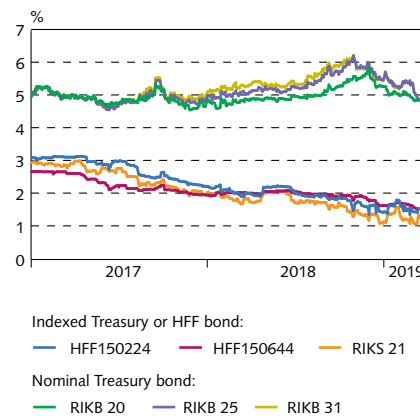
1. Contribution of individual components to output growth.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-2  
Government bond spreads



Sources: Bloomberg, Thomson Reuters.

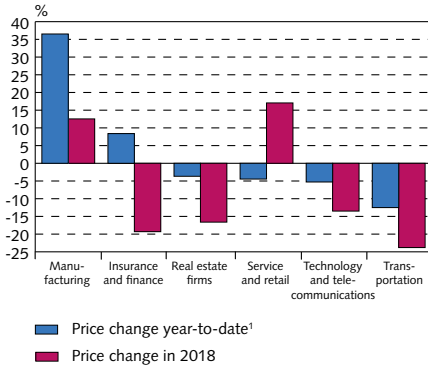
Chart II-3  
Treasury bond yields



Source: Central Bank of Iceland.

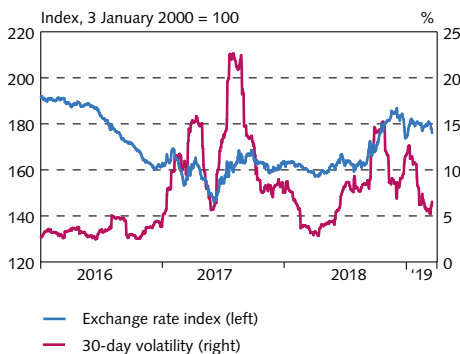
Chart II-4

Share price developments, listed companies, by sector



1. Through end-March 2019.  
Source: Kodiak.

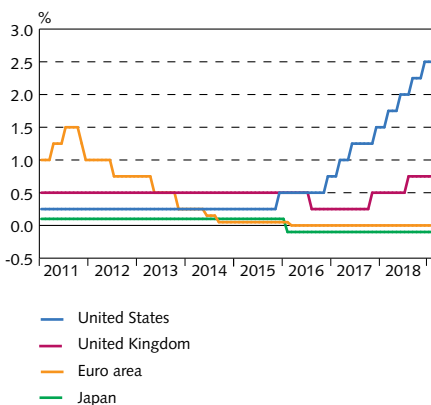
Chart II-5

Exchange rate of the króna<sup>1</sup>

1. Exchange rate index based on average imports and exports, narrow trade basket (1%).  
Source: Central Bank of Iceland.

Chart II-6

Policy rates in selected economies



Source: Thomson Reuters.

tion in the past few weeks is probably related in part to the deactivation of the Central Bank's special reserve requirement and market agents' lower inflation expectations. Long-term nominal bond yields have fallen more than short-term yields, and the slope of the yield curve has flattened slightly. Total bond market turnover declined by 14% year-on-year, to 1,065 b.kr. in 2018.

### Equity market blows hot and cold

All but four of the 18 companies listed on the Nasdaq Iceland exchange saw their share prices fall in 2018. In 2019 to date, however, seven companies' share prices have risen. The OMXI8 share price index has risen 19% year-to-date (Chart II-7 in Appendix I), driven mainly by a 44% increase in Marel shares. Marel accounts for 35% of listed companies' total market capitalisation and just over half of Main List companies' market cap. As a consequence, the OMXI8 is highly dependent on movements in Marel share prices. Developments in individual companies' stock prices have varied greatly by sector in 2019 to date.

At the end of March 2019, the market capitalisation of companies listed on the stock exchange totalled 1,054 b.kr., an increase of 10% since the beginning of the year. At Heimavellir's 14 March shareholders' meeting, it was decided to delist the company from the main market. Heimavellir was listed on the stock market on 24 May 2018. Shares in Kvika banki were admitted for trading on the main market on 28 March. Kvika had previously been listed on the First North market. Stock market turnover has remained unchanged between years in the first three months of 2019.

Direct pledges in the Icelandic equity market totalled 14.1% as of end-February, an increase of 2.6 percentage points since mid-2018.<sup>3</sup> The pension funds hold about 38% of listed Icelandic companies in terms of market value. The assets are not pledged. Therefore, direct pledges of shares held by owners other than pension funds total just over 24%, a little more than in mid-2018.

### Unrest in the foreign exchange market

In autumn 2018, the foreign exchange market grew restless — the króna weakened and volatility increased — partly due to uncertainty about tourism. The Central Bank then intervened in the market for the first time in nearly a year and sold foreign currency. Since then, the Bank has intervened eleven times, ten times on the selling side. At the end of March, the exchange rate was down 16% from a year earlier. Amended rules on capital flows to and from Iceland took effect in early March, and the market has been relatively volatile in the past few weeks. The special reserve requirement was lowered to 0%, and restrictions on offshore krónur were lifted. In addition, there is now considerable uncertainty about the tourism industry.

The real exchange rate in terms of relative consumer prices held broadly stable early in 2018 but fell markedly during the autumn, fol-

3. Direct pledging is the average percentage of pledged shares for all listed companies on both the Main List and the First North market, based on the relative weight of each company. Only direct pledges are considered; therefore, no account is given to general collateral in shares or indirect collateralisation via derivatives contracts. As a result, the pledge ratio in the Icelandic equity market is probably higher.

lowing the nominal depreciation of the króna, and by end-February 2019 it was down more than 8% between years. Terms of trade have deteriorated steadily since mid-2017, and by the end of 2018 they were roughly the same as in mid-2014, owing in part to an overall rise in import prices.

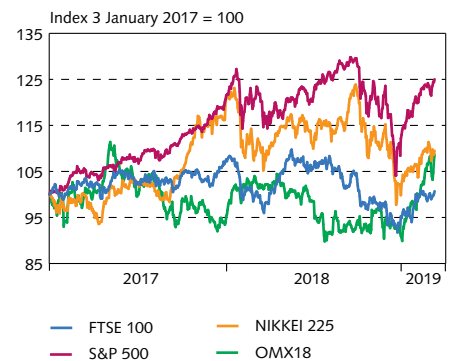
### Global GDP growth outlook deteriorates, and uncertainty increases

GDP growth among Iceland's main trading partners measured 2.1% in Q3/2018, but the global output growth outlook has worsened as a result of economic and geopolitical uncertainty. This is particularly the case for the eurozone, where, at the beginning of March, the European Central Bank (ECB) lowered its output growth forecast for 2019 to 1.1%, from its December projection of 1.7%. Public and private sector debt is still above sustainability thresholds in many European countries. The tariffs imposed by the US and China on each other's goods have adversely affected the GDP growth and inflation outlook in both countries.<sup>4</sup> Because of their size, a poorer outlook for the US and China can strongly affect prospects for global output growth. In the UK, there is continued uncertainty about how Britain's exit from the European Union (EU) will play out, after the Brexit agreement was voted down in Parliament. The uncertainty facing Iceland as a result of Brexit has subsided somewhat, however, following the signing of a preliminary agreement on key issues relevant to the two countries.<sup>5</sup> For emerging market economies (EME), the GDP growth outlook varies from one country to another, as many EMEs have faced headwinds in recent years. There is a chance that risk aversion among investors could rise, which could erode conditions worldwide. Factors that could change investors' attitudes include an unexpected adjustment of monetary policy from an accommodative stance to a neutral or restrictive one, a rapid cooling of global output growth, protracted trade disputes, or a hard Brexit without an agreement between the parties.

The outlook is for lower global inflation in the coming term, owing to lower oil prices and the worsening GDP growth outlook. The US Federal Reserve raised its policy rate by 0.25 percentage points in December, in line with market expectations. On 20 March, the Fed signalled that its key rate would be held unchanged for a while, in an abrupt shift from its previous position. On 7 March, the ECB announced that its key rate would remain unchanged through end-2019. At the same time, the bank announced a new series of market-based measures known as targeted longer-term refinancing operations, which will take effect in September 2019. The ECB will also offer long-term low-interest loans to banks in order to ensure continued favourable borrowing conditions, offering banks an incentive to increase their lending to businesses and consumers, after discontinuing its monthly bond purchase programme last December.

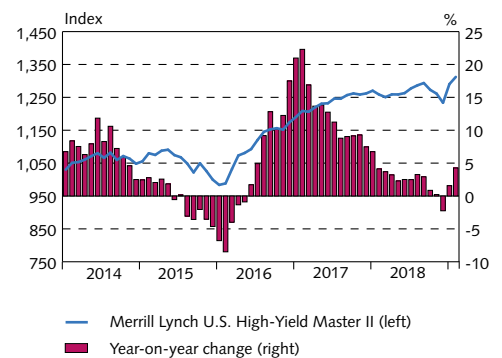
Share prices have risen widely in 2019 to date, after a steep drop in major stock indices late in 2018. Prices fell particularly sharply

Chart II-7  
Share price indices



Source: Thomson Reuters.

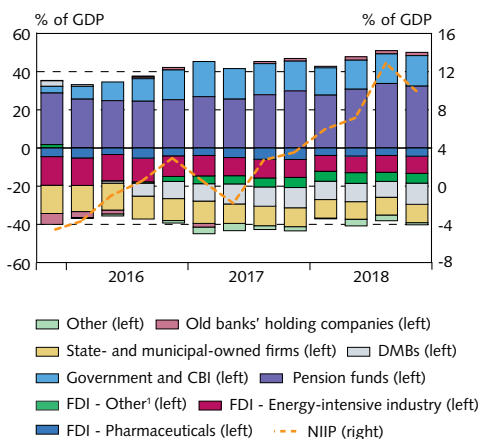
Chart II-8  
High-yield bonds<sup>1</sup>



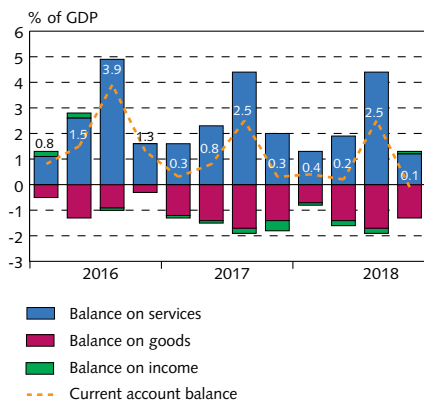
1. Merrill Lynch U.S. High-Yield Master II Index is a benchmark for high-yield corporate bonds issued in the US.  
Source: Thomson Reuters.

4. OECD *Interim Economic Outlook* March 2019.

5. Agreements on reciprocal citizens' rights, free trade and landing permits, and fly-over authorisations.

Chart II-9  
Net IIP

1. Excluding old banks' holding companies and pension funds.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-10  
Current account balance<sup>1</sup>

1. Components are calculated as the amount in each quarter relative to GDP for the year. The effects of the old banks' holding companies and transactions with ships and aircraft are ignored.  
Sources: Statistics Iceland, Central Bank of Iceland.

in the US, where investors were concerned about the possibility of an economic slowdown due to the trade dispute with China and market agents were expecting further policy rate hikes from the Fed. In October, the Fed signalled that rates were below neutral territory, whereupon investors began to shed risky assets such as high-yield bonds and equities. Market volatility soared in December, as the VIX implied volatility index rose substantially. The turnaround in the financial markets in early 2019 was supported by the Fed's decision not to raise interest rates as quickly as had previously been indicated. Investor demand for equities and other riskier assets has grown, as the past few years' low returns on risk-free assets such as Treasury bonds have tempted investors to seek out higher-risk assets in their search for higher returns.

## Iceland's international investment position

### IIP improves between years, but current account surplus narrows

Iceland's net international investment position (NIIP) continues to improve. It was positive by nearly 10% of GDP at the end of 2018, an improvement of 6 percentage points year-on-year. Of that amount, pension funds' external position improved by 2.5 percentage points. Net external liabilities totalled 22% of GDP at the end of 2018, after improving by 8 percentage points between years.<sup>6</sup>

The current account surplus totalled 81 b.kr., or 2.9% of GDP, in 2018. In order to estimate foreign currency flows due to external trade more accurately, it is useful to examine the current account balance excluding the effects of the old banks' holding companies and transactions with ships and aircraft. Thus measured, the current account surplus amounted to 3.2% of GDP and narrowed by 0.7 percentage points between years, mainly because of the surplus on services trade, which shrank by 25 b.kr. year-on-year as a result of an increase in Icelanders' overseas travel. In addition, there was a large difference in other imported business services, which includes research and development. On the other hand, the current account balance measured in this manner showed a deficit in Q4/2018, after having been in surplus virtually without interruption since the financial crisis in 2008. According to the Central Bank forecast published in *Monetary Bulletin* 2019/1, the outlook for the current account is for the surplus to shrink rapidly in the next three years, although the balance is expected to remain slightly positive. Increased uncertainty about tourism-generated revenues could affect actual developments, however.

### Significant refinancing need concurrent with rising uncertainty about interest rates

Domestic firms' debt service burden will be relatively heavy in 2020 and 2021, primarily because of large maturities facing the commercial banks and a 50 b.kr. eurobond issued by the Treasury, set to mature in 2020. Terms available to domestic borrowers in foreign capital markets began to deteriorate in H2/2018 but have improved in the past few weeks, as can be seen in the terms offered to the commer-

6. Excluding equity securities, unit shares, derivatives, and FDI in corporate equity.



cial banks, which are discussed further in the section on the banks' liquidity. If there are no plans to pay down Treasury foreign debt in the coming term, consideration must be given to the timing of debt refinancing, particularly in connection with the banks' refinancing needs in the years to come, as one of the roles of the Treasury's foreign bond issuance is to pave the way for resident borrowers to tap foreign credit markets.

### Large international reserves

At the end of February 2019, the Central Bank's international reserves totalled 752 b.kr., and the ratio of the reserves to the International Monetary Fund's (IMF) reserve adequacy metric, or RAM, was 155% at the end of 2018. The reserves declined by 12 b.kr. at constant exchange rates in 2018, with nearly 3 b.kr. of the reduction due to net foreign currency sales by the Bank. In krónur terms, however, the reserves grew by 50 b.kr., mainly as a result of the depreciation of the króna.

### Offshore krónur released and movement of capital further liberalised

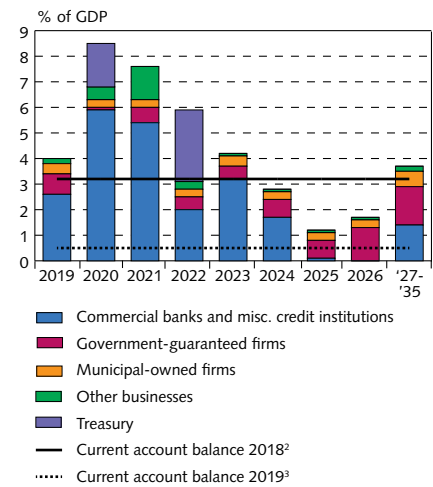
The capital controls on the remaining stock of offshore krónur were lifted at the beginning of March. Owners of offshore krónur are now free to convert them in the foreign exchange market, and those who have owned their krónur continuously since before the capital controls were introduced may dispose of them without restriction in the onshore market. Although it is uncertain whether this liberalisation will put downward pressure on the króna, one of the reasons the Bank holds ample international reserves is to address potential outflows relating to the removal of capital controls.

The interest rate differential with abroad has narrowed in recent years, and the outlook is for the output gap to close almost entirely by the end of 2019.<sup>7</sup> In addition, net inflows of foreign capital for new investment have contracted in the recent term and were virtually non-existent in H2/2018. In view of changed circumstances, the Central Bank lowered the special reserve ratio twice: first, in November 2018, from 40% to 20%, and then, in March 2019, to 0%. Investors are therefore free to invest foreign capital in bonds and high-yielding deposits without restriction. The reduction of the special reserve ratio also lifted restrictions on previously existing reserve amounts. Until now, most of the capital in special reserve accounts has been invested in securities and not exported from Iceland.

Early indications suggest that the liberalisation of offshore krónur will not give rise to a burst of capital flight. By late March, the stock of offshore krónur had declined by 11 b.kr., but some of that amount has been re-imported. In addition, figures on non-residents' capital inflows imply that investment has picked up since the special reserve ratio was lowered to 0%. Non-residents invested primarily in Treasury bonds in March, or for a net total of around 9 b.kr.

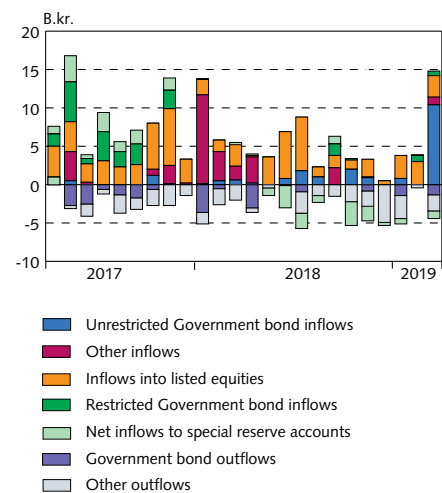
Freedom to transfer capital to and from Iceland has therefore been greatly increased, and the capital controls have now been lifted

Chart II-11  
Repayment profile of long-term foreign debt<sup>1</sup>



1. Based on position at end-2018 and exchange rate of 26 February 2019. 2. Excluding the effects of the old banks' holding companies and transactions with ships and aircraft. 3. Central Bank forecast from *Monetary Bulletin* 2019/1.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-12  
Registered new investment using foreign capital

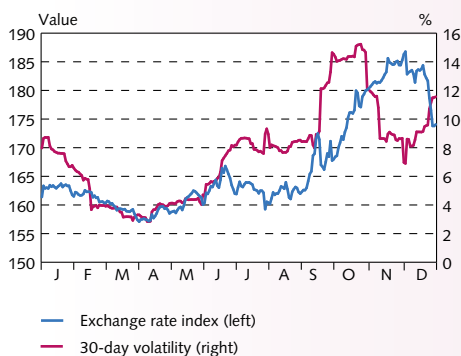


Source: Central Bank of Iceland.

7. See *Monetary Bulletin* 2019/1.

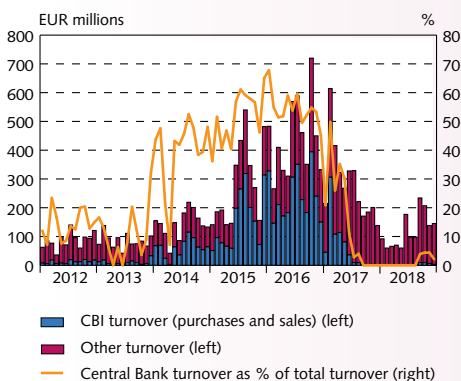
## Box II-1 Foreign exchange market

Chart 1  
Exchange rate of the króna<sup>1</sup>  
2018



1. Exchange rate index based on average imports and exports, narrow trade basket (1%).  
Source: Central Bank of Iceland.

Chart 2  
Foreign exchange market turnover



Source: Central Bank of Iceland.

virtually in full. The controls that remain are restrictions on derivatives trading for non-hedging purposes, foreign exchange transactions with krónur undertaken between residents and non-residents without the intermediation of a financial institution, and cross-border transfers of domestic currency due to transactions with offshore krónur.

The króna depreciated by nearly 6.5% in 2018. Early in the year it was relatively stable, but it began to slide in September and continued to weaken virtually unimpeded throughout the year, apart from an uptick during the days just before Christmas. Concurrent with the depreciation in the autumn, short-term volatility increased and the Central Bank intervened in the market four times, including three times when the króna was weakening.

The depreciation of the króna in autumn 2018 appears to be attributable to changed expectations about the equilibrium exchange rate, which stemmed in part from uncertainty about domestic airline operations rather than from strong capital outflows. Alongside the reassessment of economic situation during the autumn, a number of factors appear to have contributed to the decline in the exchange rate, including increased forward transactions with the króna, residents' accumulation of foreign currency deposits, and limited foreign currency inflows in connection with new investment by non-residents. In addition, pension funds bought significant amounts of foreign currency early in the year but scaled their purchases down as the króna weakened. This could indicate that the pension funds may have been relatively inactive in the market but merely bought the currency that was on offer.

The main foreign currency flows in 2018 were as follows (see also Table 1):<sup>1</sup>

- A simple approximation of trade-related foreign currency inflows indicates that they totalled 88 b.kr. in 2018 and contracted by just under 14 b.kr. from the prior year.<sup>2</sup>
- Households and businesses increased their foreign-denominated deposits with deposit institutions by over 30 b.kr. at constant exchange rates, including 15 b.kr. during the autumn.
- The net spot position of the domestic systemically important banks' (D-SIB) foreign exchange balance rose by 3 b.kr. between years, primarily to cover forward contracts with customers wishing to hedge against the depreciation of the króna. As a result, the banks bought more currency than they sold.<sup>3</sup>
- The pension funds were active in the domestic foreign exchange market in 2018. Their net foreign currency purchases, totalling 110 b.kr., stemmed from foreign investment and accumulation of foreign-denominated deposits with domestic commercial banks. During the last four months of the year, they bought less currency, instead using their FX deposits for foreign investment, reducing their deposits by 46 b.kr.
- Investment by non-residents contracted markedly year-on-year. Net foreign currency inflows due to new investment totalled an

1. Net foreign currency flows are only an estimate, as individual items are subject to considerable uncertainty, which has increased markedly since the capital controls were lifted.
2. There is some uncertainty about whether current account transactions cause foreign currency flows, and when. In order to simplify the estimation of trade-related foreign currency flows, it is useful to examine the current account balance excluding the effects of the old banks' holding companies and the effects of transactions with ships and aircraft on the balance on goods.
3. Because restrictions on speculative derivatives trading are still in place, these transactions are due to balance sheet hedging or external trade-related derivatives contracts.

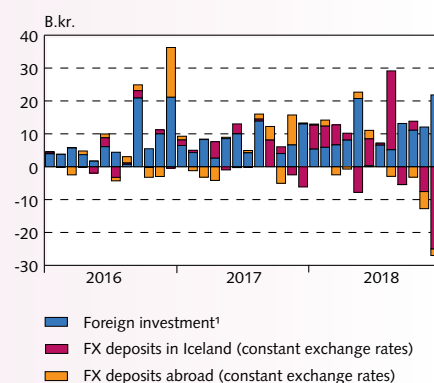
estimated 21 b.kr. in 2018, or about one-fifth of the year-2017 total. In Q4, net flows were negative, mainly because of non-residents' sales of shares listed on the Nasdaq Iceland exchange and occasional sales of unlisted equity securities.

- Relatively few commercial enterprises have access to foreign credit markets. Apart from the commercial banks, large State- and municipal-owned companies are among the largest domestic borrowers abroad. Their payments net of new financing totalled about 25 b.kr. during the year.

Regulatory provisions on capital flows to and from Iceland were amended in early March. The Rules on the Special Reserve Requirement were amended, and investors with foreign capital are now permitted to invest in bonds and high-yielding deposits without restrictions. The capital controls on offshore krónur were lifted at the same time. It is difficult to say what impact these measures will have on the domestic foreign exchange market. It is possible that outflows of offshore krónur will be offset by increased inflows for new investment. Continued uncertainty about the status of domestic tourism companies and the position of the economy could temporarily undermine foreign investors' interest in investing in Iceland. The Central Bank holds ample international reserves, however, and can cover outflows of offshore krónur if need be. The section on Iceland's international investment position covers this in greater detail. In addition to the marked uncertainty about non-residents' capital flows, the Central Bank forecasts that the current account surplus will be smaller than in recent years. If the pension funds continue as they have and buy foreign currency amounting to 4% of GDP, it could put pressure on the króna, other things being equal.

