FINANCIAL STABILITY

2019•2

Contents

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.

Published by:
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Vol. 25 9 October 2019

This is a translation of a document originally written in Icelandic. In case of discrepancy or difference in interpretation, the Icelandic original prevails. Both versions are available at www.cb.is.

ISSN 1670-584X, print
ISSN 1670-8156, online

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 Deputy Governor

Financial institutions highly resilient, but challenges could lie ahead

Near-term developments in the domestic economy are uncertain, both for domestic reasons and because of increased uncertainty about the global GDP growth outlook and developments in global financial markets. According to the Central Bank's forecast, the outlook for Iceland is for a mild economic contraction this year, followed by a recovery in 2020. Setbacks in the tourism industry have affected the economy less than was first assumed, and the direct impact on Iceland's systemically important banks is limited as yet. Economic policy has greater scope to respond than before, and monetary and fiscal policies will continue to work together to mitigate the contraction. Key domestic risk factors centre on the tourism industry and developments in the residential and commercial real estate markets. These two risks are linked to developments in global output growth. The financial system has considerable resilience on which to draw in the event of further shocks.

Although tourist numbers have declined markedly, spending per tourist has risen. There is considerable uncertainty about how airline seat capacity will develop and how global economic developments will affect travel to Iceland. Growth in systemically important banks' lending to tourism companies has eased, but a prolonged contraction in the sector could result in increased default and loan losses.

There is a connection between the state of the tourism sector and risk levels in the residential and commercial real estate markets. The contraction in tourism, in combination with other factors, has contributed to a marked slowdown in house price inflation. There are also signs that market turnover has slowed and the average time-to-sale has grown longer, while the supply of available housing has increased. Concurrent with the surge in new construction, short-term rentals to tourists have been on the decline in the capital area. This could result in an oversupply of housing and a decline in nominal prices. This, in turn, poses risks to the financial system. Credit institutions must be prepared for sluggish sales of newly constructed properties, rising loan-to-value ratios on mortgages, and increased losses on housing loans.

In its annual stress test, the Central Bank assesses the banking system's capacity to withstand strong economic shocks. The Bank's simulated stress scenario, which is described in this report, provides for a sharp contraction in exports, rising financing costs for domestic entities, and a steep drop in asset prices. Furthermore, unemployment will rise and GDP will contract by a total of 6% in the first two years of the stress scenario. For the purposes of the stress test, the initial position is based on the banks' annual accounts as of end-2018. The results of the stress test indicate that the banks' capital ratios would decline by 4.3 percentage points due to the shocks, and the Tier 1 capital ratio will bottom out at 16.9% in the second year. Although the banks have relatively high capital ratios, they would nevertheless need to tap their capital buffers, whose purpose is to enable them to absorb losses due to major setbacks. It should be noted that the stress scenario is a simulated example and does not cover all possible shocks, such as contagion and changes in sentiment. As a result, the impact of the stress scenario on the banks could therefore be underestimated, particularly in the short run.

The banks' capital position is above the minimum required by the Financial Supervisory Authority. However, after adjusting for the increase in the countercyclical capital buffer, to take effect in February 2020, and the so-called management buffer set by the banks themselves, the scope for further declines in their capital ratios is extremely limited. The banks have also changed their capital structure in recent years by issuing subordinated bonds classifiable as Tier 2 capital, but they have limited scope for further issuance of this kind. They do have the option to issue comparable bonds classifiable as Tier 1 capital, but such issues have not yet been considered feasible. The banks scope for further dividend payments beyond their profits in the near future is therefore limited, unless they change the size and composition of their balance sheets.

The banks' liquidity position is above Central Bank requirements and, in foreign currencies, is quite ample. This year, loan value adjustments have been the strongest factor underlying year-on-year changes in the banks' operating performance. The outlook is for value adjustments to have a strong negative impact this year, whereas they have had a positive effect in recent years. It is still somewhat uncertain how this year's setbacks will affect impairment. Lower interest rates could also affect the outlook for the banks' operations. In order to pass changes in Central Bank interest rates on to their customers, they could find it necessary to narrow their interest spreads, as rates on sight deposits are close to zero, leaving little room to pass further rate cuts through on the liabilities side. Other things being equal, narrower interest rate spreads will cut into their profits and returns.