Chart 3

Pension funds' foreign securities investment and month-on-month changes in FX deposits



1. New investment and reinvestment.  
Source: Central Bank of Iceland.

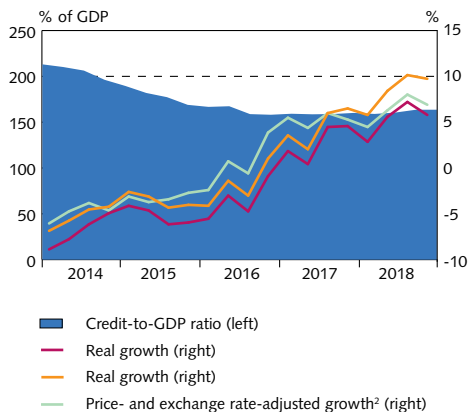
Table 1 Estimated foreign currency flows 2018<sup>1</sup>

	B.kr.
Current account balance <sup>2</sup>	88
Net flows of known items	-113
– resident entities' new foreign borrowings <sup>3</sup>	26
– foreign loan repayments <sup>4</sup>	-53
– net FX inflows for registered new investment <sup>5</sup>	21
– pension funds' and third-pillar pension custodians' FX transactions <sup>6</sup>	-109
– increase in payables net of receivables	-2
Change in banks' and other resident entities' FX position	-20
– domestic systemically important banks (D-SIB): Increase in residents' FX deposits <sup>7</sup>	-31
– households	-13
– commercial enterprises	-19
– domestic systemically important banks (D-SIB): Reduction in FX assets	14
– domestic systemically important banks (D-SIB): Increase in long position in foreign exchange balance to cover forward agreements with customers	-17
– new credit system lending in FX to resident borrowers <sup>8</sup>	15
Net market-based and direct foreign exchange transactions by the Central Bank	3

1. Net foreign currency flows are only an estimate, as individual items are subject to considerable uncertainty. 2. Estimated foreign currency flows due to the current account balance; however, it is not a given that all transactions cause foreign currency flows. The effects of the old banks' holding companies and transactions with ships and aircraft are ignored. 3. Excluding commercial banks, Treasury, fishing companies, and transport and transit companies. Assuming that new foreign loans are used in Iceland. 4. Excluding commercial banks, Treasury, fishing companies, and transport and transit companies. 5. New investment plus inflows into special reserve accounts with the Central Bank. Based on reported new investment using foreign capital; investors have three weeks to report that the transactions have taken place. The grace period for notification could therefore create mismatches between years in FX flows due to new investment. 6. Preliminary figures. 7. At constant exchange rates. Excluding pension funds and the old banks' holding companies. Assuming that domestic commercial banks hold foreign assets to cover potential outflows of foreign-denominated deposits. 8. Based on the change in the book value of total lending at constant exchange rates. Assuming that domestic borrowers convert the loan amount to krónur or use it to purchase goods and services from abroad, which would then show as an increase in net foreign currency sales due to external trade.

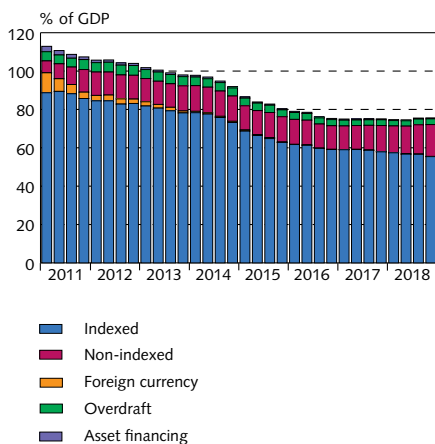
Sources: Commercial banks' annual accounts, Statistics Iceland, Central Bank of Iceland.

Chart II-13  
Private sector credit growth<sup>1</sup>



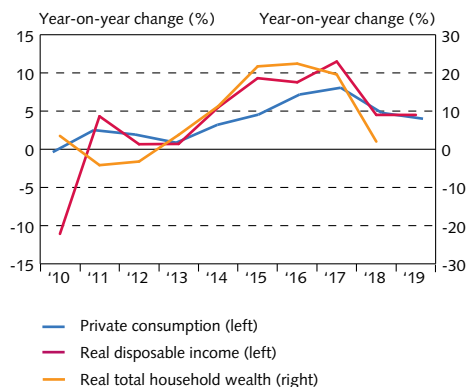
1. Lines show yearly growth rates. 2. CPI-indexed credit at fixed prices and foreign-denominated credit at fixed exchange rate.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-14  
Households: Debt relative to GDP



Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-15  
Private consumption, disposable income and household wealth<sup>1</sup>



1. Central Bank baseline forecast for 2019, published in *Monetary Bulletin* 2019/1. Total household wealth is net financial wealth, including housing wealth and net of household debt.  
Sources: Statistics Iceland, Central Bank of Iceland.

## Households' and businesses' debt and position

### Growth in debt

Private sector<sup>8</sup> debt increased by 5.6% in real terms in 2018. Growth in debt accelerated early in the year, peaking at almost 7% in Q3. It subsided, however, in Q4, even though the stock of foreign debt had grown because of the depreciation of the króna during the quarter. Real growth in corporate debt measured 7.1% at the year-end, far outpacing growth in household debt, which measured 3.8%. The private sector debt-to-GDP ratio increased by 3.6 percentage points year-on-year, in spite of strong GDP growth.

### Households

#### Little change in households' financial position ...

Households' financial position has improved markedly in recent years, driven by steeply rising asset prices. Debt is now growing but has not overtaken GDP growth. At the end of 2018, the household debt-to-GDP ratio was 76%, which is broadly similar to the two years beforehand. Residential mortgage debt is rising, but other household debt is declining at the same time, perhaps due to improved access to refinancing. For the first time since 2010, household debt grew faster than disposable income. Non-indexed debt continues to gain ground at the expense of indexed debt. By end-2018, 22% of total household debt was non-indexed. There are various reasons for this, but higher inflation and inflation expectations are probably a factor. The changed composition of debt is discussed in Box II-2, which focuses on the residential mortgage market.

Capital area real estate prices have been broadly unchanged for the past year, and in February 2019 the real year-on-year increase measured only 0.7%. The surge of the past few years, with prices rising by more than 10% in real terms between 2016 and 2017, has therefore halted. Because of the past year's small rise in house prices, households' housing wealth has grown more slowly than it did previously.

#### ... and no change in non-performing loans

Individual bankruptcies increased in number in 2018, after having fallen in recent years. The number of individuals on the default register has declined very little since mid-2018, after a long downward trend. The share of non-performing household loans from the commercial banks and Housing Financing Fund (HFF) was 2.1% at the beginning of February 2019, the lowest since the crisis struck in 2008. Fewer individuals applied to the Office of the Debtors' Ombudsman for debt mitigation in 2018 than in 2017, although the number of applicants aged 20-29 increased. The number of debt mitigation agreements fell by more than half between years, and all of the successful applicants were non-homeowners.

8. The private sector is defined here as households and non-holding companies. Government-owned companies are included as well.

### Private consumption growth eases

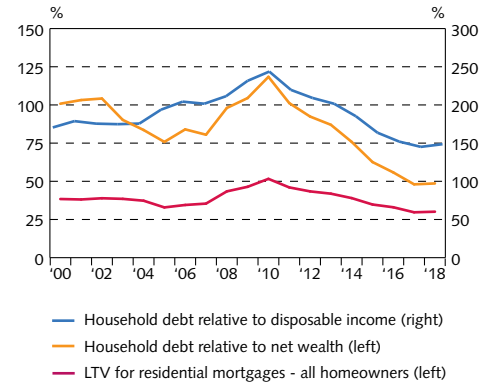
Private consumption grew by 4.8% in 2018, slightly less than in the years beforehand. According to the Central Bank's most recent macro-economic forecast, it will continue to ease in coming years. Disposable income has grown rapidly in the past few years — much faster than private consumption — but the two more or less kept pace with one another in 2018, indicating that households have less propensity to save than before. The Central Bank forecast assumes that both disposable income and private consumption will grow more slowly in the next few years.

### How will households fare if GDP growth slows?

Icelandic households have benefited from the robust output growth of the past few years. They have used the scope created by strong income growth to deleverage and step up saving. Their net wealth has increased significantly, partly due to rising house prices. Loan-to-value ratios on mortgages are low in historical context, and the number of individuals who owe a large share of their disposable income is falling.<sup>9</sup> Households' overall resilience has grown markedly in recent years. Households are much better prepared than before to face weaker growth in GDP and disposable income.

9. A frequently used metric is debt exceeding 450% of annual disposable income.

Chart II-16  
Household debt and LTV ratio for residential mortgages<sup>1</sup>



1. Household debt relative to net wealth excluding pension savings and disposable income.  
Sources: Statistics Iceland, Central Bank of Iceland.

The process of financing home purchases has changed significantly in recent years. House prices have soared after the doldrums of the post-crisis years, and the group of lenders that dominate the mortgage market has changed somewhat. The pension funds stepped up their mortgage lending activity in 2016 by offering more generous terms and higher loan-to-value (LTV) ratios, and in recent years they have granted over 40% of net new mortgage loans. The banks have also seen strong lending growth, while the Housing Financing Fund (HFF) has loaned very little in the past few years and has experienced large-scale loan retirement. Now, however, there are signs that pension funds and banks alike are tightening their lending requirements, and the banks have raised their mortgage rates, albeit to differing degrees.

### Rising house prices — increased collateral capacity

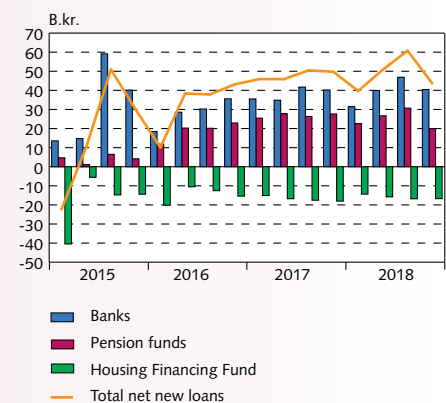
The past few years' surge in house prices has boosted housing equity and enabled many households to refinance costly consumer loans with much more favourable mortgage loans. Data on household debt support this hypothesis, as mortgage debt has risen while other household debt has contracted.

House price inflation has slowed in the past year, yet mortgage debt has increased over the same period. The average LTV ratio for residential mortgages is still low in historical context, however, and after a steady decline in 2010-2017 it has been broadly unchanged in the past year. On the other hand, it is unlikely that new homeowners will be able to use housing wealth to pay down consumer debt to the same degree as those who already owned property before the recent spate of price increases.

### Box II-2

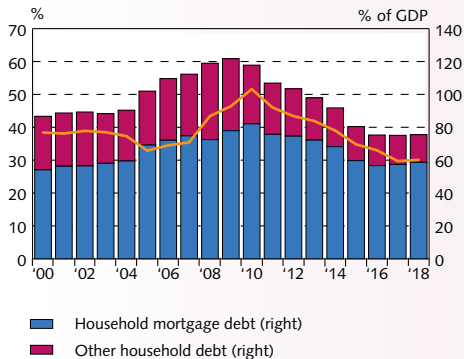
## Residential mortgage market

Chart 1  
Net new lending to households<sup>1</sup>



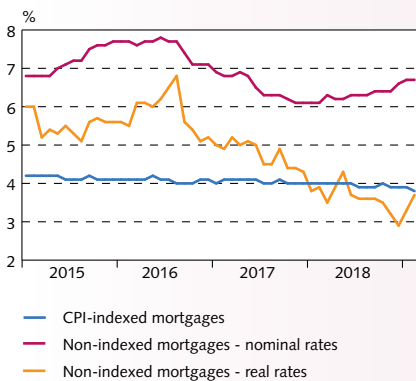
1. Net new loans to households from banks, pension funds, and the HFF. Data on retirement of pension fund loans prior to September 2015 are not available. At constant December 2018 prices.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 2  
Household debt relative to real estate values and GDP



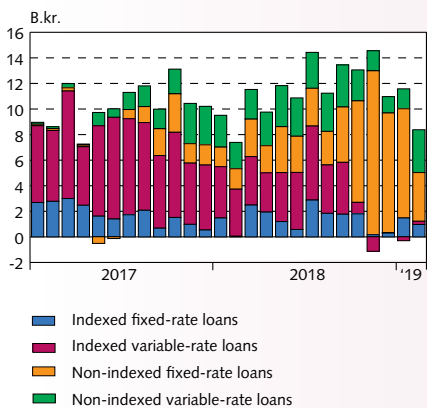
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 3  
Interest rates on new mortgage loans  
Deposit institutions<sup>1</sup>



1. Average interest rates on new mortgage loans granted by banks. Real interest rates on indexed and non-indexed mortgage loans. Sources: Statistics Iceland, Central Bank of Iceland.

Chart 4  
Categories of new mortgages  
Deposit institutions<sup>1</sup>



1. Net new loans to households from banks. At constant December 2018 prices. Sources: Statistics Iceland, Central Bank of Iceland.

### Lending terms

Stiffer competition in the lending market and households' increased housing wealth should be conducive to more favourable lending terms, all else being equal. This is supported by tax data from Statistics Iceland, which show that households' interest payments declined between 2016 and 2017, even though their debt increased over the same period.

The average rate on new indexed mortgages from the banks has fallen marginally in the past few years but has remained broadly stable overall. Nominal interest rates on new non-indexed mortgages have fluctuated somewhat, however, and now appear to be rising after having fallen for some time. Changes in non-indexed mortgage lending rates have generally kept pace with the Central Bank's interest rate decisions.

For most of the past few years, rates on new indexed mortgages were well below real rates on non-indexed loans. That changed at the beginning of 2018, when inflation began to pick up steam after remaining low for a long period. Real non-indexed mortgage rates have been more favourable than indexed rates for virtually the entire period since the beginning of 2018.

### Borrowers more risk-averse

Households planning to take out a mortgage must take into account the debt service on the loan, the equity accumulated over the lifetime of various types of loan, and the risk associated with each loan type. The debt service burden for non-indexed loans is much higher than that for indexed loans at the beginning of the loan period, but equity accumulates faster. In addition, interest rates that are fixed for three or five years are higher than variable rates, and payments are therefore higher for fixed-rate loans than for variable-rate loans. Data on the banks' new mortgage loans show that non-indexed fixed-rate mortgages have been the most common loan form in recent months. This indicates that Icelandic households are making more effort to shield themselves from inflation and rising interest rates, even if it means a higher monthly debt service burden at the beginning of the loan period. It can therefore be argued that Icelandic households have learned from the 2008 crisis that they should reduce their risk when uncertainty increases.

## Companies

### Companies' resilience weakens

Statistics Iceland figures from firms' operational and balance sheet summaries, which are prepared from tax returns, indicate that companies' resilience declined slightly in 2017 (see Table 1). Growth in equity ratios stalled, debt ratios rose for the first time since 2013, and returns on equity declined. Furthermore, wage costs have been on the rise, both in terms of average wages per employee and wage costs relative to revenues. Wage costs equalled 22% of operating revenues at the end of 2017, the highest since 2002.<sup>10</sup> The annual accounts of companies listed on the stock exchange show signs that resilience continued to weaken last year. Debt levels rose and profitability declined.

The economic outlook has deteriorated, and growth in both GDP and demand is forecast to ease in 2019.<sup>11</sup> In addition, the outlook is for a contraction in tourism during the year, as some firms are already having difficulties and prospects for the sector are highly uncertain at present. Corporate insolvencies increased in number across all sectors in 2018, but the number of firms on the default register declined, both as a whole and in most individual sectors. A few sectors, however, tourism chief among them, saw an increase in the number of companies on the default register. According to the Central Bank's last forecast, firms' operating environment can be expected to become more difficult this year, and resilience will be tested even more than before. The impact of labour contracts on companies' operating conditions is unclear.

In spite of signs that companies' operations are at a turning point and economic conditions are deteriorating, firms can still be considered highly resilient overall. Equity is strong, and the debt-to-GDP ratio is historically low. As a result, companies should generally be well prepared for reduced demand and declining GDP growth. That said, the sectors that have grown fastest in recent years are the most vulnerable to changes in operating conditions.

### Debt still growing strongly

Annualised growth in corporate debt measured 7.1% in real terms at the end of 2018, after slowing marginally in the fourth quarter of the year. Growth in corporate debt currently outpaces GDP growth, and the debt-to-GDP ratio rose by 3.2 percentage points year-on-year. As before, debt to resident entities is the driver of growth. The proportion of debt owed to residents is 83% and has been rising recently. Foreign-denominated debt measured in krónur terms grew at the same rate as króna-denominated debt, owing to the depreciation of the króna in Q4/2018.

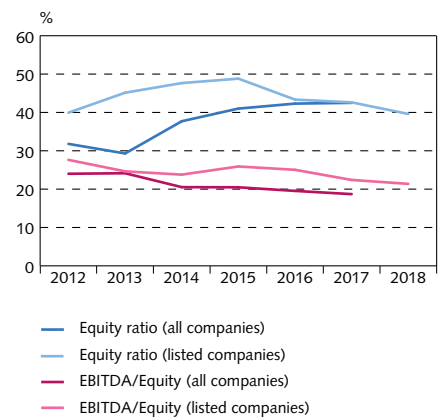
Just over a fifth of corporate debt is market-based, while the remainder is in conventional loans. Of the latter, the share of non-indexed loans has risen marginally in the last two years, while the

10. Changes in the ratio could reflect changes in the weight of individual sectors in the economy. For example, an increase could be due to job creation in tourism, a sector with a generally high ratio of wage costs to operating revenues.

11. *Monetary Bulletin* 2019/1.

Chart II-17

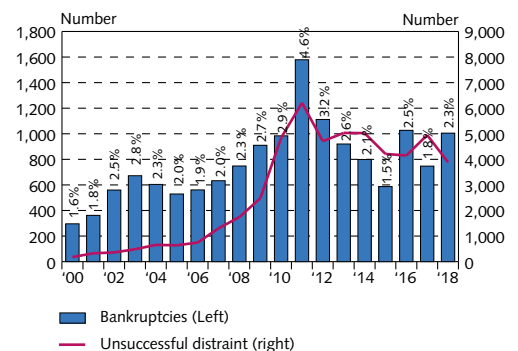
Companies: Profitability and equity<sup>1</sup>



1. Pharmaceuticals, financial, and insurance companies are excluded (ISAT no. 03-20, 22-63, 68-82, 95-96)  
Sources: Kodiak Excel, Statistics Iceland, Central Bank of Iceland.

Chart-18

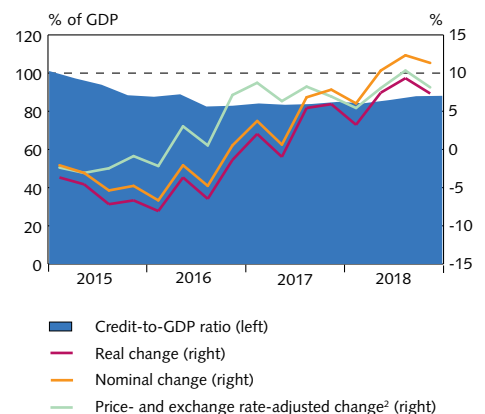
Companies: Bankruptcies and unsuccessful distraint actions<sup>1</sup>



1. The percentages show bankruptcies as a share of the total number of firms.  
Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

Chart II-19

Corporate sector: Credit growth<sup>1</sup>



1. Lines show annualised growth rates. 2. CPI-indexed credit at fixed prices and foreign-denominated credit at fixed exchange rates.  
Sources: Statistics Iceland, Central Bank of Iceland.

share of indexed loans has remained constant. Corporate executives' inflation expectations have risen in recent years, and it is therefore possible that the change in debt composition somewhat reflects changed expectations concerning borrowing terms.

Debt can be expected to keep growing this year, but the outlook is for a growth rate similar to or perhaps slower than that in 2018. The Central Bank forecast assumes that investment will increase during the year.<sup>12</sup> According to the Bank's investment survey,<sup>13</sup> carried out last autumn, executives expect to finance a smaller share of investment with credit. The commercial banks expect a slowdown in lending growth this year, whereas they have been leaders in corporate lending growth in the recent term. The debt-to-GDP ratio could continue to rise, however, particularly if forecasts of weaker GDP growth materialise.

Table II-1 Firms' financial ratios<sup>1</sup>

	2002	2004	2007	2008	2012	2016	2017
Equity ratio (%)	29.0	30.3	32.0	13.2	31.8	42.3	42.5
Total debt/EBITDA	7.4	7.6	10.0	14.3	8.9	7.0	7.3
Long-term debt/EBITDA	4.3	4.6	6.7	10.1	6.6	5.0	5.0
Current ratio	1.2	1.3	1.5	1.3	1.6	1.8	1.7
Liquidity ratio	0.9	1.0	1.3	1.1	1.3	1.5	1.4
EBITDA/Equity (%)	33.1	30.2	21.3	-	24.0	19.5	18.7
Profit per annual accounts/Equity (%)	13.4	19.1	15.5	-	11.8	13.8	12.7
Wage costs/Operating revenue (%)	22.0	20.3	20.4	18.5	17.7	20.7	22.0

1. Commercial economy excluding pharmaceuticals, financial, and insurance companies (ISAT no. 03-20, 22-63, 68-82, 95-96).

Sources: Statistics Iceland, Central Bank of Iceland.

12. *Monetary Bulletin* 2019/1.

13. *Monetary Bulletin* 2018/4.

### Box II-3 Aggregate financial cycles as a leading indicator of risk

In assessing systemic risk, analysts examine a selection of leading indicators of risk, among other things. Such indicators include developments in debt and rises in asset prices. Although these indicators sometimes send mixed messages that can be difficult to interpret, measures of aggregate financial cycles can serve as a way to synthesise the information provided. A new *Working Paper* from the Central Bank of Iceland attempts to construct an aggregate financial cycle indicator that has proven reliable for the Nordic countries.<sup>1</sup>

In the paper, the authors compare cycle identification methods using nine variables relating to private sector debt, house prices, and bank funding, and they examine which are best for use in an aggregate indicator. In this context, an examination is made of whether the indicator gives a warning within the relevant window of time prior to a financial crisis. If so, it is considered true; i.e., a signal. If no financial crisis occurs afterwards, it is considered false;

1. Önundur Páll Ragnarsson, Jón Magnús Hannesson, and Loftur Hreinsson, Financial cycles as early warning indicators: Lessons from the Nordic Region. *Working Paper* no. 80/2019. Central Bank of Iceland.



i.e., noise. The window of time is  $4\frac{1}{2}$  -  $1\frac{1}{2}$  years before crisis onset, which is the period during which macroprudential tools would have to be applied so as to preserve stability. A warning is deemed to occur when the newest cycle observation is above zero and in an upward phase, indicating that growth in financial variables could prove unsustainable in the long run. The sample includes nine financial crises and stress periods occurring in the Nordic countries in the last 40 years.

The European regulatory framework requires that the authorities in EEA countries consider a number of factors in assessing cyclical systemic risk, including the deviation of the private sector debt-to-GDP ratio from its long-term trend, often referred to as the "Basel gap." Large panel studies have suggested that this is the best single indicator of an imminent crisis.<sup>2</sup> In the paper, the performance of aggregate financial cycle indicators is also compared with the performance of the Basel gap in the Nordic countries.

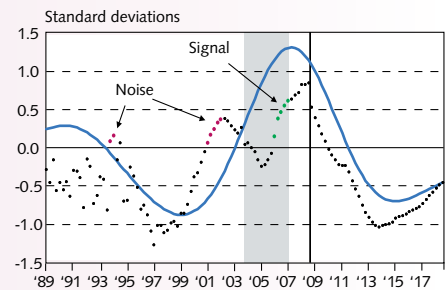
The conclusion is that the best financial cycle indicator for the Nordic countries is a simple average of three variables, obtained with a band-pass filter. The variables are the ratio of household debt to disposable income, the ratio of house prices to disposable income, and the real value of banking system foreign debt. The trivariate indicator constructed from these three variables outperforms all univariate cycles and all other multivariate combinations. In carrying out this assessment, the authors used the six variables that were available for all five countries. The indicator has a noise-to-signal ratio of 0.87, as opposed to 1.87 for the Basel gap, and gives a clear warning of an imminent crisis within the specified window of time in eight out of nine instances.

Furthermore, the study suggests that credit cycles are long in the Nordic countries, averaging over 20 years, whereas house price cycles are shorter, averaging close to nine years. Moreover, there is relatively little correlation between credit cycles and house price cycles in each country. Equating them to one another can therefore be misleading. Local factors can be important as well. Because of uniquely Icelandic factors such as highly cyclical disposable income and volatile exchange rates, cyclical in the debt-to-disposable income ratio sent no warning signal in Iceland before the 2008 crisis.

Real-time estimates of financial cycles can be inaccurate. Chart 1 shows that real-time signals indicate two cycles during the 1999-2009 period, whereas an *ex post* estimate indicates one long cycle. Furthermore, the real-time estimate yields much weaker warning signs than the *ex post* estimate, which indicates a strong upswing in 2004-2007. No single method of identifying financial cycles always outperforms all others. As a result, it is preferable to base expert analysis on several methods. Chart 3 shows the aforementioned financial cycle, together with the range of the highest and lowest estimates at each given time.

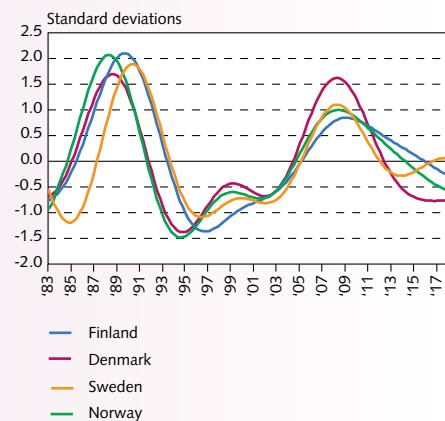
2. See, for example, Borio & Lowe (2002). Asset prices, financial and monetary stability: exploring the nexus. *BIS Working Paper* no. 114, and Drehmann & Juselius (2014). Evaluating early warning indicators of banking crises: Satisfying policy requirements. *BIS Working Paper* no. 421.

Chart 1  
A trivariate financial cycle for Iceland<sup>1</sup>



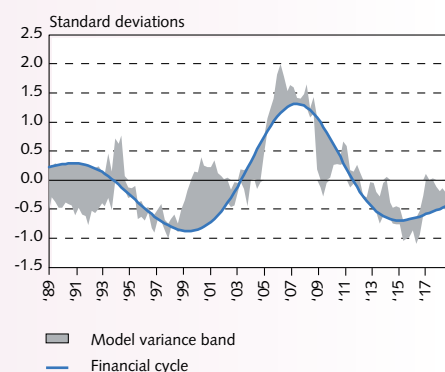
1. A simple mean of the cyclical component from three variables, obtained with a Christiano-Fitzgerald band-pass filter. Shaded area shows the signal window. Black vertical line shows crisis onset. Sources: BIS, Nordic central banks, Central Bank of Iceland.

Chart 2  
Financial cycles in Nordic countries<sup>1</sup>



1. Aggregate financial cycles, of the same sort as is shown for Iceland in Chart 1. Sources: BIS, Nordic central banks, Central Bank of Iceland.

Chart 3  
Financial cycle with a model variance band<sup>1</sup>



1. The same financial cycle estimate as is shown in Chart 1. The shaded area shows the difference between the highest and lowest cycle estimates, among four cycle extraction methods. Those methods are, in addition to the Christiano-Fitzgerald band-pass filter, a two-sided Hodrick-Prescott filter, a Hamilton regression filter, and a first-order Butterworth filter. Sources: BIS, Registers Iceland, Statistics Iceland, Central Bank of Iceland.



## III Financial institutions and other lenders

Financial system assets equalled nearly four times GDP at the end of 2018, after declining somewhat in recent years. Deposit institutions' and pension funds' assets grew slightly more than GDP in 2018, however, while other entities' assets shrank relative to GDP. Deposit institutions' assets now account for just over a third of total financial system assets, with some 97% of them held by systemically important banks. The pension funds hold just over 38% of total assets, and their share has grown steadily in recent years. The share held by entities other than deposit institutions and pension funds has declined in the recent past.

### III a Systemically important banks

Domestic systemically important banks' (D-SIB) profits and returns declined somewhat year-on-year in 2018, owing mainly to reduced income from financial activities and changes in impairment. D-SIB lending to individuals and firms increased markedly in 2018. The weight of loans in total assets continued to grow, as it has in the past five years. Alongside growth in lending and interest-bearing assets, net interest income rose somewhat in 2018, as did the weight of regular income.

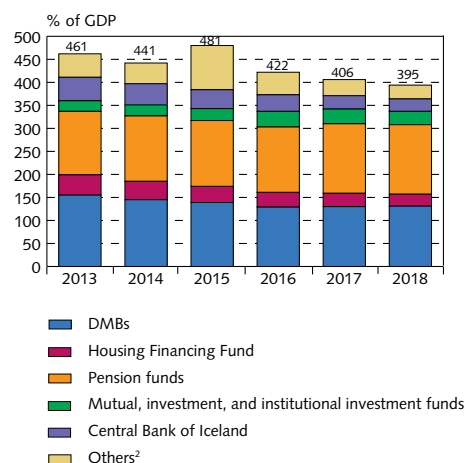
The banks' liquidity is well above Central Bank requirements and has been broadly unchanged in the past year. Their liquidity ratios in Icelandic krónur have fallen, while their foreign liquidity ratios have risen. The banks' domestic funding was in line with their business plans, but premia on foreign issues rose last year, resulting in fewer foreign bond issues than in the years beforehand. The large commercial banks have all issued their first subordinated bonds, and all of them are interested in increasing the share of subordinated funding in their capital base.

The D-SIBs' capital declined somewhat in 2018, as a result of large dividend payments. Their capital ratios are now relatively close to required levels, and there is limited scope to lower them further without changes in capital structure. The banks' aim is to change their capital structure to increase the weight of financial instruments and subordinated loans and reduce the weight of Common Equity Tier 1 (CET1). Conditions in the financial markets have not been favourable, however, and it could therefore take a longer time to change the capital structure than previously expected.

A milestone was reached in June 2018, when Arion Bank was listed on the stock exchanges in Iceland and Sweden following an initial public offering. It was the first time in a decade that an Icelandic bank was listed on the Nasdaq Iceland Main List.<sup>1</sup> The Icelandic Government had previously sold its 13% stake in the bank.

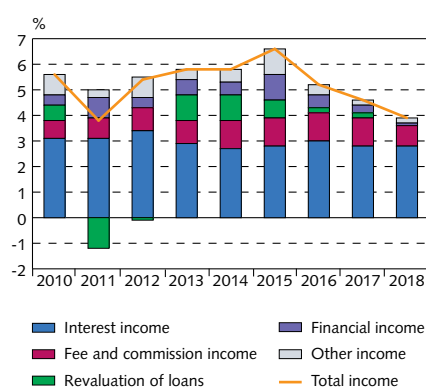
1. Kvika banki hf. was listed on the Nasdaq First North Iceland market in March 2018 and listed on the Nasdaq Iceland Main List in March 2019.

Chart III-1  
Financial system: Assets as % of GDP<sup>1</sup>



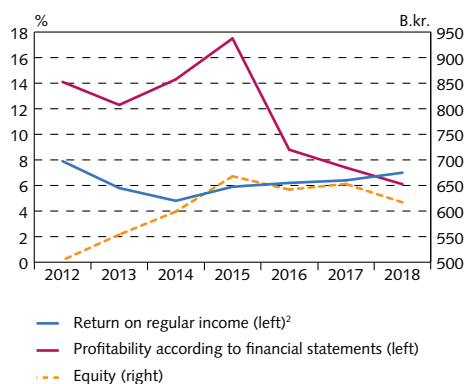
1. Parent companies. 2. Beginning on 27 February 2019, Byr, ESI, the Framtíðin credit fund, and Sparisjóðabankinn (SPB) are classified among other financial institutions. Data are as follows: for Byr, from January 2016 onwards; for ESI, from December 2009 onwards; for Framtíðin, from May 2017 onwards, and for SPB, from February 2016 onwards.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-2  
D-SIB: Ratio of income to total assets<sup>1</sup>



1. Domestic systemically important banks, consolidated figures.  
Sources: Commercial banks' financial statements.

Chart III-3  
D-SIB: Profitability<sup>1</sup>



1. Profitability is calculated from average equity. Domestic systemically important banks, consolidated figures. Valitor excluded in 2017 and 2018. 2. Profitability of regular income is based on net interest and fee/commission income less regular cost. The tax rate is 20% and is based on average equity.  
Sources: Commercial banks' financial statements.

## Operations and equity<sup>2</sup>

### Regular income has gained ground

The D-SIBs' combined profits totalled just under 38 b.kr. in 2018, after contracting by about a fifth from the previous year. The banks' combined calculated return on equity was 6.1% in 2018, nearly 1½ percentage points less than in the prior year, in spite of reduced equity. The return on total assets was 1.1% in 2018, down by a fourth from 2017. Proportionally, their return on total assets fell more than their return on equity, as the banks' total assets have increased in the recent term while their equity has fallen. The D-SIBs' returns were only around a percentage point above 1- to 2-year Treasury bond yields.

Net interest income totalled 102 b.kr. in 2018, an increase of just over 7% year-on-year. The rise in net interest income was due primarily to an increase in interest-bearing assets, loans in particular. The interest rate spread based on the average balance of total assets widened marginally, as the banks' assets increased significantly between years. Over the year as a whole, the interest rate spread was 2.9%. Net fee and commission income declined by 5 percentage points between years, to just under 31 b.kr. in 2018. This comparison excludes Valitor from Arion Bank's profit and loss account, as the company has been put up for sale and is recognised among discontinued operations in Arion's consolidated accounts. Íslandsbanki has also announced that its subsidiary Borgun has been put up for sale. Both Valitor and Borgun were operated at a loss in 2018.

The weight of regular income — i.e., net interest income and net fees and commissions — has increased in the recent past, and the weight of irregular items such as valuation adjustments and capital gains on equity securities has declined accordingly (see Chart III-2). In 2018, net interest income and net fees and commissions accounted for 93% of total income, the highest percentage since the establishment of the new banks. Alongside the reduction in irregular income, returns on equity have fallen substantially in recent years, even though equity has declined. However, the return on regular income increased by nearly a percentage point in 2018, after having held steady at around 6% in the years beforehand.<sup>3</sup> The stronger return on regular income goes hand-in-hand with the increased weight of regular income in the banks' income generation.

The banks' income from financial activities was about 2.6 b.kr. in 2018, having declined by over 70% between years, mainly because of reduced gains on equity securities. Other operating income rose somewhat between years, to about 9.4 b.kr., with the increase stemming from asset sales.

2. In 2015, the Financial Stability Council designated the three largest commercial banks — Arion Bank hf., Íslandsbanki hf., and Landsbankinn hf. — as systemically important financial institutions. The discussion in this chapter is based on the 2018 consolidated accounts of these D-SIBs and comparison figures for 2017. Figures are consolidated unless otherwise stated. The aggregate position may diverge from that of individual financial companies.

3. Returns on regular income are based on net interest and net fee and commission income, less regular expenses, which are defined as salaries and related expenses plus other operating expenses, apart from one-off cost items. The tax rate is 20%, and it is based on average capital.

### Loan value adjustments negative

The net valuation adjustment of the D-SIBs' loans was negative by 600 m.kr. in 2018, the first negative valuation adjustment since 2012. Arion Bank's impairment totalled 3.5 b.kr., while the other two commercial banks' valuation adjustments were positive, at 1.6 b.kr. for Íslandsbanki and 1.3 b.kr. for Landsbankinn.

The deadline for filing claims due to unlawful exchange rate linkage of loan agreements expired in June 2018. The banks capitalised just over 2 b.kr. in reversed impairment in connection with exchange rate-linked loans and claims. They expect further loan valuation adjustments and claims due to exchange rate-linked loans to have little impact on their financial statements in the future.

Loan value adjustments have had a positive impact on the D-SIBs' operating results in recent years. The banks estimate that their annual loan losses average 0.3-0.5% of their long-term loan portfolios, or 8-14 b.kr. All three of the large banks plan to charge expenses due to impairment in 2019, and they assume that the period of upward valuation adjustments is over for the present. On the whole, changes in impairment balances will have a negative impact on the banks' operating results and returns. Based on equity as of end-2018, the D-SIBs' return on equity could decline by 1-1.5 percentage points as a result of increased impairment. There is some uncertainty, however, about how much impairment will be in 2019 and 2020, partly because it is unclear how much WOW Air's insolvency will affect the tourism industry and the economy as a whole.

### Expense ratios still rising

The banks' combined operating expenses totalled 79 b.kr. in 2018, an increase of just under 2% from the prior year.<sup>4</sup> The increase in costs is attributable to negotiated pay rises, as non-wage operating expenses were unchanged between years. This excludes Valitor's operating expenses, as does the comparison below.

The banks employed nearly 2,900 members of staff at the end of 2018, after downsizing by 90 during the year. The number of employees has fallen markedly in recent years as a result of streamlining, and the banks expect to continue downsizing in the next 2-3 years, which should lower costs and boost returns.

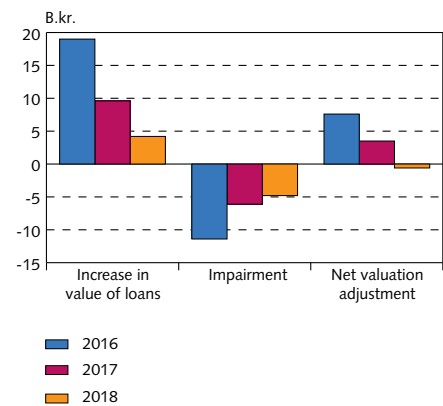
Because the D-SIBs' expenses have risen in excess of their income in the recent term, their expense ratio is trending upwards and is now at its highest since the establishment of the new banks. The ratio of expenses to interest income and fees and commissions was unchanged between 2017 and 2018, although it fell in the years beforehand. Icelandic banks' expense ratios are high in international context; for example, in comparison with banks of a similar size in the other Nordic countries.

### Strong credit growth

Loans to firms and individuals increased by over 12% in 2018 and 22% over the past two years. The banks' net interest income has

Chart III-4

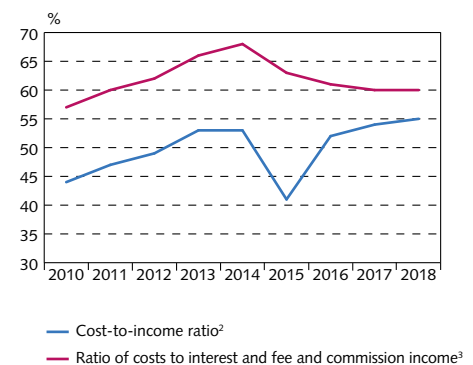
D-SIB: Income and expenses due to revaluation of loans and receivables<sup>1</sup>



1. Domestic systemically important banks, consolidated figures. Sources: Commercial banks' financial statements.

Chart III-5

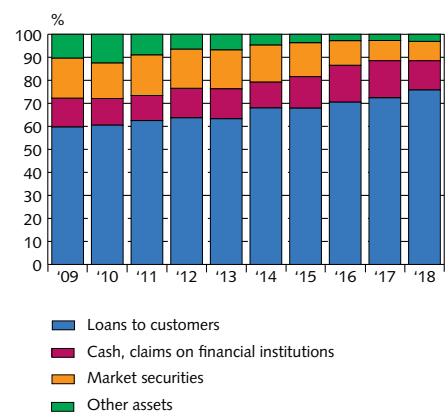
D-SIB: Cost-to-income ratios<sup>1</sup>



1. Domestic systemically important banks, consolidated figures. Valitor excluded in 2017 and 2018. 2. Operating expenses, adjusted for major irregular items, as a share of operating income, excluding loan revaluation changes and discontinued operations. 3. Operating expenses, adjusted for major irregular items, as a share of net interest income and net fee and commission income. Sources: Commercial banks' financial statements.

Chart III-6

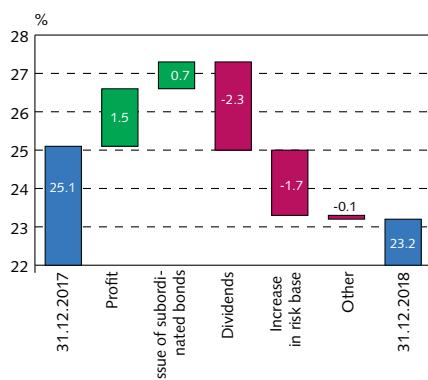
D-SIB: Asset distribution<sup>1</sup>



1. Domestic systemically important banks, consolidated figures. Sources: Commercial banks' financial statements.

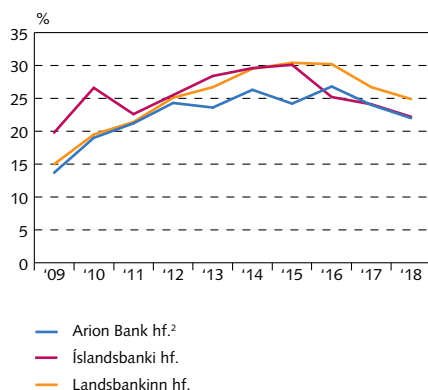
4. In comparison, an adjustment is made for a 2.7 b.kr. reversal of Arion Bank's obligation to the Depositors' and Investors' Guarantee Fund, which was carried out in 2017.

Chart III-7

Change in D-SIBs' capital ratios in year 2018<sup>1</sup>

1. Domestic systemically important banks, consolidated figures.  
Sources: Commercial banks' financial statements.

Chart III-8

D-SIB: Capital adequacy ratios<sup>1</sup>

1. Domestic systemically important banks, consolidated figures.  
Capital base as % of risk-weighted assets. 2. In Arion Bank's annual accounts 10 b.kr. dividend payment scheduled in first half of the year has been taken into account in the calculation of the capital ratio.  
Sources: Commercial banks' financial statements.

risen concurrent with the increase in lending. Credit growth has outpaced GDP growth by a comfortable margin in the recent term. Proportionally, corporate lending has grown slightly more than lending to individuals. This is explained in part by the depreciation of the króna in 2018, as 28% of the banks' corporate loans were in foreign currencies at the year-end. Demand for credit has been strong from both households and businesses, and the banks are of the opinion that demand will be moderate, even in the event of a slowdown in the economy. They do expect that credit growth will be much slower this year than in the recent past, and there is uncertainty about this year as well, particularly because of difficulties in the tourism industry and of the impact of wage negotiations.

The biggest risk facing the banks is credit risk. In 2018, the D-SIBs' risk base rose by over 7%, owing mainly to increased lending. In order to enhance financial system resilience, including resilience to potential credit losses in the wake of lending growth and cyclical systemic risk, the Financial Supervisory Authority (FME) decided, upon the recommendation of the Financial Stability Council, to increase the countercyclical capital buffer by 0.5 percentage points in May 2018 and by 0.25 percentage points this February. The decision to increase the countercyclical capital buffer will take effect one year after the decision date; therefore, the buffer will rise to 1.75% in mid-May 2019 and 2.0% at the beginning of February 2020.

### Capital position still strong despite large dividend payments

At the end of 2018, the D-SIBs' capital totalled 617 b.kr., some 36 b.kr. less than in the previous year. Dividend payments in 2018 totalled 73 b.kr. The banks' combined capital adequacy ratio at the end of 2018 was 23.2%, after declining by 1.9 percentage points during the year.<sup>5</sup> The banks plan to pay 25 b.kr. in dividends in 2019. The factors that led to the rise in the capital ratio during the year were profits and subordinated bond issues. All of the banks issued subordinated bonds in 2018. The main factors leading to a reduction in the ratio were dividend payments and increased risk-weighted assets. The banks use the standardised approach to assess risk-weighted assets, which amounted to 2,643 b.kr. at year-end 2018, or 73% of total assets, the same ratio as in 2017. Their leverage ratio fell by nearly 1½ percentage points in 2018, to 15.0% by the year-end. Icelandic banks' leverage ratio and ratio of risk-weighted assets to total assets are both high and, in most instances, higher than in comparison countries.<sup>6</sup>

The FME's total required capital base for the D-SIBs, after full implementation of capital buffers, ranges from 19.6% to 21.3%. It is based on the banks' position as of end-2017. At the end of 2018, the D-SIBs' capital ratios were 2-4 percentage points above the FME requirement. The banks themselves define internal prudential buffers,

5. In Arion Bank's annual accounts, the calculation of the capital ratio is adjusted for the 10 b.kr. dividend payment planned for H1/2019. This has been taken into consideration in this presentation of the D-SIBs' capital ratio.

6. Leverage ratios are calculated in accordance with the Act on Financial Undertakings, no. 161/2002, and are subject to a minimum of 3%.

or so-called management buffers, for their internal criteria. If consideration is given to the management buffer and the combined 0.75 percentage point increase in the countercyclical capital buffer in May 2019 and February 2020, there is little scope for a further decline in the D-SIBs' capital ratio.

One of the characteristics of the Icelandic banks' capital structure is that the D-SIBs' capital base consists almost solely of CET1. As a result, the banks have the option of changing the composition of their capital base by issuing loans classifiable as additional Tier 1 capital or subordinated loans. The banks themselves specify that their minimum criteria CET1 capital ratio must range between 16% and 18%, which is 4-6 percentage points lower than it was at the end of 2018. The banks' aim is to change their capital structure to increase the weight of financial instruments and subordinated loans classifiable as Tier 1 and Tier 2 capital, and reduce the weight of CET1. They have begun this process by issuing subordinated bonds classifiable as Tier 2 capital, although further developments will depend on conditions in foreign capital markets. Dividends in excess of the amount attributable to profits could therefore be restricted if market conditions for issuance of financial instruments and subordinated loans classifiable as capital prove difficult. If market conditions are favourable, which will ultimately increase the scope for dividend payments, the changes in the capital base will be in accordance with capital base requirements, with full capital buffers, and the liquidity position. There is elevated risk in the domestic economy at present, and some risks have materialised, which requires that the financial undertakings' resilience be safeguarded.

## Liquidity and funding

### Liquidity ratios above required limits

The banks' liquidity position is well above the Central Bank's required minimum. The D-SIBs' liquidity ratio was 184% at the end of February, whereas the minimum ratio is 100%, both in foreign currencies and overall. The liquidity ratio in foreign currencies was 495% at the end of February, whereas the ratio in Icelandic krónur was only 77%. No minimum has been specified for the liquidity ratio in Icelandic krónur.