Some of the increased risk in the financial system has already materialised. Domestic authorities have greater latitude to respond to risks than many other countries do, owing to Iceland's higher interest rates, ample international reserves, fiscal surplus, and low public sector debt. The financial system and the private sector are highly resilient as well. Under current circumstances, it is therefore unlikely that the recent setbacks will destabilise the financial system in the near term, provided that the global economic outlook does not deteriorate substantially and assuming that financial institutions retain their resilience. Icelandic financial institutions' resilience against cyclical risks has been bolstered in recent years through capital buffer requirements. The February 2020 increase in the countercyclical capital buffer is an element in shoring up that resilience. If impairment should become significant enough to affect financial institutions' lending capacity and capital position, it will be possible to respond by lowering the countercyclical capital buffer.

Rannveig Sigurðardóttir

I Key risks

Economic uncertainty has increased in recent months, both in Iceland and abroad. The global economic outlook has deteriorated, and forecasts assume that domestic output growth will be negligible or slightly negative in 2019. Although the economic outlook has deteriorated, the financial cycle is still in a slow-paced upward phase, albeit from a low position. Key domestic risk factors centre on the tourism industry and the residential and commercial real estate markets. Tourism is now contracting after several years of phenomenal growth. As yet, the risks that accumulated during that growth phase have materialised only to a small degree. If the contraction in the sector continues over the months to come, it is likely to result in increased default and loan losses in the financial system. In the capital area, the supply of residential housing has grown substantially in the recent term, and forecasts indicate that a large number of new flats will be put on the market in the next three years. At the same time, growth in Bank lending to the construction sector remains strong. However, newly constructed properties have been selling more slowly than before, particularly in the Reykjavík city centrum. A glut of residential housing could therefore develop in the next several months, at least in certain areas. Commercial real estate (CRE) prices have risen rapidly in recent years, as demand has outpaced supply. Unlike the pattern seen with other types of commercial property, both supply and demand for hotels and other types of guest accommodation have surged in the past few years. The outlook is for supply to keep growing, with projections indicating that guest accommodation in greater Reykjavík will increase by as much as one-fourth in the next three years. Demand for tourism services will have to increase significantly in coming years if a glut in tourist housing is to be avoided. Offsetting these risks, private sector balance sheets are strong at present. Financial institutions are resilient as well, although the three large commercial banks' capital ratios have been approaching the regulatory minimum in the recent term.

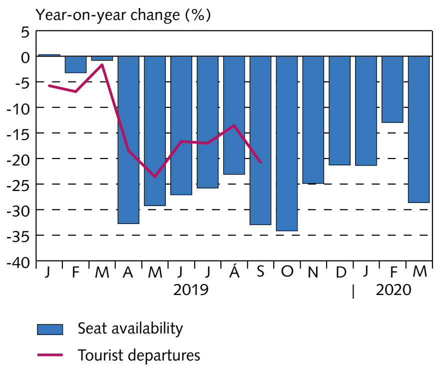
Table 1 Key risks

	2019/2
Tourism	
Residential property	
Commercial property – hotels and guesthouses	
Commercial property — other	

Tourism

Tourist numbers fall in response to reduced airline seat capacity …
Foreign tourist numbers have declined substantially in 2019 to date, in the wake of a strong contraction in available flights to and from Iceland. Most of the downturn is attributable to the collapse of WOW Air, although the grounding of Icelandair's Boeing Max jets has also cut into seat capacity. Foreign nationals' departures via Keflavík Airport were down more than 14% year-on-year in the first nine months of the year, as seat offerings contracted by nearly 22% over the same period. During the period since end-March, when WOW collapsed, the contraction has been larger, with foreign nationals' departures down by less than 18% and seat capacity down 28%. The number of transit passengers travelling through Keflavík is down by nearly half since WOW failed. The share of arriving and departing passengers has therefore risen sharply, due in some measure to a change in focus by Icelandair in recent months.