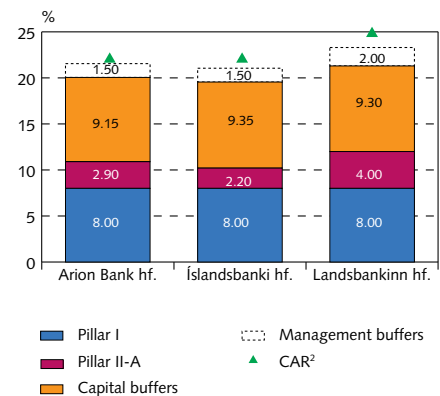
The D-SIBs' liquidity ratio in krónur fell in 2018, as króna-denominated assets declined by 126 b.kr. during the year. As before, term deposits with the Central Bank constitute the majority of the banks' liquid assets. Liquid assets in foreign currencies have increased somewhat in the recent past, so the overall ratio is broadly unchanged between years.

### Domestic funding in line with business plans

The banks' main source of funding is deposits, which account for 52% of total funding. Just over half of deposits are held by individuals and small and medium-sized enterprises (SME). These parties' deposits increased by 11%, or 38 b.kr., in 2018, about the same as in 2017. Large companies' deposits increased by 13%, while pension funds' deposits contracted by 2% year-on-year. In all, deposits grew by 8% between years in 2018, somewhat more than in 2017.

Chart III-9

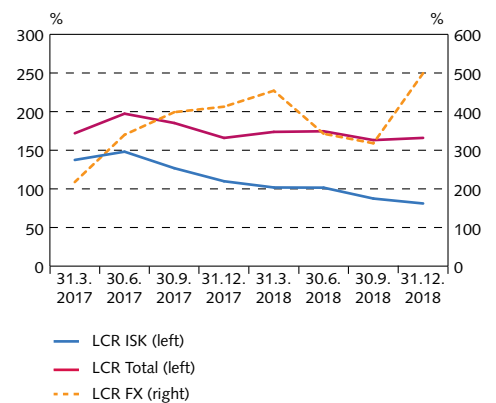
D-SIB: Capital requirements and capital adequacy ratios<sup>1</sup>



1. Domestic systemically important banks, consolidated figures. Pillar II according to SREP at year-end 2017. Capital buffers assuming full implementation, which includes increase of CCyB from 1.25% to 2% in May 2019 and February 2020. Adjusted for reductions in systemic risk and countercyclical capital buffers for foreign exposures. 2. Capital ratio at end of year 2018. Sources: Commercial banks' financial statements and other published materials.

Chart III-10

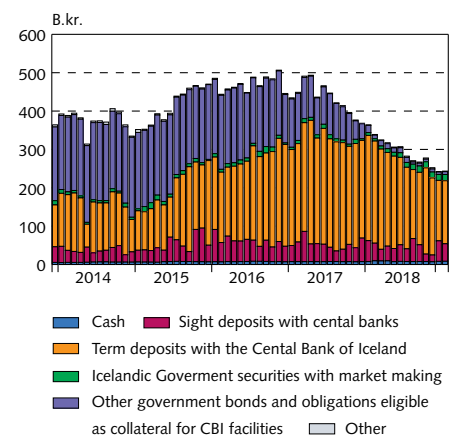
D-SIB: Liquidity coverage ratio<sup>1</sup>



1. Domestic systemically important banks, consolidated figures. Sources: Domestic systemically important banks interim financial statements.

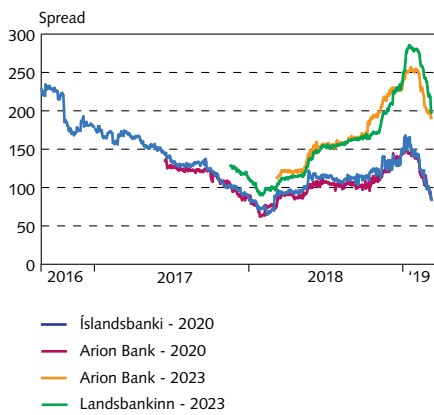
Chart III-11

D-SIB: Liquid assets<sup>1</sup>



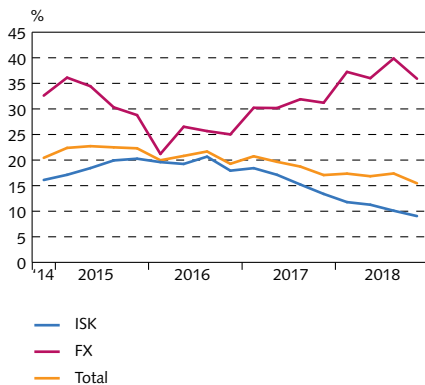
1. Liquid assets in Icelandic krónur. Domestic systemically important banks, parent companies. Source: Central Bank of Iceland.

Chart III-12  
D-SIB: Spread on listed foreign bonds, EUR<sup>1</sup>



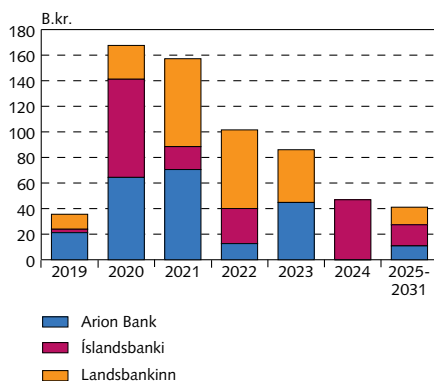
1. Spread on Euro benchmark curve.  
Source: Thomson Reuters.

Chart III-13  
D-SIB: Ratio of liquid assets to total assets<sup>1</sup>



1. Domestic systemically important banks, consolidated figures.  
Source: Central Bank of Iceland.

Chart III-14  
D-SIB: Foreign bonds by maturity<sup>1</sup>



1. At 31 March 2019 exchange rate.  
Source: Nasdaq Iceland.

In 2018, the stock of outstanding covered bonds issued by the banks increased by 97 b.kr., in line with their business plans, about the same as in 2017. The majority of the covered bonds are indexed. The year-end stock of outstanding bills issued by the D-SIBs was broadly unchanged between 2017 and 2018, and domestic issues accounted about 11% of total funding. The banks' net new residential mortgages exceed their covered bond issuance in 2018, as in 2017, which accounts in part for the reduction in króna-denominated liquidity. As a share of their residential mortgage portfolio, the banks' covered bonds increased by 3 percentage points since the beginning of 2018, to 49% by the year-end.

Yields on covered bonds moved relatively well in line with yields on corresponding Treasury bonds. Nominal bond yields therefore rose in H1 but then fell in H2, whereas indexed yields declined in 2018. The D-SIBs' covered bond terms and lending rates are discussed in greater detail in Box III-1. Terms on the banks' bills have moved in line with six-month interbank rates and rose concurrent with the increase in the Central Bank's key rate in autumn 2018.

### Few foreign issues as terms tighten

For most of last year, the capital markets were turbulent and the banks' risk premia rose after a relatively protracted decline. In H1, the banks issued two relatively large bonds within their medium-term note (MTN) framework. They used most of the proceeds to retire previous issues. In H2, when terms had deteriorated markedly, they issued less, although Arion Bank and Landsbankinn issued their first subordinated bonds during the half. All three of the banks have announced plans for further subordinated issues. As an example of the deterioration in the terms available to the banks, Íslandsbanki's subordinated issue from August 2018 bore a 50-point higher premium than its November 2017 issue, and the premium on Arion's November 2018 issue was 60 points higher than that on Íslandsbanki's bond issue three months earlier. By late 2018, interest premia on some of the banks' foreign issues in the secondary market were higher than on the date of issue. Premia began to fall again in February and March 2019, as can be seen in Chart III-12. In spite of higher risk premia, the bonds maturing next year will bear even higher interest rates than the banks have been offered in recent months.

### Foreign refinancing risk

The net increase in the banks' foreign market-based funding in 2018 totalled 41 b.kr.; however, in December, Arion Bank paid 22 b.kr. towards a eurobond maturing this year. Some of the increase has been used for foreign-denominated lending, although the banks' foreign liquid assets have grown as well. The commercial banks' foreign-denominated loans relative to their total foreign funding rose by 2.5 percentage points in 2018, to just under 72%. Their net stable funding ratio (NSFR) in foreign currencies was 167% at the end of February and has been constant for the past twelve months. In December, rating agency Standard & Poor's affirmed the banks' credit ratings at BBB+, with a stable outlook.



The weighted average residual maturity of foreign funding has been stable in the past year. About 36 b.kr. worth of foreign bonds issued by D-SIBs, or about 6% of their foreign market-based funding and 1% of their balance sheet, will mature this year. Maturities in 2020 and 2021 are much larger both, however. The banks' foreign refinancing risk has been addressed hitherto with ample foreign liquidity, but with weaker króna-denominated liquidity, their overall liquidity ratio is sustained by high foreign ratios. Increased foreign market funding makes the banks more dependent on foreign market conditions, but at present their liquidity buffers are sufficient to pay all of their 2019 maturities without ruining their overall liquidity ratios.

### Encumbrance ratios

The D-SIBs' encumbrance ratios — i.e., the share of assets that are collateralised for funding purposes — rose in 2018. Landsbankinn's encumbrance ratio rose by 2 percentage points during the year, to 11% by the year-end. Íslandsbanki's ratio rose by the same amount, to 17% in 2018, but has risen by 7 percentage points since the end of 2015, in tandem with the bank's increased covered bond issuance. Arion Bank's encumbrance ratio also rose by 2 percentage points in 2018, to 21% by the year-end. The banks' encumbrance ratios are well below the European average of 28%, but it is likely that they will continue to rise, as nearly all of their króna-denominated market funding is in covered bonds.

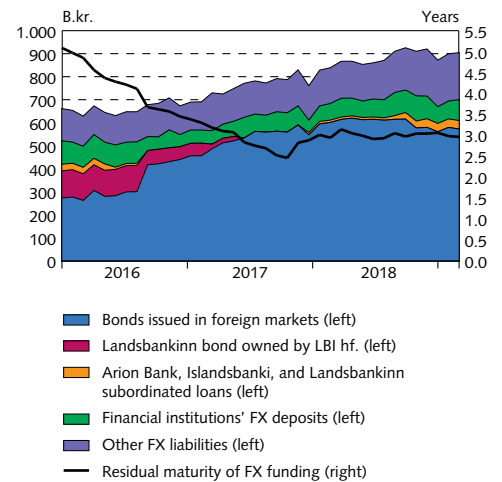
### D-SIB lending: developments and loan quality

Annual growth in lending to customers measured 8.6% in real terms in February. Corporate lending growth was somewhat stronger, at 9.2%, while household lending grew by 7.9%. Lending growth picked up strongly early in 2018 but seemed to ease in Q4, even though the depreciation of the króna had expanded the foreign-denominated credit stock. Customer loans equalled 75% of total assets in February and have increased by nearly 2 percentage points on an annualised basis.

Figures on net new loans — i.e., new loans net of prepayment and retirement of loans — show a year-on-year change in the composition of new bank loans to households. In 2017, indexed and non-indexed loans accounted for roughly equal shares of net new household lending; however, non-indexed loans gained significant ground in 2018. In recent months, the amount of new indexed loans has been approximately the same as the amount retired, and in certain months, retirement has even exceeded new lending. The main change in corporate lending was in the relative weight of individual sectors. New lending to services firms and companies in transport and transit contracted markedly, which may well reflect expectations of a slump in tourism. About half of the D-SIBs' loans to services companies are tourism-related. Offsetting this downturn was a significant increase in new loans to companies in wholesale and retail trade and in the fishing industry.

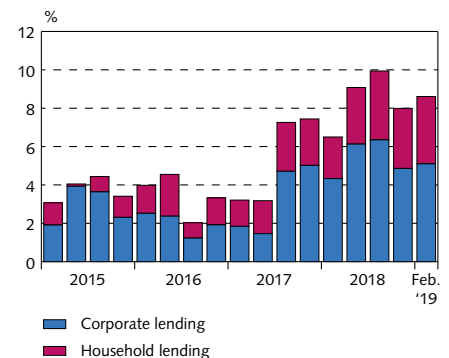
At the end of 2018, just over a fifth of the banks' loan portfolio consisted of loans to real estate firms and construction firms. In nearly

Chart III-15  
D-SIB: Funding in foreign currency<sup>1</sup>  
and average residual maturity<sup>2</sup>



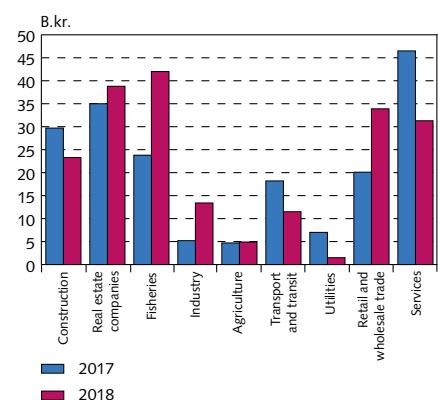
1. D-SIB: Domestic systemically important banks. At 28 february 2019 exchange rate. 2. Residual maturity of listed foreign bonds, subordinated loans, and LBI bond.  
Source: Central Bank of Iceland.

Chart III-16  
D-SIB: Real change in lending<sup>1</sup>



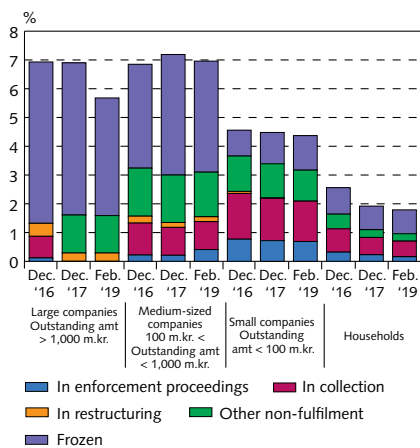
1. Domestic systemically important banks, parent companies. Annualised real change. Adjusted for the Government's debt relief measures.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-17  
D-SIB: Net new corporate lending<sup>1</sup>  
By industry



1. New loans net of prepayments. Prepayments are payments in excess of contractual payments.  
Source: Central Bank of Iceland.

Chart III-18

D-SIB: Status of non-performing corporate loans, by claim amount<sup>1</sup>

1. Percentage of total loans in each size category. Domestic systemically important banks, parent companies, book value.  
Sources: Financial Supervisory Authority, Central Bank of Iceland.

all instances, these loans are backed by real estate. Property prices are currently high by most measures. Price developments therefore strongly affect the credit risk attached to the loans.

The banks' non-performing loans (NPL) increased in krónur terms last year but then fell rather abruptly in the first two months of 2019.<sup>7</sup> Their cross-default NPL ratio has been falling steadily, however, as a result of strong credit growth. In February, it was 4.2%, nearly a percentage point lower than in February 2018. Both corporate and household ratios declined during the intervening year. The majority of non-performing corporate loans were in foreign currencies, which had an NPL ratio of 9.5%.

The banks' facility-level NPL ratio was 2.2% at the end of 2018. In 2018, the methodology used to calculate NPL ratios was changed, so that now the European Banking Authority (EBA) definition is used.<sup>8</sup> Non-performing loans are higher according to the new methodology, whereas according to the old method, the NPL ratio would have fallen marginally between years.

The banks' annual accounts indicate that the value of the collateral they hold in order to cover credit risk on their customer loans rose more than credit risk did in 2018.<sup>9</sup> Because about 73% of the collateral is in the form of real estate, the rise in property prices was a major factor in this positive development.

The impairment coverage ratio, which is a measure of the banks' ability to withstand losses on non-performing loans, was 29% at the end of 2018. It is calculated as the amount of the impairment account divided by the total amount of non-performing loans. It had fallen at the beginning of 2018 but rose steadily over the course of the year.

7. Based on book value. Non-performance is measured using the cross-default method. See the glossary in Appendix III.
8. See: <https://eba.europa.eu/risk-analysis-and-data/eba-work-on-npls>. Various risk metrics can be found on the EBA's risk dashboard: <https://eba.europa.eu/risk-analysis-and-data/risk-dashboard>.
9. The banks publish their figures in different ways, which complicates comparison. Changes in standards have also made it difficult to compare figures across periods.

### Box III-1

## Risk premia, loan premia, and interest rate differentials

In recent years, there has been widespread discussion of high interest rates, the banks' loan premia, and large interest rate differentials, which push lending rates higher than they would be otherwise. Conditions in Iceland are often different from those in, for example, the other Nordic countries; therefore, a simple cross-country comparison of interest rates could give a misleading view of the banks' interest rates and loan premia. This Box focuses on mortgage lending rates, loan financing, and interest rate differentials.

Issuance of covered bonds has grown markedly in the recent term, and the banks have relied increasingly on covered bonds to fund long-term assets, particularly mortgage loans. Covered bonds are backed with sound assets that are subject to specified collateral quality requirements,<sup>1</sup> as well as being protected during resolution and winding-up proceedings. As a result, they are relatively secure

1. See the Act on Covered Bonds, no. 11/2008.

investments, but yields are a bit higher than yields on Treasury bonds of a similar duration.

According to the Government's *White Paper on a Future Vision for the Financial System*, Iceland's differential between the policy rate and short covered bond yields is by far the widest in the Nordic region.<sup>2</sup> This indicates that the risk premium on covered bonds is higher in Iceland than in the other Nordic countries. A higher risk premium should lead to higher lending rates, all else being equal. The *White Paper* notes that the Icelandic banks' premium on mortgage loans — i.e., the premium over and above covered bond yields — is lower in Iceland than in the other Nordic countries. Chart 1 shows that risk premia on covered bonds began to rise soon after the Rules on Special Reserve Requirements for New Foreign Currency Inflows took effect. Alongside a higher risk premium, the banks' premium on indexed mortgage loans financed with covered bonds has risen. Loan premia have ranged between 0.5% and 1.5% in recent years. The banks estimate that in the long run, their annual loan losses average around 0.4% of their loan portfolio; therefore, the premium intended to cover administrative and operational expense and required returns is currently moderate, at around 1 percentage point.

Icelandic banks' interest rate differentials are considerably wider than Nordic banks' differentials, and among the widest in Europe.<sup>3</sup> If the Icelandic banks' premium over and above the covered bond yield is moderate in comparison with the total interest rate differential, which is around 3%, it is worth asking where the differential comes from and why it is larger for Icelandic banks than for large Nordic banks. The answer lies partly in differences in the banks' funding structure. The share of equity and deposits is higher for Icelandic banks than is generally the case in the Nordic countries. In this context, it is worth noting that at the end of 2018, about 48% of the D-SIBs' mortgage loans were funded with covered bonds; therefore, more than half were funded by other means, which in krónur terms consist almost entirely of deposits and equity.

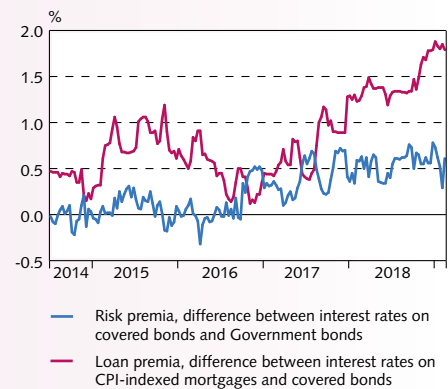
Iceland's interest rates and policy rate are much higher than those in the Nordic countries, where policy rates are either negative or close to 0%. When policy rates are close to zero or even negative, deposit rates do not move in the same way as they do when policy rates are higher, as a 0% deposit rate creates a floor; i.e., it is extremely difficult to offer negative deposit rates to households and businesses.<sup>4</sup> This can be seen clearly in Nordic countries where deposit rates are higher than policy rates (see Chart 4). The difference between policy rates, Treasury bond yields, and covered bond yields is very small in the Nordic countries; therefore, it can be said that issuing covered bonds is a cheaper form of funding than deposits. The reverse is true in Iceland, where interest rates are much higher, which gives more scope to create an interest rate differential on both assets and liabilities sides of the balance sheet. Interest rates on households' deposits with the large commercial banks averaged 2.9% in 2018, whereas yields on non-indexed covered bonds were around 5.5-6.5%. The terms offered to depositors are therefore much poorer than those enjoyed by covered bond owners. Chart 4 shows clearly how the Icelandic banks' interest rate differentials develop through both lending and deposits, whereas in the other Nordic countries they develop mainly through lending.

2. See Chart 5.9 Central Bank policy rate and variable lending rates in the *White Paper on a Future Vision for the Financial System*.

3. See, for example, Chart 6.1 in the *White Paper on a Future Vision for the Financial System*.

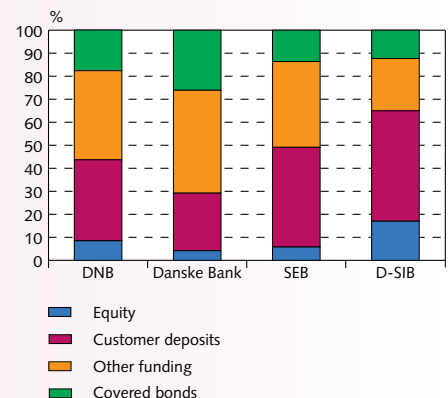
4. See, for example, <https://www.norges-bank.no/en/Published/Papers/Working-Papers/2019/42019/>

Chart 1  
Risk premia on covered bonds and loan premia on CPI-indexed mortgages<sup>1</sup>



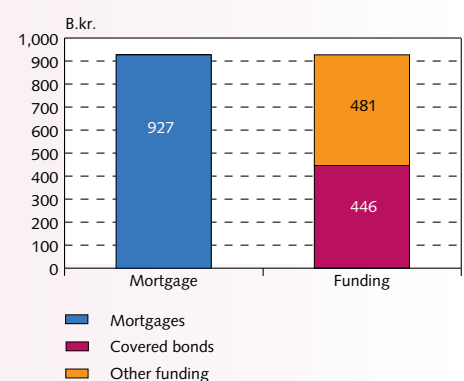
1. Estimates of risk premia and loan premia are based on three-year bond yields.  
Source: Central Bank of Iceland.

Chart 2  
Funding structure: D-SIBs and three Nordic banks  
Year-end 2018



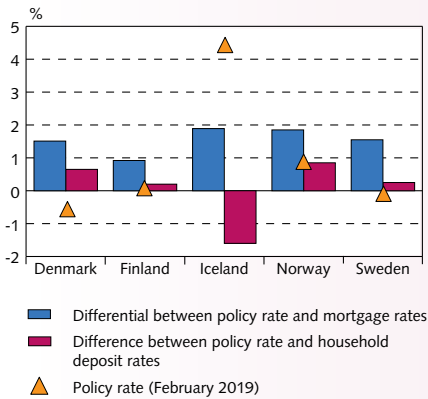
Sources: Commercial banks' interim financial statements

Chart 3  
Funding of D-SIB mortgage loans  
Year-end 2018



Sources: Commercial banks' interim financial statements.

Chart 4  
Interest rates and interest rate differentials<sup>1</sup>



1. The comparison is based on the policy rate, interest rates on non-indexed variable-rate mortgages, and interest rates on households' deposits.

Sources: Commercial banks' interim financial statements and websites, Central Bank of Iceland.

There has been frequent mention of Iceland's high bank taxes and how they lead to higher lending rates. The bank tax is levied on the banks' liabilities and is therefore a tax on their funding, not on their lending and assets. There are many indications that the bank tax has led to lower deposit rates rather than higher lending rates. There are plans to lower the tax in stages from 0.376% to 0.145% over the period from 2020 through 2023. The question, then, is how the reduction in taxes will be distributed among the banks' owners, borrowers, and depositors.

Finally, it is worth noting that the interest rate differential on financial institutions' assets and liabilities is usually calculated on total assets and total liabilities.<sup>5</sup> In such instances, the formula below applies, with  $A$  denoting total assets,  $L$  total liabilities,  $r$  the base interest rate,  $p$  the interest premium on assets,  $h$  the interest rate haircut on liabilities, and  $ER$  the equity ratio.

$$\begin{aligned} \frac{A(r+p) - L(r-h)}{A} &= p + \frac{Lh}{A} + r\left(1 - \frac{L}{A}\right) \\ &= p + (1-ER)h + ERr \\ &= p + h + ER(r-h) \end{aligned}$$

According to the equation, and all else being equal, the interest rate differential increases with a higher base interest rate and a higher capital ratio. Icelandic banks have considerably higher capital ratios than their Nordic counterparts. If the Icelandic banks' calculated interest rate differential is 2.9% according to the equation, it would be 2.4% based on the base interest rate, which is closer to that in the Nordic countries and the capital ratio that is common there. The comparison assumes that the premium and haircut on assets and liabilities is the same. It is important to bear this in mind when comparing interest rate differentials in Iceland with those in other countries.

5. This presentation is based on the interest rate differential for total assets, but other methods are also used to calculate the interest rate differential. For instance, some banks publish their interest rate spreads by publishing the difference in interest rates on interest-bearing assets and liabilities (i.e., not divided by total assets in both assets and liabilities).

### III b Other lenders

The Housing Financing Fund (HFF) is still beset by prepayment problems, and new lending is at a minimum, as the Fund's lending authorisations are limited to social loans. Last year, the pension funds invested to a greater degree in indexed marketable bonds and foreign unit shares.

#### HFF's operating results were negative in 2018 ...

The HFF recorded an operating loss of 313 m.kr. in 2018, after earning a profit in 2015-2017. That profit was driven mainly by upward adjustments in the value of loans and appropriated assets, whereas value increases shrank in 2018 and actual operating expenses came to light. The Fund's operating expenses increased by nearly 13% year-

on-year, and net interest income was negative by 1.49 b.kr. The rise in operating expense was due largely to the reorganisation of the Fund's activities, which entailed an increase in staffing. In 2018, the HFF's activities were split into two parts: the Housing Institute, which handles policy formation, analysis, and administration of housing assistance; and the HFF Fund, which carries out financial administration for funding and previously granted loans. Regular lending for property purchases has virtually stopped. The HFF's equity ratio was 8.9%, whereas its long-term goal is to maintain an equity ratio over 5.0%.

### ... and prepayments are still substantial

The HFF's loan portfolio has continued to contract due to retirement of loans and other extra payments from borrowers, including the allocation of third-pillar pension savings to mortgage debt. The loan portfolio was valued at 427 b.kr. at the end of 2018, including 282 b.kr. in loans to individuals. In 2018, customers retired loans in the amount of 70.4 b.kr., and assets outside the loan portfolio increased by 57 b.kr. between years, to 42% of total assets. In response to this large-scale retirement, the Fund has invested in non-loan assets, mainly asset-backed indexed bonds with a payment profile similar to that of its funding. The Fund has not issued bonds in the market since 2012.

The number of appropriated assets owned by the HFF declined in 2018, as the Fund sold 155 properties and acquired 23. At the end of 2018, it owned 36 properties, virtually all of them empty and up for sale.

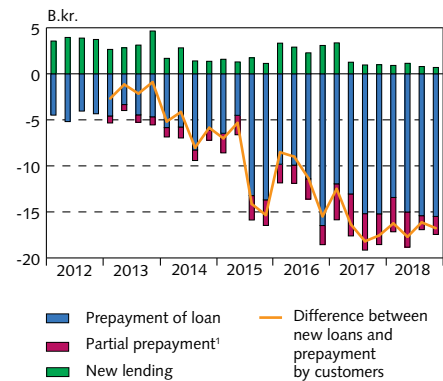
### Pension funds tighten lending requirements and continue investing abroad

The pension funds' total assets amounted to one-and-a-half times GDP in December 2018. Their assets grew by 294 b.kr. during the year, and the ratio of assets to GDP has continued to rise.

Loans to fund members totalled 424 b.kr. as of end-December, after increasing by nearly 25% year-on-year in real terms. In recent years, the pension funds have offered the most favourable mortgage lending terms in the market, thereby stimulating competition. Their loans to fund members have increased by about 70% in real terms in the past two years. Several of the largest pension funds recently lowered their loan-to-value (LTV) ratios from 75% to 70%, however, and tightened their requirements for supplemental loans. The outlook is for a slow-down in pension fund lending growth, but the quality of their loan portfolio could increase.

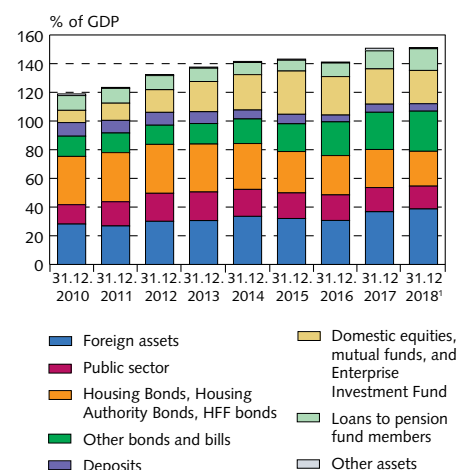
The pension funds are active in the domestic securities market, holding 51% of all securities in the market. Indexed marketable bonds accounted for just under 37% of their total assets as of end-2018. Of that total, 43% were indexed marketable bonds issued by the HFF, although the share of HFF bonds in their portfolio has fallen in recent years. Instead, the pension funds have invested in other bonds — especially covered bonds issued by deposit institutions — and in specialised investment — real estate companies in particular. Listed and unlisted domestic equity securities and unit shares account for just over 15% of the funds' assets. The pension funds now own about

Chart III-19  
HFF: Prepayment of customer loans and new lending



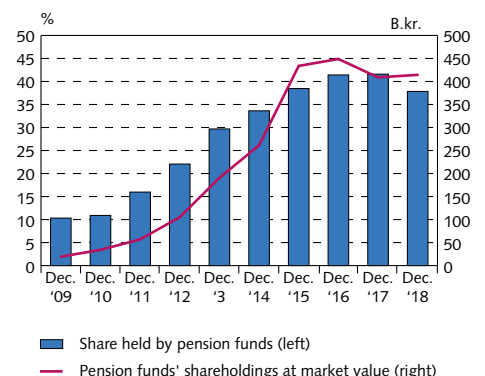
1. Data for 2012 not available.  
Source: Housing Financing Fund.

Chart III-20  
Pension funds: Distribution of assets



1. Based on preliminary figures.  
Sources: Statistics Iceland, Central Bank of Iceland.

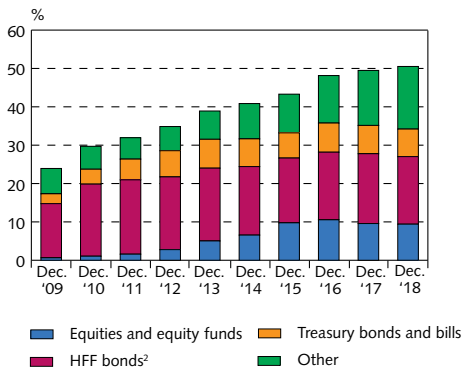
Chart III-21  
Pension funds: Electronically registered equity securities¹



1. Pension funds' holdings as a share of total electronically registered equity securities.  
Source: Nasdaq Iceland.

Chart III-22

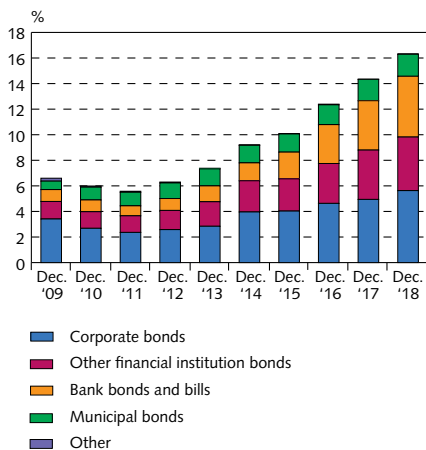
Pension funds: Share of electronically registered securities<sup>1</sup>



1. Pension funds' holdings as a share of total electronically registered securities. 2. Including Housing Bonds and Housing Authority Bonds. Source: Nasdaq Iceland.

Chart III-23

Pension funds: Other assets as a share of electronically registered securities<sup>1</sup>



1. Breakdown of category labelled "Other" in Chart III-22. Source: Nasdaq Iceland.

38% of listed equities in the market, although their domestic share-holdings declined slightly relative to their total assets in 2018.

As long-term investors, the pension funds have generally placed their capital in mortgage loans and securities in Iceland or have invested abroad. To diversify risk, they invest in foreign assets, which accounted for some 26% of their assets at the end of 2018, the majority of them unit shares. Their net capital outflows due to securities totalled 117 b.kr. in 2018, as compared with 79 b.kr. in 2017. Their investments abroad can be expected to keep increasing.

### Contraction in shadow banks' assets

Shadow banks' assets contracted in 2018, according to an extensive Central Bank survey of the size of the shadow banking system.<sup>10</sup> The system currently accounts for 10% of total financial system assets, 1 percentage point less than in the previous year. Including the old banks' holding companies, shadow banks' assets contracted by 85 b.kr., including a contraction of 62 b.kr. in the holding companies' assets. In other respects, the contraction can be traced largely to mutual funds and specialised investment companies. Bond funds' assets increased, however. The shadow banks' financial assets in the conventional banking system shrank slightly between years, indicating the weakening connection between the two systems. Figures on shadow banks' activities do not indicate that conventional banking activities are shifting to shadow banks to any significant degree. There has been an increase, however, in direct lending by mutual funds, which trebled between years to nearly 63 b.kr. at the end of 2018. Because of increased regulation and more stringent requirements on commercial banks than on other financial institutions, there is always the risk of regulatory arbitrage, making it more important to monitor shadow banks' activities.

10. See the definition in Appendix III.

In October 2018, the Ministerial Committee on Economic Affairs and Restructuring of the Financial System announced that work had begun on a review of the statutory framework for monetary policy, macroprudential policy, and financial market supervision. A part of that work entailed merging the Central Bank of Iceland and the Financial Supervisory Authority (FME) into a single institution called the Central Bank of Iceland.

The Ministerial Committee appointed a task force that, in early March 2019, submitted a draft bill of legislation to replace the Act on the Central Bank of Iceland and another bill amending various acts of law because of the merger of the Central Bank and the FME. The Prime Minister and the Minister of Finance and Economic Affairs will probably introduce the bills before Parliament in the weeks to come. In the main, the bills are not intended to change the tasks entrusted to the two institutions jointly under current legislation; instead, they provide for changes pertaining to the merger of projects and to the decision-making structure. After the merger, the Central Bank's key objectives will be to promote price stability, financial stability, and sound and secure financial operations. The framework and implementation of monetary policy are virtually unchanged.

According to the bill on the Central Bank, the Governor will be assisted by three Deputy Governors who will administer the Bank's activities in the areas they are appointed to lead: monetary policy, financial stability, and financial supervision. Decisions on the exercise of the Bank's authorisations in each of these areas will be taken by three committees — the Monetary Policy Committee, the Financial Stability Committee, and the Financial Supervision Committee — whose members will comprise the Governor (who will chair all of the committees), the relevant Deputy Governors, and outside experts in the areas concerned. According to the bill, all decisions entrusted to the FME under current legislation will be taken by the Financial Supervision Committee. In other respects, the Bank's direction will be in the hands of the Governor. This new structure, in which decisions are taken by multi-member committees, is intended to distribute power and formalise the decision-making process. The inclusion of external committee members provides restraint and ensures that decisions are based on a wider range of views.

The structure of the Monetary Policy Committee is unchanged, and the tasks of the Financial Supervision Committee will be comparable to those of the FME Board of Directors. The biggest structural change is in the field of financial stability, which has been in the hands of the Systemic Risk Committee and the Financial Stability Council but will now be in the hands of a single body, the Financial Stability Committee. The Financial Stability Committee will have more external members than its predecessors, and it will take decisions, in addition to issuing recommendations and opinions as the Financial Stability Council has done hitherto. Among other things, the Committee will take decisions on capital buffers, foreign-denominated lending to unhedged borrowers, and ceilings on mortgage lending, and it will wield powers of resolution. The Financial Stability Council will continue to operate, but it has been proposed that its tasks be changed. Therefore, the bill does not provide for an increase in the current number of committees, councils, and boards, although it does change the structure of these bodies and the nature of their work.

It is assumed that the bills will pass into law on 1 January 2020, whereupon all of the functions of the FME will be transferred to the Central Bank.

## Box III-2

### Merger of the Central Bank of Iceland and the Financial Supervisory Authority



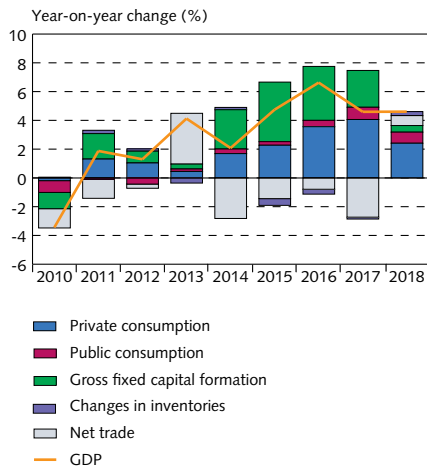


# Appendix I

## Charts

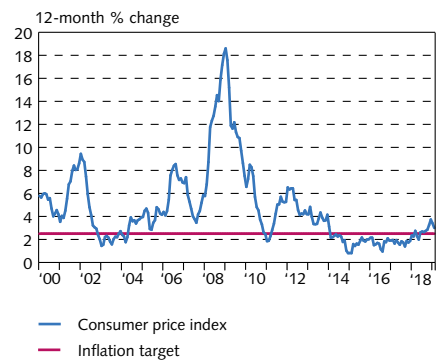
### I Macroeconomic environment

Chart I-1  
Output growth<sup>1</sup>



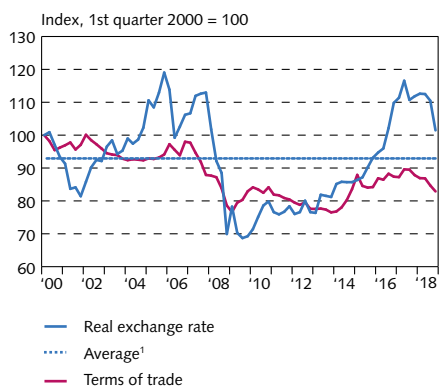
1. Contribution of individual components to output growth.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-2  
Inflation



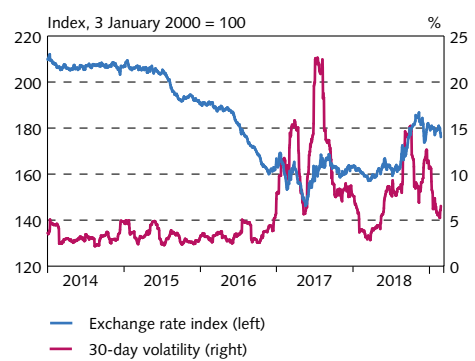
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-3  
Real exchange rate of the króna  
and terms of trade



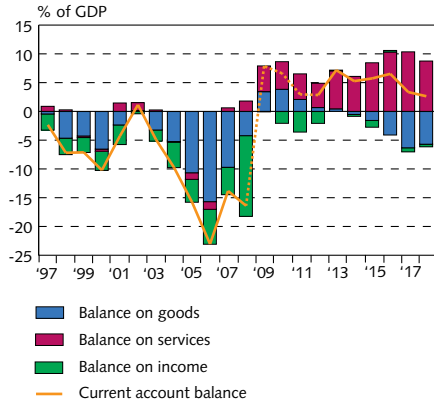
1. Real exchange rate average over the whole period.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-4  
Exchange rate of the króna<sup>1</sup>



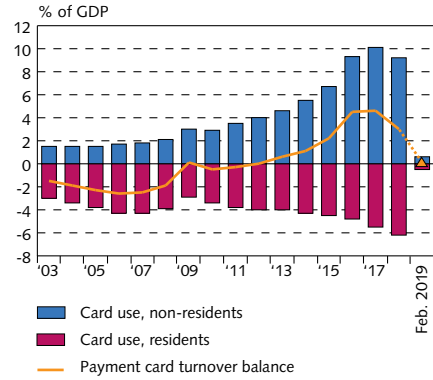
1. Exchange rate index based on average imports and exports, narrow trade basket (1%).  
Source: Central Bank of Iceland.

Chart I-5  
Current account balance<sup>1</sup>



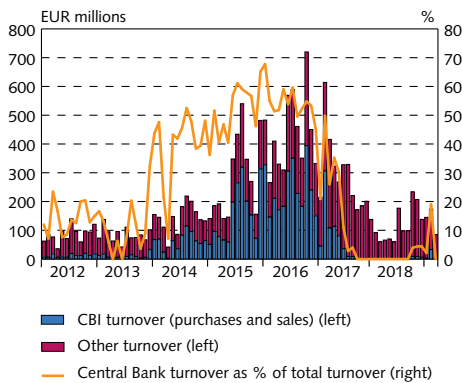
1. Effects of the old banks on factor income and the balance on services from Q4/2008 are ignored. From 2009 through 2012, the effect of Actavis on the balance on income is also ignored, owing to inaccurate data during the period. Secondary income is included in factor income. Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-6  
Payment card turnover balance<sup>1</sup>



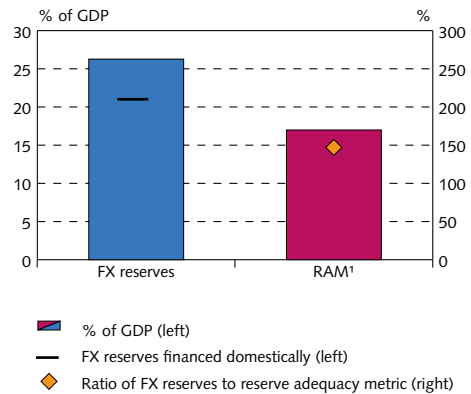
1. Residents' card use abroad is expressed with a negative sign. The card turnover balance shows the difference between foreign payment card use in Iceland and Icelanders' payment card use abroad. Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-7  
Foreign exchange market turnover



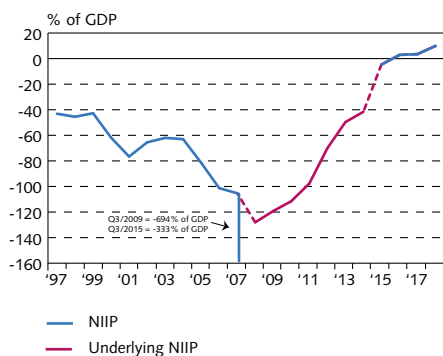
Source: Central Bank of Iceland.

Chart I-8  
Central Bank reserve adequacy  
Position as of end-2018



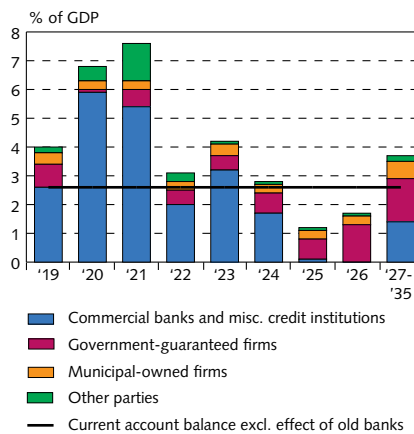
1. IMF reserve adequacy metric. Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-9  
Net international investment position<sup>1</sup>



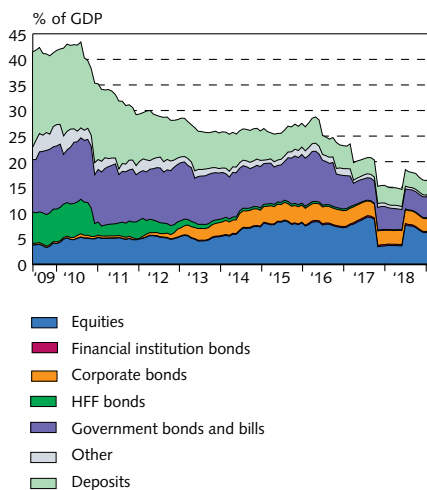
1. Based on underlying position from 2008 through end-2015; i.e., adjusted for the effects of settling the failed banks' estates and assuming equal distribution of assets to general creditors. At the end of 2015, the estates of the failed financial institutions reached composition agreements entailing the write-off of a large portion of their debt. As a result, there was no difference between the NIIP and the underlying NIIP.  
Sources: Statistics Iceland, Central Bank of Iceland.

Mynd I-10  
Repayment profile of long-term foreign loans, excluding the Treasury<sup>1</sup>



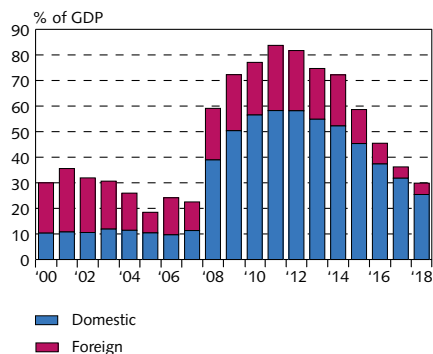
1. Foreign long-term loans based on position as of end-2018 and exchange rate of 26 February 2019.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-11  
Foreign-owned deposits and electronically registered securities in Iceland



Sources: Statistics Iceland, Nasdaq Iceland, Central Bank of Iceland.

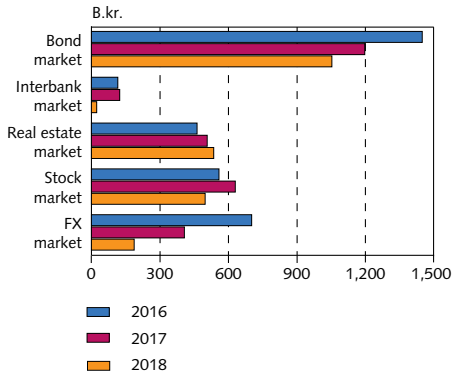
Chart I-12  
Treasury debt



Sources: Statistics Iceland, Government Debt Management.

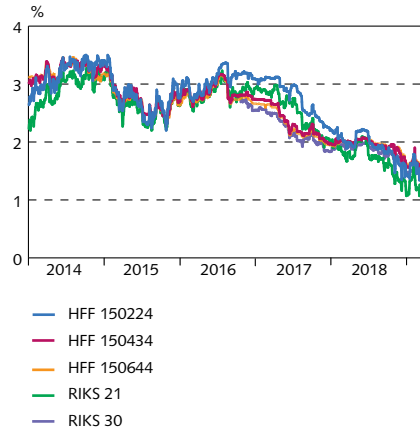
## II Financial markets

Chart II-1  
Domestic financial market turnover



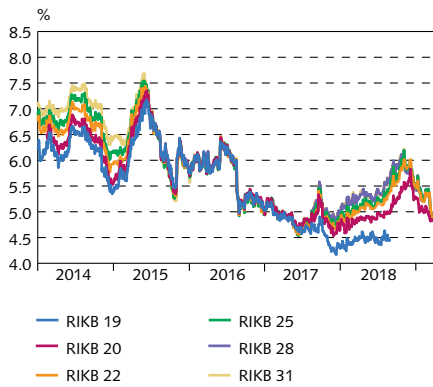
Sources: Nasdaq Iceland, Registers Iceland, Central Bank of Iceland.

Chart II-2  
Indexed bond yields



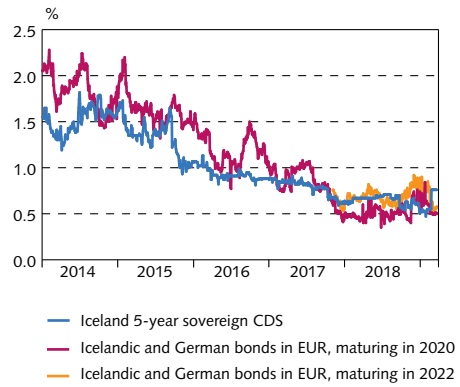
Source: Nasdaq Iceland.