Chart I-1
Tourist departures and flight seat availability via Keflavik Airport[1]



1. Seat availability numbers are based on Isavia's schedules.
Sources: Icelandic Tourist Board, Isavia.

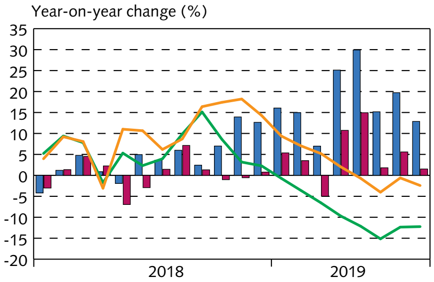
With the global grounding of the Boeing Max jets, Icelandair's seat capacity increased less than previously planned. The airline assumed that it would use nine Max jets this year, plus an additional five next year. In response to the grounding, Icelandair leased five jets over the peak summer season. Use of the last leased jet will be discontinued at the end of October. The future of the Max jets is highly uncertain, but Icelandair does not assume they will be available for use until next year. Isavia's winter flight schedule assumes that seat capacity will contract in Q4/2019 by 27%, about the same as in Q2 and Q3. In recent months, several parties have explored the possibility of establishing a new international airline in Iceland, but the future of those enquiries is highly uncertain.

… but spending per tourist is up

Despite the downturn in tourist numbers, foreign payment card turnover in Iceland has remained virtually unchanged year-to-date. In fact, aggregate card turnover for the first eight months of the year was 0.8% higher than in the same period of 2018. At constant exchange rates, however, turnover contracted by just over 13%. Over the period from April through August, after WOW Air collapsed, card turnover shrank by 1.5%, and by 17.2% at constant exchange rates. Over the same period, average card turnover per tourist rose by 20.5% year-on-year in krónur terms, and by 6.9% at constant exchange rates. There are probably several reasons for this, including longer stays and fewer self-connecting passengers[1] travelling through Keflavík. This reduces the distortion in tourist number measurements.[2] The króna depreciated in autumn 2018, and the real exchange rate in terms of relative consumer prices has been about 10% lower, on average, in 2019 than in 2018. A lower real exchange rate boosts the competitiveness of the tourism sector, as prices in Iceland were among the highest in the world in 2018. According to a new report from the World Economic Forum, Iceland ranks third-lowest, or 138th in a field of 140 countries, in terms of price competitiveness in the tourism sector.[3]

Chart I-2

Turnover of foreign debet and credit cards in Iceland[1]



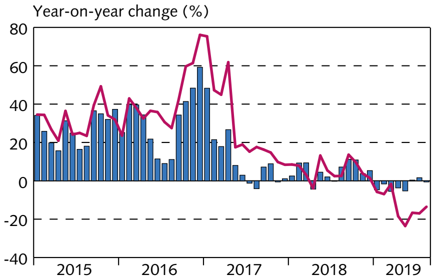
1. Turnover of foreign debet and credit cards excluding aviation.
Sources: Centre for Retail Studies, Icelandic Tourist Board, Central Bank of Iceland.

Large-scale hotel and guesthouse construction still underway

Hotel bed-nights have declined less steeply than tourist arrivals. Bed-nights at hotels and guesthouses were down by just under 2% year-on-year in the first eight months of 2019, partly because the average length of stay has increased. The downturn in tourist arrivals is attributable in large part to a reduction in visitors from North America, whose average stay in Iceland is shorter than that of other tourists, particularly during the summer.[4] The impact of reduced tourist numbers on the number of bed-nights is therefore less pronounced than it

Chart I-3

Tourist departures and bed-nights in hotels and guesthouses



Sources: Icelandic Tourist Board, Statistics Iceland.