Chart II-3  
Nominal Treasury bond yields



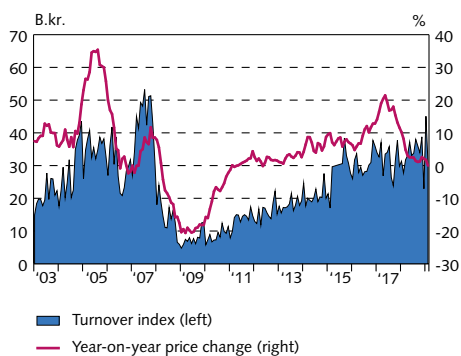
Source: Nasdaq Iceland.

Chart II-4  
Government bond spreads



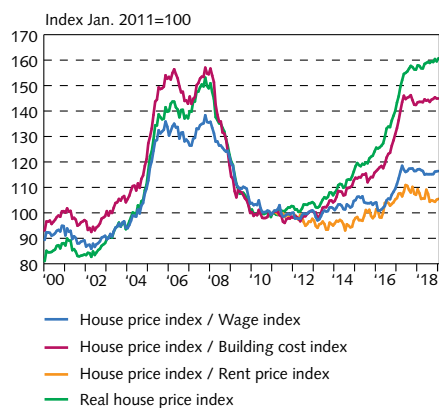
Sources: Bloomberg, Thomson Reuters.

Chart II-5  
Real house price increase and turnover in capital area<sup>1</sup>



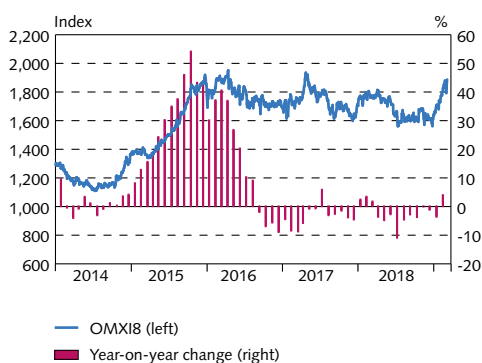
1. Year-on-year change in the capital area house price index, deflated by the consumer price index. Turnover in the capital area according to the Commissioner's office. Mars-August 2015 data is linearly interpolated to correct for the effects of a strike at the Commissioner's office.  
 Sources: Registers Iceland, Statistics Iceland.

Chart II-6  
Capital area house prices and their determinants<sup>1</sup>



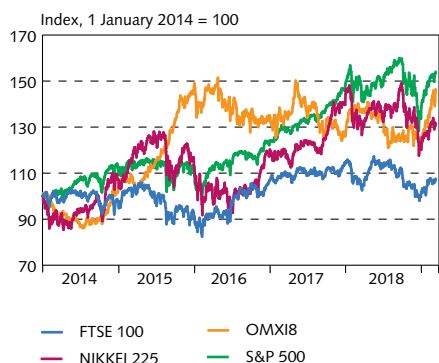
1. Capital area house price index, deflated with the consumer price index and in a ratio with other indices.  
 Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

Chart II-7  
OMX18 share price index



Source: Nasdaq Iceland.

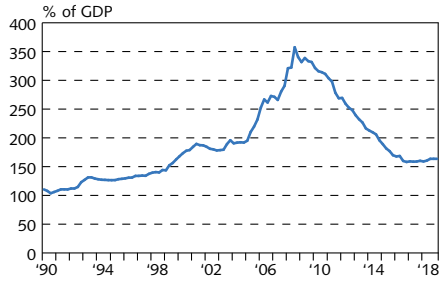
Chart II-8  
Share price indices



Source: Thomson Reuters.

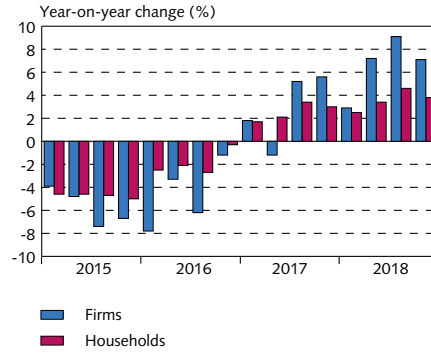
### III Households and businesses

Chart III-1  
Credit-to-GDP ratio<sup>1</sup>



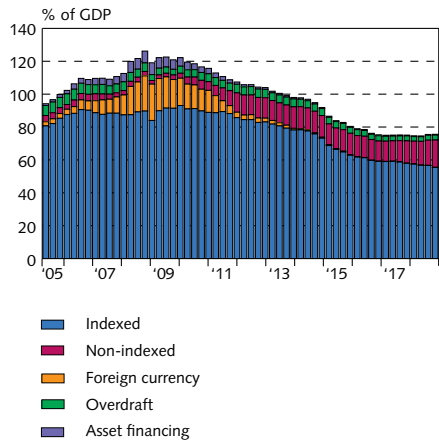
1. Credit to households and non-financial firms, excluding holding companies, relative to GDP. Retroactive revision of national accounts causes a change since the last publishing.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-2  
Real credit growth to households and firms<sup>1</sup>



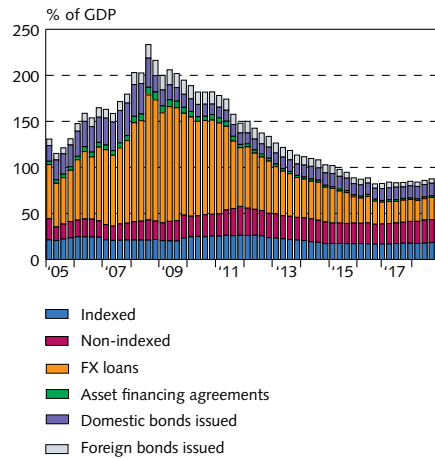
1. Year-on-year change in total credit to households and non-financial firms, excluding holding companies, deflated with the consumer price index. Claim value.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-3  
Households: Debt relative to GDP



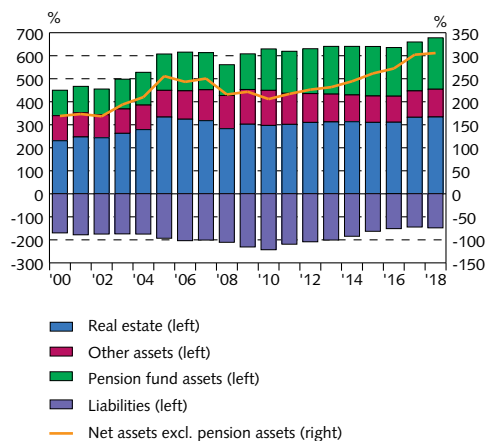
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-4  
Companies: Debt relative to GDP<sup>1</sup>



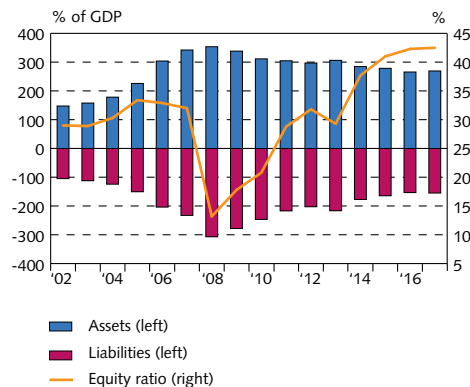
1. Debt owed to domestic and foreign financial undertakings and market bonds issued. Excluding debt owed by holding companies.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-5  
Households: Assets and liabilities relative to disposable income<sup>1</sup>



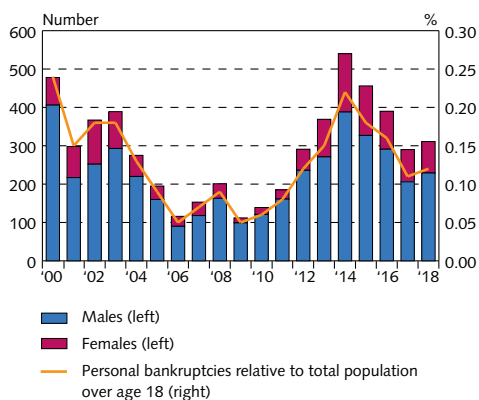
1. Pension fund assets are based on payouts after deduction of 30% income tax.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-6  
Companies: Assets and liabilities relative to GDP and equity ratio<sup>1</sup>



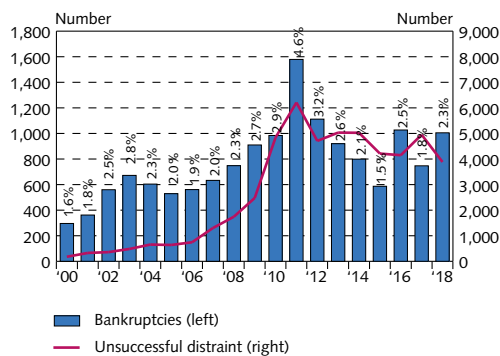
1. Commercial economy excluding pharmaceuticals, financial, and insurance companies (ISAT no. 03-20, 22-63, 68-82, 95-96).  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-7  
Individuals: Personal bankruptcies<sup>1</sup>



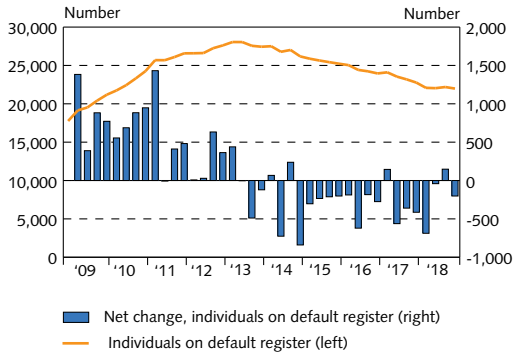
1. Total for entire year.  
Sources: Council of District Court Administration, Statistics Iceland.

Chart III-8  
Companies: Bankruptcies and unsuccessful distraint actions<sup>1</sup>



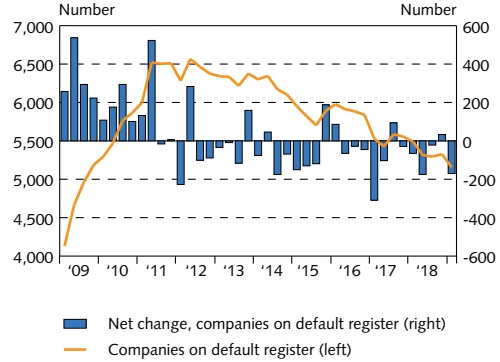
1. The percentages show bankruptcies as a share of the total number of firms.  
Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

Chart III-9  
Individuals: Number on default register



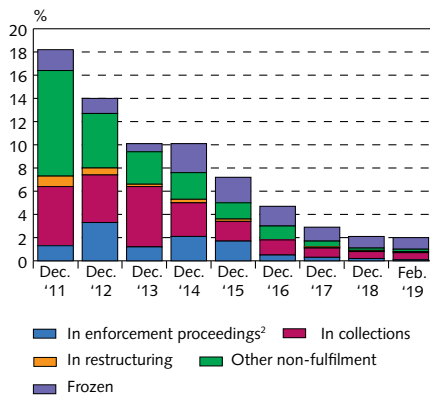
Source: CreditInfo.

Chart III-10  
Companies: Number on default register



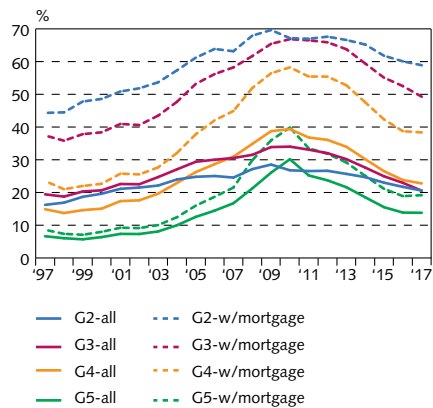
Source: CreditInfo.

Chart III-11  
Households: Non-performing loans from D-SIBs and the HFF<sup>1</sup>  
Cross-default method



1. Domestic systemically important banks, parent companies, book value. 2. The share of loans in enforcement proceedings and collections declined in December 2011 because the HFF did not send out dunning letters or forced sale requests in the latter half of the month.  
Source: Financial Supervisory Authority.

Chart III-12  
Share of taxpayers owing more than 300% of disposable income<sup>1</sup>  
By income group and debtor type

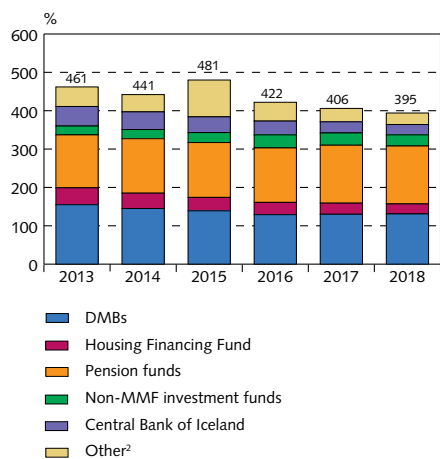


1. The broken lines show the share of taxpayers with mortgage debt whose total debt exceeds 300% of their disposable income. The lowest-income group, G1, is not shown.  
Sources: Statistics Iceland, Central Bank of Iceland.



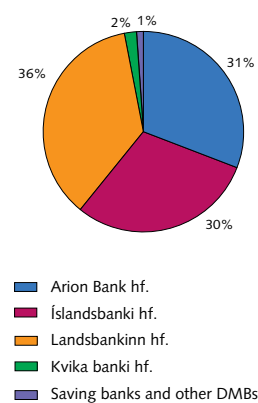
## IV The financial system

Chart IV-1  
Financial system: Assets relative to GDP<sup>1</sup>



1. Parent companies. 2. Beginning on 27 February 2019, Byr, ESI, the Framtíðin credit fund, and Sparisjóðabankinn (SPB) are classified among other financial institutions. Data are as follows: for Byr, from January 2016 onwards; for ESI, from December 2009 onwards; for Framtíðin, from May 2017 onwards, and for SPB, from February 2016 onwards.  
Source: Central Bank of Iceland.

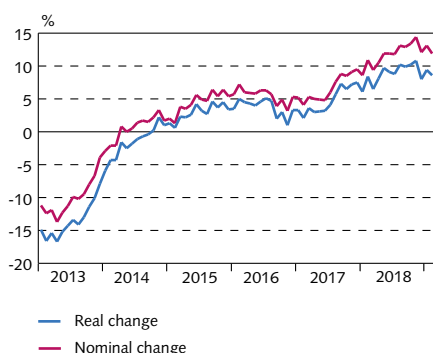
Chart IV-2  
DMBs: Share of total assets<sup>1</sup>  
December 2018



1. Parent companies.  
Source: Central Bank of Iceland.

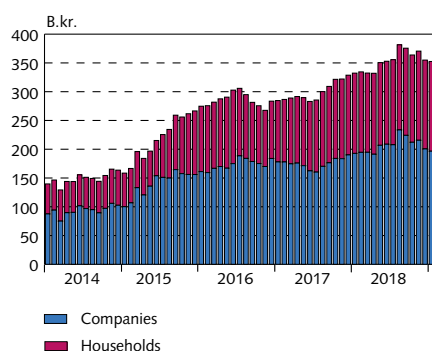
## V Systemically important banks and deposit institutions – lending

Chart V-1  
D-SIB: Lending to households and companies<sup>1</sup>



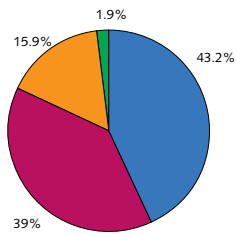
1. Annualised changes. Adjusted for Government debt relief measures.  
Source: Central Bank of Iceland.

Chart V-2  
D-SIB: Net new lending to households and companies<sup>1</sup>



1. D-SIB: Domestic systemically important banks. New loans net of prepayments and final payments. 12-month moving total. Prepayments are payments in excess of contractual payments.  
Source: Central Bank of Iceland.

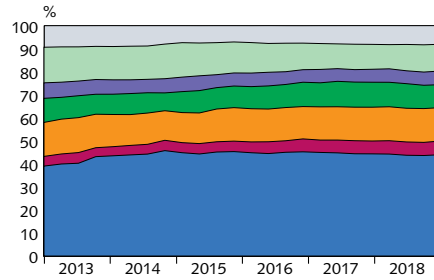
Chart V-3  
DMBs: Distribution of loans by type<sup>1</sup>  
End of year 2018



- Non-indexed
- Indexed
- Foreign currency<sup>2</sup>
- Asset financing agreements

1. Parent companies. 2. Foreign currency loans include exchange rate-linked loans.  
Source: Central Bank of Iceland.

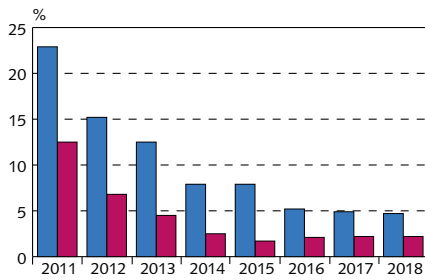
Chart V-4  
D-SIB: Lending classified by borrower<sup>1</sup>



- Households
- Building and construction
- Real estate
- Services
- Retail
- Fisheries
- Other

1. Loans to each sector as a share of total lending to households and operating companies.  
Source: Central Bank of Iceland.

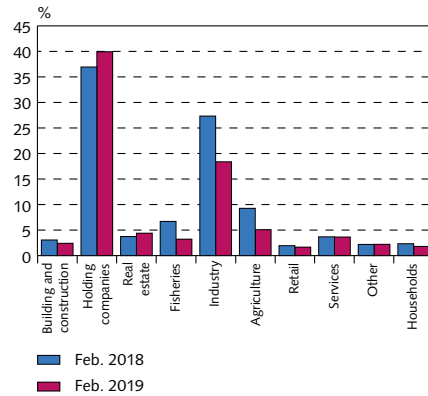
Chart V-5  
D-SIB: Default ratios<sup>1</sup>



- Non-performing loans; i.e., loans past due by over 90 days, frozen or deemed unlikely to be paid (cross-default method).
- Loans in default; i.e., loans past due by over 90 days (facility level).

1. Domestic systemically important banks, parent companies, book value. EBA definition for non-performing loans used from 2018 onwards (red).  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-6  
D-SIB: Non-performing loan ratios<sup>1</sup>



1. Domestic systemically important banks, parent companies, book value.  
Source: Financial Supervisory Authority.

Chart V-7  
D-SIB: Status of non-performing loans to households<sup>1</sup>

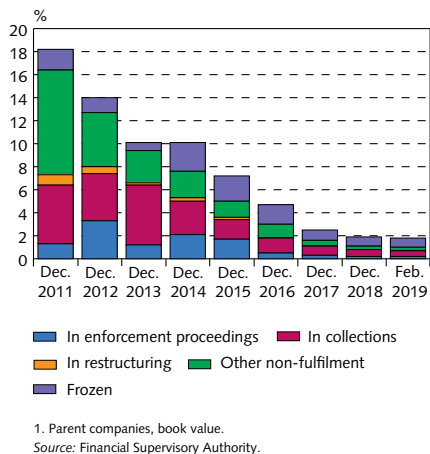
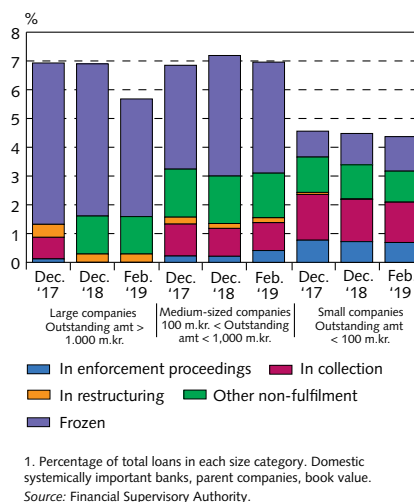


Chart V-8  
D-SIB: Status of non-performing corporate loans, by claim amount<sup>1</sup>



## VI Systemically important banks and other deposit institutions – operations and liquidity

Chart VI-1  
Commercial banks: Capital adequacy ratios<sup>1</sup>

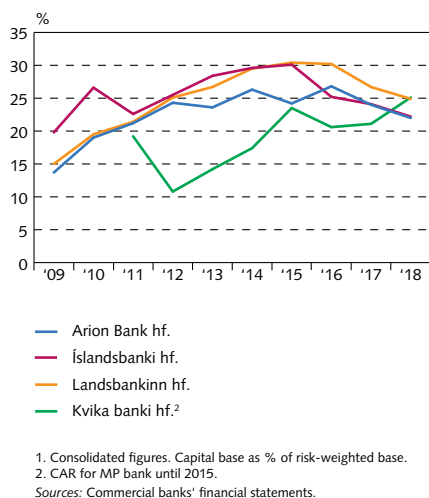


Chart VI-2  
D-SIB: Assets and liabilities<sup>1</sup>  
End of year 2018

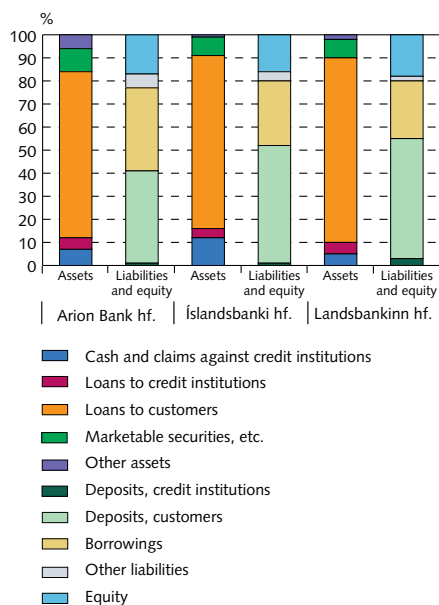
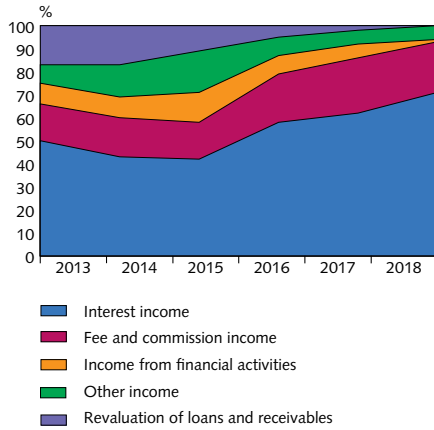
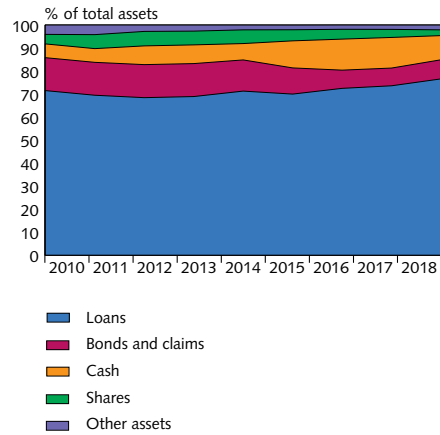


Chart VI-3  
D-SIB: Operating income<sup>1</sup>



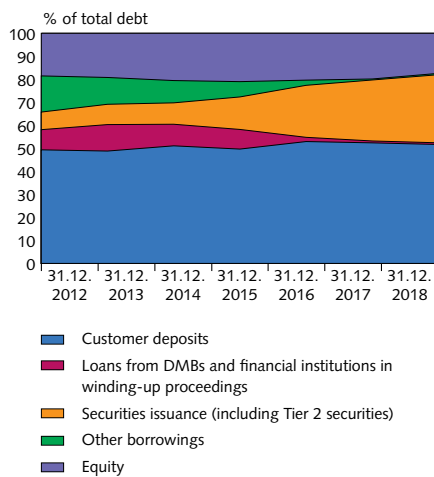
1. Domestic systemically important banks, consolidated figures. Sources: Commercial banks' financial statements, Central Bank of Iceland.

Chart VI-4  
D-SIB: Assets<sup>1</sup>



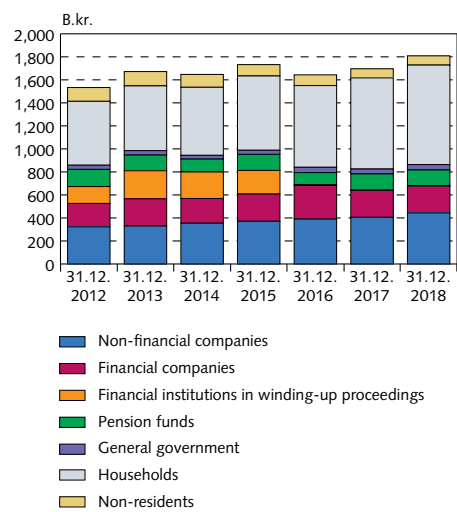
1. Domestic systemically important banks, parent companies. Source: Central Bank of Iceland.

Chart VI-5  
D-SIB: Funding<sup>1</sup>



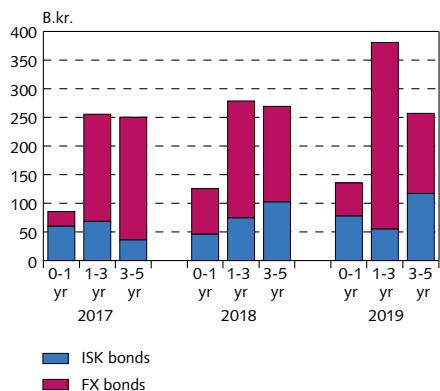
1. Domestic systemically important banks, parent companies. Including pension fund deposits. Sources: Statistics Iceland, Central Bank of Iceland.

Chart VI-6  
D-SIB: Depositors<sup>1</sup>



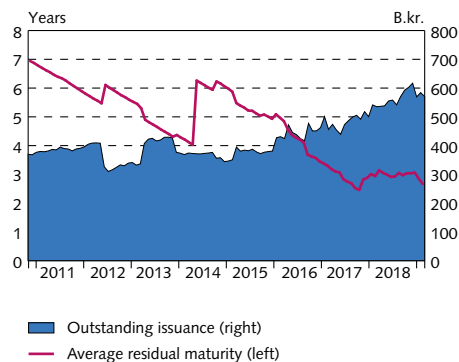
1. Domestic systemically important banks, parent companies. Source: Central Bank of Iceland.

Chart VI-7  
D-SIB: Bond maturities<sup>1</sup>



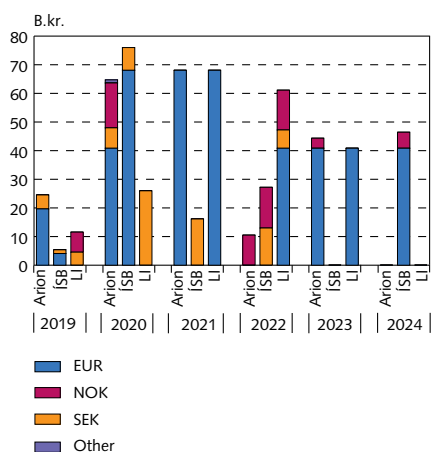
1. Instalments and interest. Domestic systemically important banks, parent companies. As of end-January each year.  
Source: Central Bank of Iceland.

Chart VI-8  
D-SIB: Average residual maturity and total issuance of funding in foreign currency<sup>1</sup>



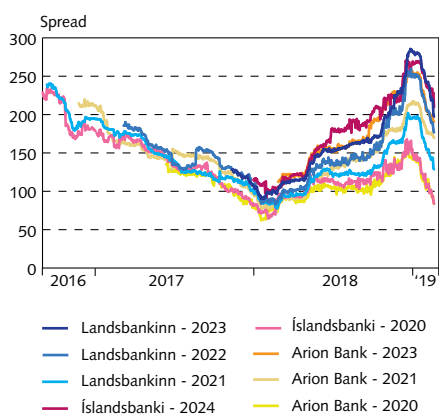
1. D-SIB: Domestic systemically important banks.  
Sources: Nasdaq Iceland, Central Bank of Iceland.

Chart VI-9  
D-SIB: Foreign bonds by maturity and currency<sup>1</sup>



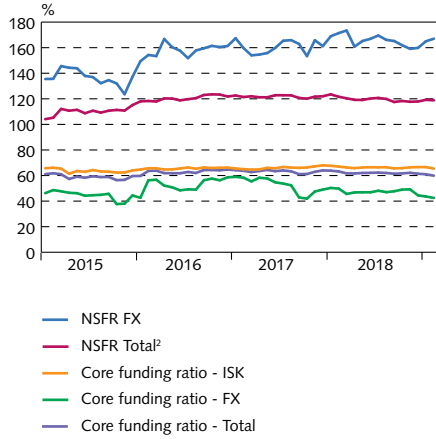
1. At 28 February 2019 exchange rate. Not included in the chart is Arion Bank NOK issue maturing in 2027, in the total amount of 3.4 b.kr., and Tier 2 issuance from Arion Bank, Íslandsbanki and Landsbankinn, in the total amount of 11.1 b.kr.  
Source: Nasdaq Iceland.

Chart VI-10  
D-SIB: Spread on listed foreign bonds, EUR<sup>1</sup>



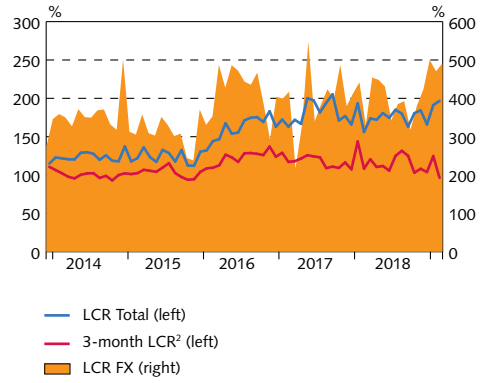
1. Spread on Euro benchmark curve.  
Source: Thomson Reuters.

Chart VI-11  
D-SIB: NSFR ratio and ratio of core funding to total funding<sup>1</sup>



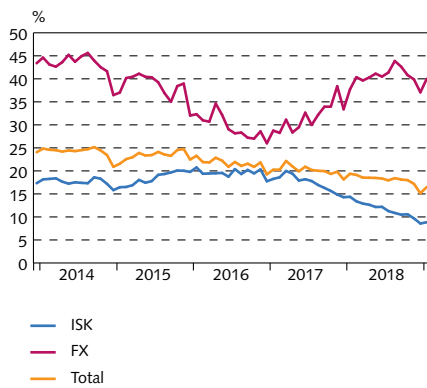
1. D-SIB: Domestic systemically important banks. Core funding is defined here as deposits held by resident individuals and non-financial companies (excluding pension funds), plus capital, subordinated loans, and issued negotiable securities with a residual maturity of more than three years. 2. According to Central Bank rules on stable funding, the Bank also monitors the NSFR for all currencies combined.  
Source: Central Bank of Iceland.

Chart VI-12  
D-SIB: Liquidity coverage ratio<sup>1</sup>



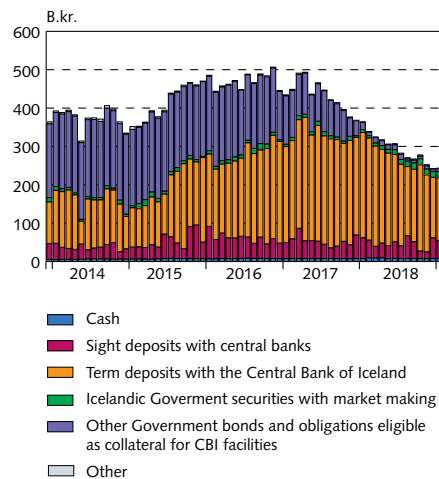
1. Domestic systemically important banks, consolidated figures  
2. In accordance with older liquidity rules. New LCR rules were implemented in March 2017.  
Source: Central Bank of Iceland.

Chart VI-13  
DMBs: Ratio of liquid assets to total assets<sup>1</sup>



1. Parent companies.  
Source: Central Bank of Iceland.

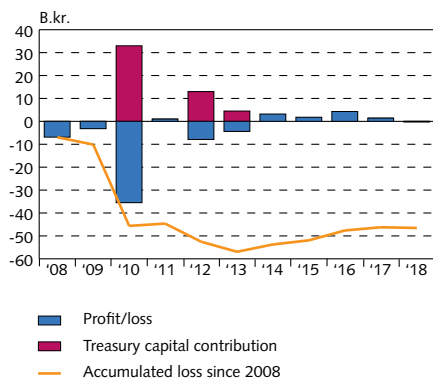
Chart VI-14  
D-SIB: Liquid assets<sup>1</sup>



1. Liquid assets in Icelandic krónur. 2. Domestic systemically important banks, parent companies.  
Source: Central Bank of Iceland.

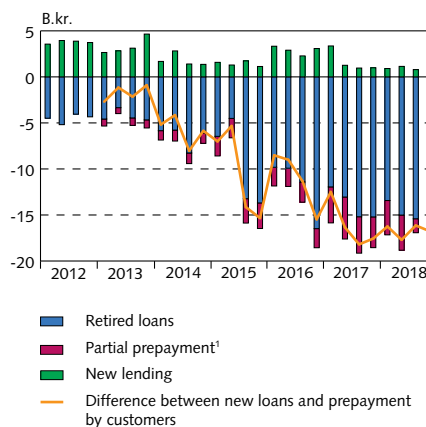
## VII Other financial market entities

Chart VII-1  
HFF: Profit/loss and Treasury capital contribution



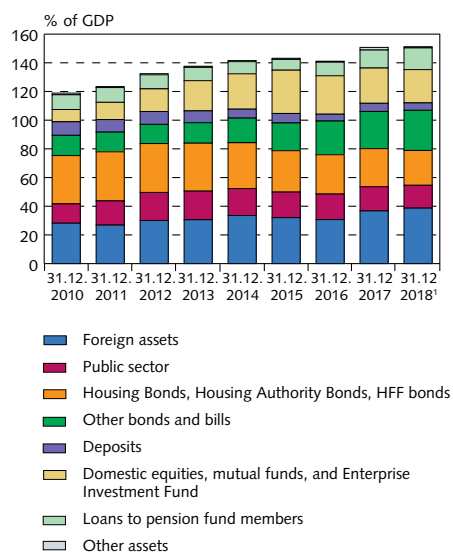
Sources: HFF annual accounts.

Chart VII-2  
HFF: Prepayment of customer loans and new lending



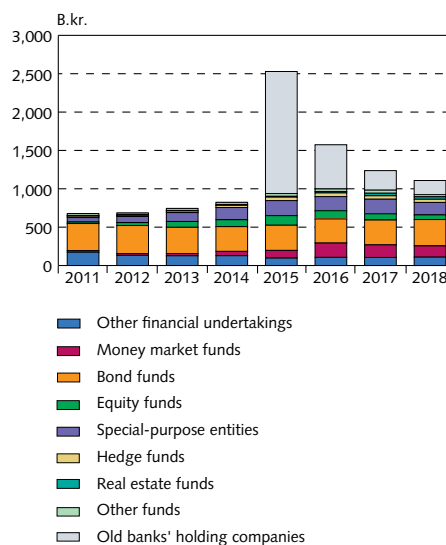
1. Data for 2012 not available.  
Source: Housing Financing Fund.

Chart VII-3  
Pension funds: Distribution of assets



1. Based on preliminary figures.  
Sources: Statistics Iceland, Central Bank of Iceland.

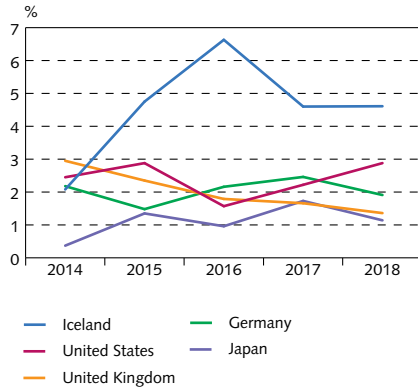
Chart VII-4  
Size of the shadow banking system<sup>1</sup>



1. Constant prices. Definition of shadow banking can be found in appendix III.  
Source: Central Bank of Iceland.

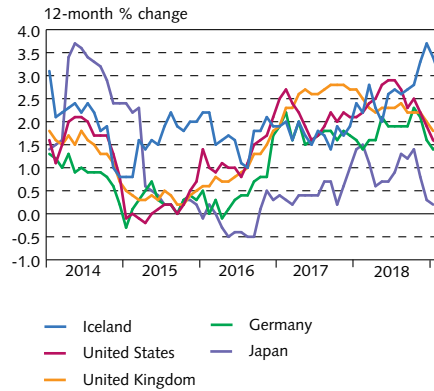
## VIII International comparison

Chart VIII-1  
Output growth



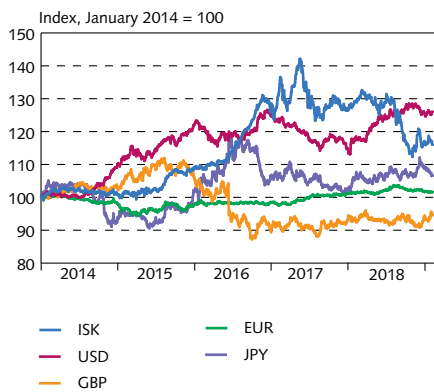
Sources: Statistics Iceland, Thomson Reuters.

Chart VIII-2  
Inflation<sup>1</sup>



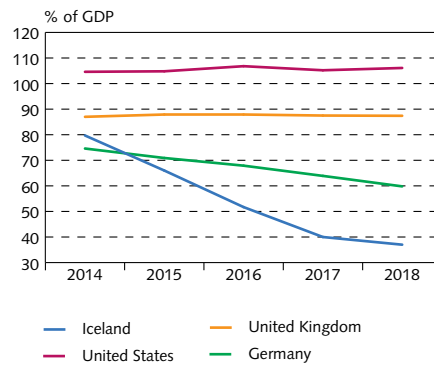
1. Consumer price index.  
Sources: Statistics Iceland, Thomson Reuters.

Chart VIII-3  
Currency exchange rates<sup>1</sup>



1. BIS nominal indices.  
Source: BIS.

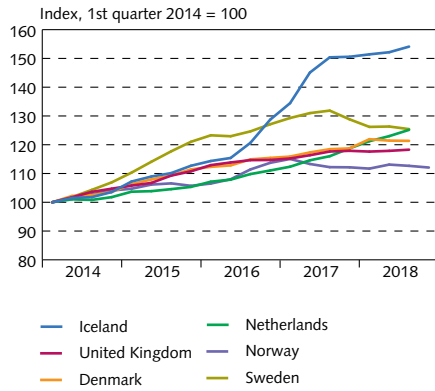
Chart VIII-4  
Government debt



Source: IMF.

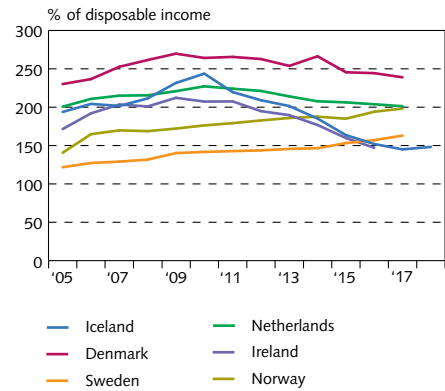


Chart VIII-5  
Real estate prices



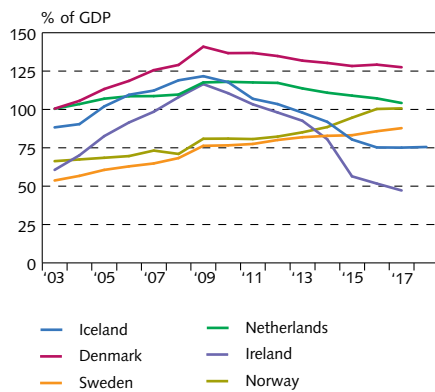
Source: OECD.

Chart VIII-6  
Households: Debt relative to disposable income



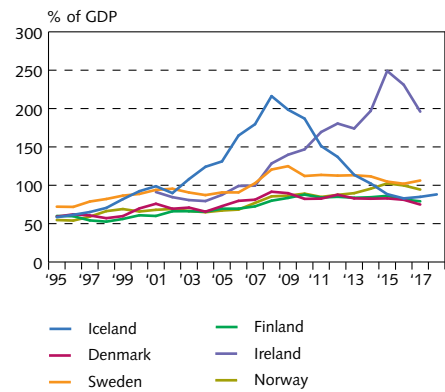
Sources: Eurostat, Statistics Iceland, Central Bank of Iceland.

Chart VIII-7  
Households: Debt relative to GDP



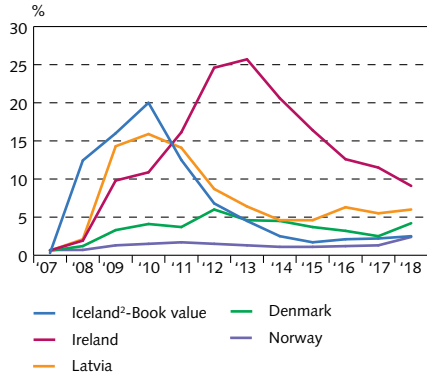
Sources: Eurostat, Statistics Iceland, Central Bank of Iceland.

Chart VIII-8  
Corporate debt relative to GDP in international comparison<sup>1</sup>



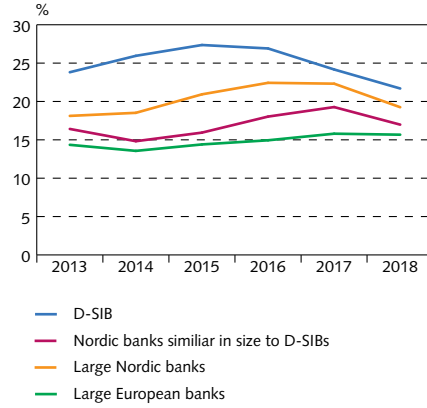
1. Debt owed to domestic and foreign financial undertakings and market bonds issued.  
 Sources: Eurostat, Statistics Iceland, Central Bank of Iceland.

Chart VIII-9  
Default ratios<sup>1</sup>



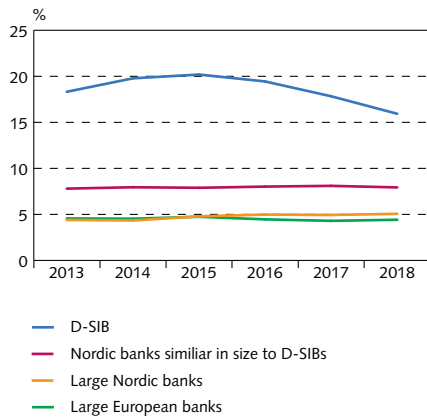
1. Households and businesses. Banks' non-performing loans as a percentage of gross loan portfolio w/o write-downs. 2018-Q2 figures for Denmark, Ireland and Norway and 2018-Q3 figures for Latvia.  
2. 2007: Figures estimated from the annual accounts of the failed banks. 2008: Central Bank estimates.  
Sources: Financial Supervisory Authority, IMF, World Bank, Central Bank of Iceland.

Chart VIII-10  
Tier ratio  
Average of ratios



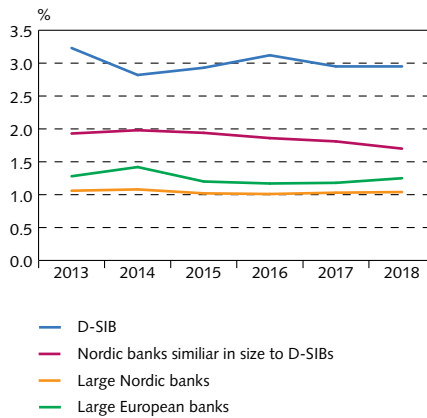
Source: S&P Global Market Intelligence.

Chart VIII-11  
Leverage ratio<sup>1</sup>  
Average of ratios



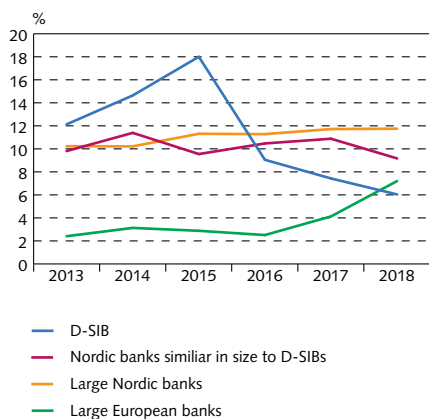
1. IFRS Tier 1 leverage ratio.  
Source: S&P Global Market Intelligence.

Chart VIII-12  
Net interest margin  
Average of ratios



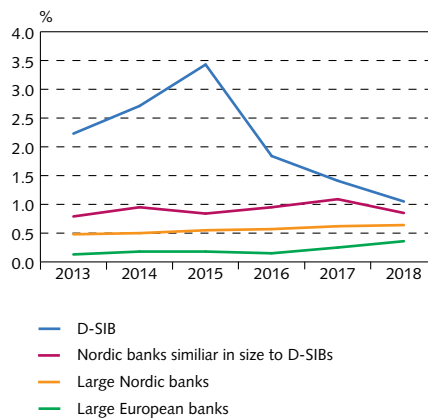
Source: S&P Global Market Intelligence.

Chart VIII-13  
Return on equity  
Average of ratios



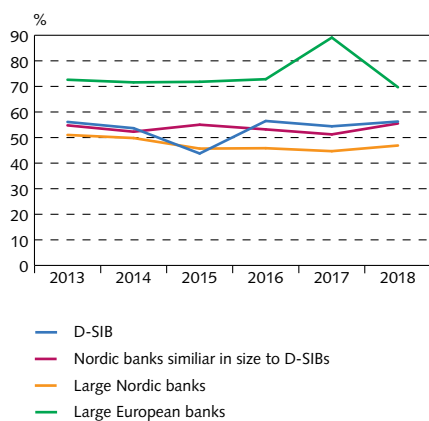
Source: S&P Global Market Intelligence.

Chart VIII-14  
Return on total assets  
Average of ratios



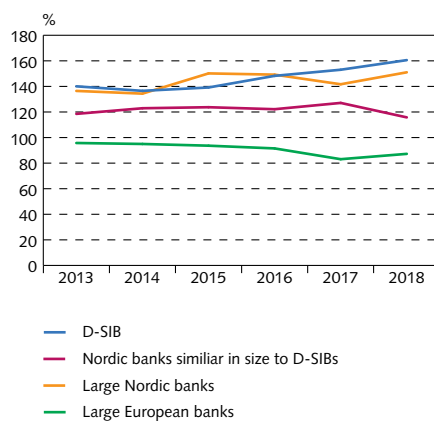
Source: S&P Global Market Intelligence.