1. Self-connecting passengers are those who arrive in Iceland with one airline, claim their baggage themselves, and then board a departing flight with another airline that same day.
2. According to a survey conducted by the Icelandic Tourist Board, 12.3% of departing passengers in Q3/2018 were self-connecting passengers or transit passengers who did not stay overnight in Iceland. The survey results indicate that the share of self-connecting passengers is higher during the summer months than at other times of the year.
3. World Economic Forum (2019). The Travel & Tourism Competitiveness Report 2019. http://www3.weforum.org/docs/WEF_TTCR_2019.pdf.
4. Icelandic Tourist Board (2019). *Foreign Tourists in Iceland 2018*: *Demographics, travel behaviour, and outlook* (*Erlendir ferðamenn á Íslandi 2018:* Lýðfræði, ferðahegðun og viðhorf).

would be otherwise be. In addition, the greatest contraction appears to be in cheaper forms of accommodation, homestays, and camper vans, as monitoring of unlisted homestays was tightened last year.

The supply of accommodation continues to increase, and a large number of hotels and guesthouses are still under construction, as is further discussed in the section on commercial real estate. An increased supply of accommodation concurrent with a decreased supply of tourists has led to a decline in hotel occupancy rates – a trend that will probably continue. However, occupancy rates will also be affected by substitutability between hotels and unlisted accommodation. That said, occupancy rates in Iceland are still high in international context.

A changed operating environment in the tourism sector

Growth in bank lending to the tourism industry continues to lose pace, measuring 8% in Q2/2019, down from 18% a year earlier. The year-on-year increase is mostly to a shift in financing to the banks and not to lending for new projects. As a share of total bank lending to customers, lending to tourism companies has remained steady at around 9% since mid-2017. Write-downs of loans to firms in the sector have increased marginally this year but are still negligible. However, the number of tourism companies on the default register has risen by nearly 15% in the past twelve months. Although the increase is due in part to an increase in the number of companies in the sector, the percentage of tourism companies in default has risen as well. At the end of August, that percentage stood at 15%, up from just over 13% a year earlier.

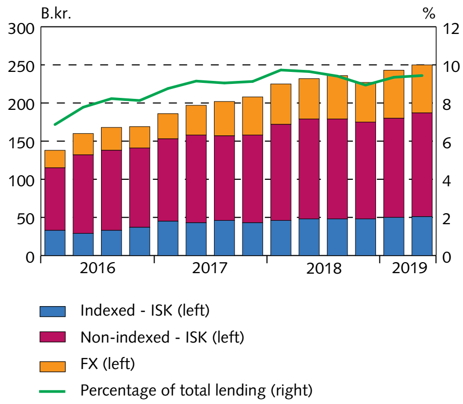
In the past several years, tourism has established itself as Iceland's largest export sector. Growth in tourism is closely connected to other sectors, such as trade and services. For the first time in a long while, tourism is suffering a contraction in the wake of a surge dating back to 2010. The coming winter could easily prove difficult for the tourism industry, and arrears could increase. The continuing decline in seat capacity, the reduced number of Google searches, and the worsening economic environment in the euro area and the UK could indicate that the contraction in the sector will continue, at least for the short term. The Icelandic tourism industry is in competition with tourist destinations abroad, but because the sector is labour-intensive, domestic wage hikes have eroded its competitive position. In recent months, tourism companies have responded to a changed environment by streamlining their operations, including laying off staff. Operating difficulties have prompted tourism companies to merge and have led to increased concentration in the banks' loan portfolios, which could exacerbate counterparty risk. The banks must prepare themselves for a continuing contraction in tourism and for growing counterparty risk, which could result in increased arrears and loan losses.

Residential property market

House prices are holding steady ...

In the past year, real house prices in the greater Reykjavík area have been broadly unchanged, and in June and July they fell for the first time since 2012. In August, real condominium prices had risen by 0.4% between years, while real single-family home prices stood still.

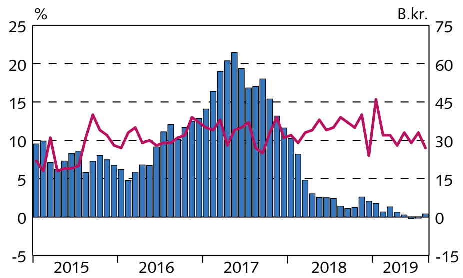
Chart I-4
D-SIB lending to the tourism industry



Source: Central Bank of Iceland.

Chart I-5

Y-o-y change in real house prices and turnover in real estates in capital area[1]



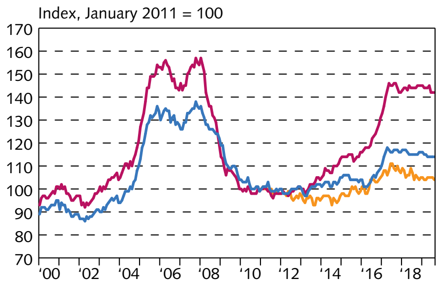
Real house price growth (left)

Turnover in real estate (right)

1. Real estate turnover, at constant August 2019 prices.
Sources: Statistics Iceland, Registers Iceland.

Chart I-6

House prices in the greater Reykjavík area and determining factors



House price index / Wage index

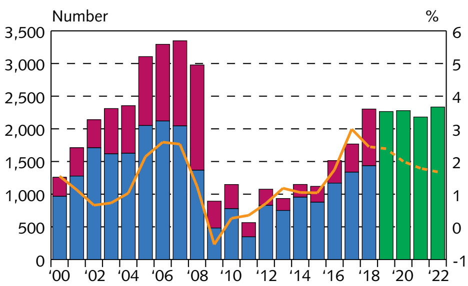
House price index / Building cost index

House price index / Rent price index

Sources: Statistics Iceland, Registers Iceland.

Chart I-7

New construction and population growth[1]



New dwellings - Capital City area (left)

New dwellings - Outside Capital City area (left)

Industries Federation forecast, Capital city area (left)

Population growth (right)

Statistics Iceland forecast (right)

1. Estimates for population growth in 2019-2022 from Statistics Iceland.
Sources: Federation of Icelandic Industries, Statistics Iceland

Property prices outside the capital area rose by 0.1% year-on-year in real terms. Prices outside greater Reykjavík appear to track those in the capital, albeit with a lag.

In the first eight months of 2019, capital area housing market turnover was down year-on-year by only a slight margin in real terms. Over the period from April through August 2019, turnover contracted in real terms by 17% between years. The contraction was roughly the same for condominium housing and single-family homes. However, the number of flats for sale surged between years, or by 38% as of end-August. Housing market turnover in greater Reykjavík has therefore declined at a time when supply is increasing.

In 2016 and 2017, capital area house prices rose faster than both wages and rent, and much faster than construction costs. This situation has reversed. As of end-August, the general wage index had risen by 4.3% in twelve months, the rent price index by 3.7%, and the building cost index by 4.6%, whereas the real estate price index had risen 3.6%.

… but supply is increasing

The number of new properties in the capital area has soared in recent years. Residential investment was unusually weak during the aftermath of the financial crisis, contributing to a housing shortage when demand picked up again. According to the forecast from the Federation of Icelandic Industries, nearly 2,300 new homes per year are expected on the market over the next three years, up from 1,300 per year in the past three years. If this forecast materialises, supply of new flats will be much stronger in coming years than during the pre-crisis boom. In 2006-2008, for instance, 2,100 newly built properties were put on the market each year. Concurrent with the surge in new construction, short-term rentals in greater Reykjavík have been on the decline. As a result, flats formerly used for short-term rental should eventually be put up for sale or long-term rental. It can therefore be assumed that the supply of residential housing in the capital area will rise markedly in the coming term. However, the number of foreign construction workers in Iceland appears to have peaked, and cement sales have begun to ease. This could indicate that residential construction activity will slow down in the next few years.

The number of purchase agreements in greater Reykjavík fell by 12% year-on-year in the first eight months of 2019. Purchase agreements for new construction declined by even more, or 26%.[5] Data on newly constructed properties on the market and purchase agreements for newly built homes suggest that sales of new flats are sluggish in the city centrum.In the past three years, about 70-90% of newly built flats that have been put on the market in zones outside the city centrum have been sold, as opposed to only about a fourth of new properties in central Reykjavík. Weak sales in the city centrum could indicate that lower prices are in the offing.[6]

5. Based on the number of contracts, by date of purchase. In terms of contract registration date, the number of purchase agreements fell by 8% in the first eight months of 2019, and purchase agreements for newly built properties fell by 12%.