Chart VIII-15  
Cost-to-income ratios<sup>1</sup>  
Average of ratios



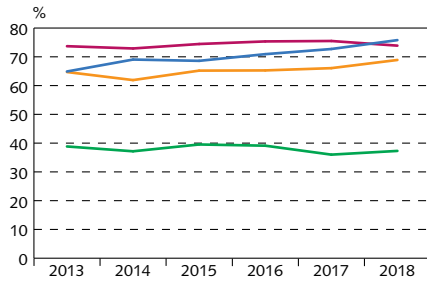
1. Ratio of costs to income.  
Source: S&P Global Market Intelligence.

Chart VIII-16  
Loans / deposits  
Average of ratios



Source: S&P Global Market Intelligence.

Chart VIII-17  
Loans / assets  
Average of ratios



- D-SIB
- Nordic banks similar in size to D-SIBs
- Large Nordic banks
- Large European banks

Source: S&P Global Market Intelligence.

## Appendix II

### Tables

Table 1 Financial system assets<sup>1</sup>

Assets, b.kr	31.12. 2014	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	Change from 31.12. 2017, %
Central Bank of Iceland	957	948	901	765	755	-1
Deposit-taking corporations excluding the Central Bank	2,997	3,197	3,222	3,405	3,681	8
– Commercial banks	2,939	3,175	3,199	3,381	3,656	8
– Savings banks and other deposit-taking corporations	59	22	23	24	26	9
Money market funds	51	93	177	158	147	-7
Non-MMF investment funds <sup>2</sup>	437	506	668	686	667	-3
Other financial intermediaries <sup>3,4</sup>	1,537	2,786	1,773	1,426	1,345	-4
– Housing Financing Fund	824	803	787	761	731	-4
Financial auxiliaries	59	41	52	54	48	-12
Insurance corporations	169	171	177	186	196	5
Pension funds	2,935	3,284	3,540	3,943	4,238	9
Total assets	9,142	11,026	10,510	10,624	11,077	5

1. Including the old banks' holding companies from 31 December 2015 onwards. 2. Effective 31 December 2016, specialised investment companies are included with equity, investment, and institutional investment funds. 3. Effective 31 December 2015, after finalisation of composition agreements, the old banks' holding companies are classified as other financial corporations. 4. Beginning on 27 February 2019, Byr, ESI, the Framtíðin credit fund, and Sparisjóðabankinn (SPB) are classified among other financial institutions. Data are as follows: for Byr, from January 2016 onwards; for ESI, from December 2009 onwards; for Framtíðin, from May 2017 onwards; and for SPB, from February 2016 onwards.

Source: Central Bank of Iceland.

Table 2 DMB assets

Assets, b.kr	31.12. 2014	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	Change from 31.12. 2017, %
Cash and cash balance with Central Bank	139,069	294,599	385,056	378,700	293,870	-22
Deposits in domestic deposit-taking corporations	5,286	2,888	4,176	6,075	658	-89
Deposits in foreign deposit-taking corporations	91,729	99,074	56,299	77,887	107,039	37
Domestic credit	1,980,343	2,072,205	2,187,741	2,407,764	2,708,062	12
Foreign credit	162,477	142,601	132,419	133,857	153,272	15
Domestic marketable bonds and bills	270,133	263,711	206,056	116,001	95,842	-17
Foreign marketable bonds and bills	133,415	99,227	53,590	85,778	137,139	60
Domestic equities and unit shares	144,260	152,631	130,720	114,561	101,026	-12
Foreign equities and unit shares	2,786	1,844	2,197	14,276	3,077	-78
Other domestic assets	63,576	62,516	56,906	57,445	68,435	19
Other foreign assets	4,315	5,767	6,703	12,478	13,068	5
Total	2,997,389	3,197,062	3,221,861	3,404,812	3,681,488	8

Source: Central Bank of Iceland.

Table 3 Other financial corporations' assets

Assets, b.kr.	31.12. 2014	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	Change from 31.12. 2017, %
Cash and cash balance with Central Bank	45,333	70,317	109,447	93,566	99,432	6
Deposits in domestic deposit-taking corporations	72,135	233,424	83,980	55,036	53,603	-3
Deposits in foreign deposit-taking corporations	76,326	616,589	60,762	37,924	36,083	-5
Domestic credit	1,201,994	1,039,682	875,812	801,463	757,798	-5
Foreign credit	8,729	163,947	136,426	64,940	51,646	-20
Domestic marketable bonds and bills	49,717	241,577	217,461	178,233	211,847	19
Foreign marketable bonds and bills	1,076	4,965	3,501	998	266	-73
Domestic equities and unit shares	17,650	225,311	165,317	109,192	101,146	-7
Foreign equities and unit shares	7,603	94,481	68,507	46,380	3,720	-92
Other domestic assets	53,993	69,981	39,838	31,776	19,609	-38
Other foreign assets	2,521	25,483	12,323	6,268	6,615	6
Total	1,537,078	2,785,755	1,773,375	1,425,775	1,341,764	-6

1. Beginning on 27 February 2019, Byr, ESI, the Framtíðin credit fund, and Sparisjóðabankinn (SPB) are classified among other financial institutions. Data are as follows: for Byr, from January 2016 onwards; for ESI, from December 2009 onwards; for Framtíðin, from May 2017 onwards; and for SPB, from February 2016 onwards.

Source: Central Bank of Iceland.

Table 4 Pension fund assets

Assets, b.kr.	31.12. 2014	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	Change from 31.12. 2017, %
Deposits in domestic deposit-taking corporations	129,275	151,726	117,992	148,299	145,203	-3
Deposits in foreign deposit-taking corporations	6,273	8,605	18,450	20,451	13,884	-32
Domestic credit	171,063	175,253	238,182	332,072	428,674	29
Foreign credit	-	80	200	268	309	16
Domestic marketable bonds and bills	1,408,405	1,509,429	1,751,677	1,809,087	1,907,248	5
Foreign marketable bonds and bills	3,269	1,777	1,011	609	3,847	634
Domestic equities and unit shares	511,373	692,267	681,198	644,009	650,559	-1
Foreign equities and unit shares	685,428	724,540	750,092	940,192	1,065,978	15
Domestic insurance and pension assets	13,291	14,281	17,313	19,217	18,334	-5
Foreign insurance and pension assets	-	35	44	63	69	9
Other domestic assets	6,695	6,335	7,874	30,321	4,554	-85
Other foreign assets	-	3	1	1	1	0
Total	2,935,072	3,284,331	3,584,033	3,944,589	4,238,659	7

Source: Central Bank of Iceland.

Table 5 Insurance company assets

Assets, b.kr.	31.12. 2014	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	Change from 31.12. 2017, %
Cash and cash balance with Central Bank	-	1,753	2,053	1,122	1,046	-7
Deposits in domestic deposit-taking corporations	8,394	7,258	4,452	4,673	5,811	24
Deposits in foreign deposit-taking corporations	68	1,395	208	149	66	-56
Domestic credit	2,880	1,239	1,487	3,449	3,426	-1
Foreign credit	1	0	0	0	0	0
Domestic marketable bonds and bills	70,578	66,092	67,595	67,446	71,608	6
Foreign marketable bonds and bills	4,495	3,999	3,740	4,467	8,550	91
Domestic equities and unit shares	43,745	53,421	60,664	65,696	60,990	-7
Foreign equities and unit shares	6,932	6,457	5,945	8,182	8,837	8
Domestic insurance and pension assets	19,911	17,024	17,869	20,662	23,040	12
Foreign insurance and pension assets	1,521	7,257	7,451	5,815	6,558	13
Other domestic assets	8,771	3,835	4,426	3,284	4,131	26
Other foreign assets	1,269	1,117	1,312	1,546	1,528	-1
Total	168,565	170,847	177,202	186,491	195,592	5

Source: Central Bank of Iceland.

Table 6 D-SIB: Income and expenses<sup>1</sup>

<i>Income and expenses, b.kr</i>	31.12. 2014	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	<i>Change from 31.12. 2017, %</i>
<i>Arion Bank hf.</i>						
Operating income	54,328	86,620	54,774	49,532	46,171	-7
Net interest income	24,220	26,992	29,900	28,921	29,319	1
Net fee and commission income	13,309	14,484	13,978	10,211	10,350	1
Other operating income	16,799	45,144	10,896	10,400	6,502	-37
Operating expenses	26,701	27,811	30,540	25,562	26,278	3
Change in loan values	-2,135	3,087	-7,236	-312	3,525	-1,230
Income tax	7,458	6,043	9,731	9,138	7,432	-19
Net after-tax gain from discontinued operations	6,290	0	0	-725	-1,159	60
Profit	28,594	49,679	21,739	14,419	7,777	-46
<i>Íslandsbanki hf.</i>						
Operating income	42,443	44,673	52,716	44,189	44,987	2
Net interest income	27,105	28,010	31,802	29,999	31,937	6
Net fee and commission income	11,483	13,170	13,723	13,750	12,227	-11
Other operating income	3,855	3,493	7,191	440	823	87
Operating expenses	23,956	24,827	26,478	27,638	28,823	4
Change in loan values	-8,810	-8,135	-735	-1,556	-1,584	2
Income tax	8,683	8,729	9,754	7,456	8,015	8
Net after-tax gain from discontinued operations	4,136	1,326	2,939	2,575	912	-65
Profit	22,750	20,578	20,158	13,226	10,645	-20
<i>Landsbankinn hf.</i>						
Operating income	43,486	54,395	49,018	51,727	52,558	2
Net interest income	28,073	32,324	34,650	36,271	40,814	13
Net fee and commission income	5,836	6,841	7,809	8,431	8,157	-3
Other operating income	9,577	15,230	6,559	7,025	3,587	-49
Operating expenses	24,088	23,732	23,514	23,850	23,937	0
Change in loan values	-20,128	-18,216	318	-1,785	-1,352	-24
Income tax	9,789	12,419	8,543	9,896	10,713	8
Net after-tax gain from discontinued operations	0	0	0	0	0	-
Profit	29,737	36,460	16,643	19,766	19,260	-3
<i>D-SIBs</i>						
Operating income	140,257	185,688	156,508	145,448	143,716	-1
Net interest income	79,398	87,326	96,352	95,191	102,070	7
Net fee and commission income	30,628	34,495	35,510	32,392	30,734	-5
Other operating income	30,231	63,867	24,646	17,865	10,912	-39
Operating expenses	74,745	76,370	80,532	77,050	79,038	3
Change in loan values	-31,073	-23,264	-7,653	-3,653	589	-116
Income tax	25,930	27,191	28,028	26,490	26,160	-1
Net after-tax gain from discontinued operations	10,426	1,326	2,939	1,850	-247	-113
Profit	81,081	106,717	58,540	47,411	37,682	-21

1. Figures are based on methodology used by SNL Financial. Figures on operating income and expense could differ from those published in the banks' annual accounts.

Source: SNL Financial.

Table 7 D-SIB: Key ratios

%	31.12.2014	31.12.2015	31.12.2016	31.12.2017	31.12.2018
Return on equity	14.1	16.8	8.9	7.4	6.1
Return on assets	2.7	3.5	1.8	1.4	1.1
Expenses as a share of net interest and commission income	68.0	63.0	62.0	61.0	60.0
Expenses as a share of total assets	2.5	2.5	2.6	2.5	2.3
Net interest and commission income as a share of total income	64.0	58.0	81.0	88.0	93.0
Net interest as a share of total assets	2.7	2.9	3.0	2.9	2.9
Capital ratio	28.5	28.2	27.7	25.0	23.2
Foreign exchange as a share of the capital base	6.1	2.2	-0.5	0.5	0.3
Liquidity coverage ratio (LCR), total	137.4	130.5	163.0	165.9	166.0
Liquidity coverage ratio (LCR), FX	501.8	371	403.8	412.8	509.6
Net stable funding ratio (NSFR), total	104.5	115.4	123.0	122.2	117.9
Net stable funding ratio (NSFR), FX	136.7	136.9	161.8	161.5	159.8

Source: Central Bank of Iceland.

Table 8 Commercial banks' foreign bond issues last 12 months (1 April 2017 - 31 March 2018)

Issuer	Date	Currency	Amount B.kr.	Maturity Years	Premium on interbank rate, <sup>1</sup> %
Arion Bank	November 2018	SEK	6.8	10.0	3.1
	March 2019	EUR	1.8	2.0	0.58
	March 2019	SEK	2.0	3.0	1.33
<b>Total</b>			<b>21.9</b>		
Íslandsbanki	May 2018	SEK	11.9	4.0	0.8
	July 2018	SEK	4.1	3.0	1
	July 2018	SEK	1.2	2.5	1
	August 2018	SEK	2.9	1.5	0.7
	August 2018	SEK	3.5	3.0	1
	August 2018	SEK	5.9	10.0	2.5
	January 2019	NOK	14.2	3.0	
	January 2019	SEK	4.7	1.5	
	January 2019	NOK	5.7	5.0	3.95 fixed
<b>Total</b>			<b>59.7</b>		
Landsbankinn	September 2018	EUR	12.7	10.0	3.125 fixed
	February 2019	NOK	13.9	3.0	1.75
	February 2019	SEK	6.4	3.0	1.75
<b>Total</b>			<b>49.4</b>		

1. Interest premium on three-month interbank rate in the relevant currency unless otherwise specified. 2. Interest premium on six-month EURIBOR.

Source: Nasdaq Iceland.

Table 9 Capital buffers

Capital buffer	FSC recommendation	FME decision	Value %	Applicable from
Systemic risk buffer, D-SIB	22.1.2016	1.3.2016	3	1.4.2016
Systemic risk buffer, other DMBs	22.1.2016	1.3.2016	2	1.1.2018
	13.4.2018	15.5.2018	3	1.1.2020
Capital buffer on systemically important institutions	22.1.2016	1.3.2016	2	1.4.2016
Countercyclical capital buffer	30.9.2016	1.11.2016	1.25	1.11.2017
	13.4.2018	15.5.2018	1.75	15.5.2019
	19.12.2018	1.2.2018	2	1.2.2019
Capital conservation buffer			2.5	1.1.2017

Sources: Financial Supervisory Authority, Ministry of Finance and Economic Affairs.



Table 10 Indicators pertaining to the international investment position

	Unit	2013	2014	2015	2016	2017	2018
Net IIP <sup>1</sup>	% of GDP	-49.7	-41.6	-4.7	2.9	3.5	9.9
External debt <sup>2</sup>	% of GDP	158.6	151.2	116.0	102.0	81.5	79.1
Treasury' FX debt as a share of total debt	%	26.9	27.9	23.0	18.1	12.8	14.9
Commercial banks' foreign-denominated bonds	% of GDP	19.2	16.6	16.9	18.6	19.7	22.6
Current account balance <sup>3</sup>	% of GDP	7.2	5.3	5.7	6.5	3.3	2.6
International reserves	% of GDP	24.9	25.6	28.5	32.8	26.3	26.3
International reserves financed in krónur	% of GDP	-4.0	1.0	13.2	23.8	21.1	21.0
International reserves/RAM	%	74.8	85.9	130.2	178.6	154.9	154.6
Terms of trade	Value	76.5	83.6	84.2	87.4	87.9	83.0
Nominal exchange rate <sup>4</sup>	Value	210.1	206.6	191.5	161.7	162.85	174.07
Real exchange rate <sup>5</sup>	Value	81.19	85.7	93.13	109.8	111.82	101.46
Treasury's highest credit rating	Rating	Baa2/BBB	Baa2/BBB	Baa1/BBB+	A3/A-	A2/A	A2/A

1. Based on underlying IIP until 2015. 2. External debt net excluding equity securities, unit shares, derivatives, and FDI in corporate equity. Excluding old banks. 3. Excluding the effects of the old banks for the entire period. 4. Trade-weighted exchange rate index — narrow trade basket (1%). 5. In terms of relative consumer prices.

Sources: Financial information from DMBs and old banks' holding companies, Statistics Iceland, Central Bank of Iceland.

## Appendix III

### Glossary

Balance on goods	The difference between the value of exported and imported goods.
Balance on income	The difference between revenues and expenses due to primary income and secondary income.
Balance on services	The difference between the value of exported and imported services.
Bill	A debt instrument with a short maturity, generally less than one year.
Bond	A written instrument acknowledging the issuer's unilateral and unconditional obligation to remit a specified monetary payment.
Book value of a loan	The nominal value or outstanding balance of a loan once haircuts or loan loss provisions have been deducted.
Capital base	The sum of Tier 1 and Tier 2 capital after adjusting for deductions; cf. Articles 84-85 of Act no. 161/2002.
Capital buffer	Additional capital required by the Financial Supervisory Authority upon receiving recommendations from the Financial Stability Council. Capital buffers currently in effect are: capital conservation buffer, countercyclical capital buffer, capital buffer for systemically important institutions, and systemic risk buffer.
Calculated return on equity	The profit for a given period as a percentage of average equity over the same period.
Capital ratio	The ratio of the capital base to risk-weighted assets (risk base).
Claim value of a loan	The nominal value or outstanding balance of a loan before deducting discounts or loan loss provisions.
Commercial bank	A financial institution that has been granted an operating licence pursuant to Article 4, Paragraph 1, (1) of the Act on Financial Undertakings, no. 161/2002.
Credit institution (credit undertaking)	A company whose business is to receive deposits or other repayable funds from the public and to grant credit on its own account.
Cross-default nonperforming loans	Based on the cross-default method, all of a given customer's loans are considered to be in default if one loan is 90 days past due, frozen, or deemed unlikely to be repaid.
Current account balance	The sum of the goods, services, and income account balances.
Deposit institutions	Commercial banks and savings banks licenced to accept deposits.
Disposable income	Income net of taxes.
Domestic systemically important banks (D-SIB)	Banks that, due to their size or the nature of their activities, could have a significant impact on the stability of the financial system and the general economy, in the opinion of the Financial Stability Council. Currently, D-SIBs in Iceland are Arion Bank hf., Íslandsbanki hf., and Landsbankinn hf. In addition, the Housing Financing Fund (HFF) is considered a systemically important supervised entity.
Economic outlook index	Corporate expectations concerning economic developments and prospects, based on the Gallup survey carried out among executives from Iceland's 400 largest firms.
Encumbrance ratio	The proportion of a bank's assets that are hypothecated for funding.
Equity	Assets net of liabilities.
Expense ratio	The ratio of operating expense net of the largest irregular items to operating income, excluding loan valuation changes and discontinued operations.

Facility-level default	Based on the facility method, a given customer's loan is considered to be in default if it is past due by 90 days or more.
Financial system	Deposit institutions; miscellaneous credit institutions (including the Housing Financing Fund, HFF); pension funds; insurance companies; mutual, investment, and institutional investment funds; and State credit funds.
Foreign exchange balance	The Central Bank of Iceland sets rules on credit institutions' foreign exchange balance. According to the rules, neither the overall foreign exchange balance nor the open position in individual currencies may be positive or negative by more than 15% of the capital base.
Foreign exchange imbalance	Difference between assets and liabilities in foreign currencies.
Foreign exchange reserves	Foreign assets managed by monetary authorities and considered accessible for direct or indirect funding of an external balance of payments deficit.
Funding rules	The Central Bank of Iceland sets rules on foreign currency funding ratio. The rules are based on the net stable funding ratio (NSFR) developed by the BCBS. The rules are designed to limit the extent to which banks can rely on unstable, short-term foreign funding to finance long-term loans granted in foreign currency. The ratio is subject to a minimum of 100%.
Holding company	A company whose sole objective is to acquire stakes in other companies, administer them, and pay dividends from them without participating directly or indirectly in their operations, albeit with reservations concerning their rights as shareholders.
Indexation imbalance	Difference between indexed assets and indexed liabilities.
Interbank market	A market in which deposit institutions lend money to one another for a period ranging from one day to one year.
International investment position (IIP)	The value of residents' foreign assets and their debt to non-residents. The difference between assets and liabilities is the net international investment position (NIIP), also referred to as the net external position.
Interest burden	Interest payments as a percentage of disposable income.
Interest premium	A premium on a base interest rate such as the interbank rate.
Key Central Bank of Iceland interest rate (policy rate)	The interest rate that is used by the Central Bank in its transactions with credit institutions and is the most important determinant of developments in short-term market interest rates. The interest rate that has the strongest effect on short-term market rates and is therefore considered the Central Bank's key rate may change from time to time.
Liquidity coverage ratio (LCR)	The ratio of high-quality liquid assets to potential net outflows over a 30-day period under stressed conditions; cf. the Rules on Liquidity Coverage Requirements for Credit Institutions no. 266/2017.
Liquidity rules	The Central Bank's liquidity rules are based on the liquidity coverage ratio (LCR) requirements developed by the Basel Committee on Banking Supervision (BCBS) and are largely harmonised with European Union liquidity rules. Credit institutions must always have sufficient high-quality assets to cover potential liquidity needs over the coming 30 days under stressed conditions. The LCR may not fall below 100% for all currencies combined or for all foreign currencies combined.
Loan-to-value (LTV) ratio	A debt as a percentage of the value of the underlying asset (for instance, mortgage debt as a percentage of the value of the underlying real estate).
Net stable funding ratio (NSFR)	The ratio of available stable funding to required stable funding; cf. the Rules on Funding Ratios in Foreign Currencies, no. 1032/2014.
Payment card turnover balance	The difference between foreign nationals' payment card use in Iceland and Icelandic nationals' payment card use abroad.
Real exchange rate	Relative developments in prices or unit labour costs in the home country, on the one hand, and in trading partner countries, on the other, from a specified base year and measured in the same currency. The real exchange rate is generally expressed as an index.

Real wage index	An index showing changes in wages in excess of the price level. It is the ratio of the wage index to the consumer price index (CPI).
Risk-weighted assets	Assets adjusted using risk weights; cf. Article 84(e) of Act no. 161/2002.
Risk-weighted assets (risk base)	The sum of the weighted risks of financial institutions (e.g., credit risk, market risk, operational risk, etc.), cf. Article 84(e) of Act no. 161/2002.
Shadow bank	Definition based on the methodology of the Financial Stability Board (FSB). Shadow banking is defined as credit intermediation involving entities and activities outside the regular banking system. Shadow banks include money market funds, bond funds, equity funds, investment funds, specialized investment companies, securities companies, brokers, specialized funds and other credit institutions. Government operated credit institutions, pension funds, insurance companies and financial auxiliaries are excluded. A detailed discussion on the methodology can be found in the Committee on Shadow Banking's March 2015 report to the Ministry of Finance and Economic Affairs.
Terms of trade	The price of goods and services imports as a percentage of the price of goods and services exports.
The IMF's reserve adequacy metric (RAM)	The reserve adequacy metric (RAM) was developed by the International Monetary Fund (IMF) as a criterion for desirable size of foreign exchange reserves, which can be determined with respect to a number of factors that affect a country's balance of payments and could provide indications of potential capital outflows. The RAM consists of four elements: i. Export revenues: Reflect the risk of contraction in foreign currency accumulation ii. Money holdings: Reflect potential capital flight in connection with liquid assets iii. Foreign short-term liabilities: Reflect the economy's refinancing risk iv. Other foreign debt: Reflects outflows of portfolio assets The RAM is the sum of 30% of current foreign short-term liabilities, 15% of other foreign debt (20% at constant exchange rates), 5% of money holdings (10% at constant exchange rates), and 5% of export revenues (10% at constant exchange rates).
Tier 1 capital base	Common equity after adjusting for deductions (common equity Tier 1, or CET1), plus additional Tier 1 capital.
Trade-weighted exchange rate index (TWI)	The index measuring the average exchange rate in terms of average imports and exports, based on the narrow trade basket.
VIX implied volatility index	The expected volatility of the S&P 500 index according to the pricing of options related to it. It gives an indication of investors' risk appetite or aversion.
Yield	The annualised return that an investor requires on funds invested.
Yield curve	A curve that plots the interest rates, at a set point in time, of bonds with equal credit quality but differing maturity dates.