6. This refers to Zone 20 as defined by Registers Iceland. The boundaries of Zone 20 are Lækjargata, Sæbraut, Snorrabraut, and Hringbraut.

In recent years, the construction sector's debt to the banks has increased to approximately 168 b.kr., or just over 6% of loans to bank customers, as of end-August. Presumably, a sizeable share of that debt is for construction of residential property. Real growth in domestic systemically important banks' lending to the construction industry has been consistently over 10% since 2016. At the end of August, it measured 16%, up from just over 15% at the end of 2018.

Lending requirements have tightened, but interest rates are down
Individuals' housing wealth has increased rapidly in recent years, fuelled by rising house prices. Mortgage lending rates have also fallen, which has encouraged borrowers to refinance. In the past several months, however, lending requirements have tightened. The largest pension funds have lowered maximum loan-to-value (LTV) ratios for residential mortgages from 75% to 70%, and one of them has recently tightened lending requirements and lowered the ceiling on loans to fund members. Over the same period, the banks have tightened lending requirements by shortening indexed loan maturities and limiting hypothecation for refinancing. In addition, official property values fell in some zones between the 2019 and 2020 valuation years, potentially affecting borrowers' refinancing options. As yet, however, this trend has had little impact on net new mortgage lending. Over the first seven months of 2019, the monetary amount of new mortgages was only slightly lower than for the same period in 2018. At the end of July 2019, year-on-year growth in households' mortgage debt measured 5.8% in real terms, as compared with 5.5% a year earlier.

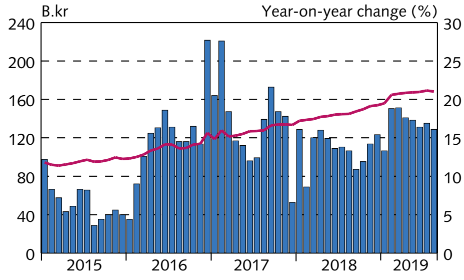
Forecasts suggest that disposable income and private consumption will grow more slowly in the coming term than they have in recent years. Tourist numbers are down, as are short-term private rentals, and population growth is expected to ease in the next few years. These factors, together with a surge in new construction, could lead to a glut of housing and push prices downwards. If so, leverage ratios could rise, as could the probability of loan losses. Furthermore, weaker growth in demand could prove difficult for some construction companies.

Commercial real estate market

Prices still on the rise
CRE prices in greater Reykjavík have continued to climb in recent months. At the end of Q2, the CRE price index had risen nearly 15% year-on-year in real terms, keeping pace with the average seen over the last five-and-a-half years. The index is now well above its long-term trend level and has risen steeply relative to related economic indicators, such as GDP, construction costs, and the gross operating surplus per square metre of property. In recent years, price hikes have been driven by soaring demand; i.e., due to rising corporate revenues and increased numbers of employers and jobs. There are indications that the past few months' growth in demand was driven increasingly by falling interest rates.

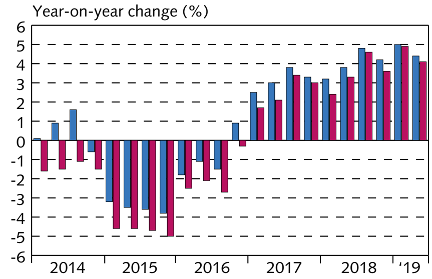
In H1/2019, market turnover according to registered commercial property transactions was down 5% year-on-year in real

Chart I-8
Construction sector
Debt to D-SIB[1]



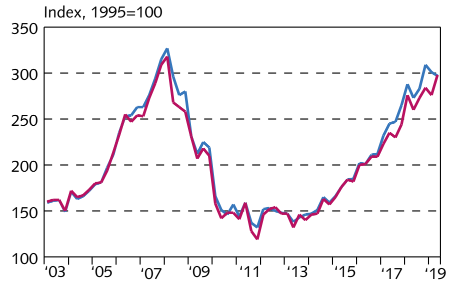
1. Debt of construction sector to D-SIB in real terms at June 2019 prices.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-9
Real growth of household debt[1]



1. Yearly change in household debt, deflated with the CPI.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-10
Real commercial property prices in greater Reykjavík[1]

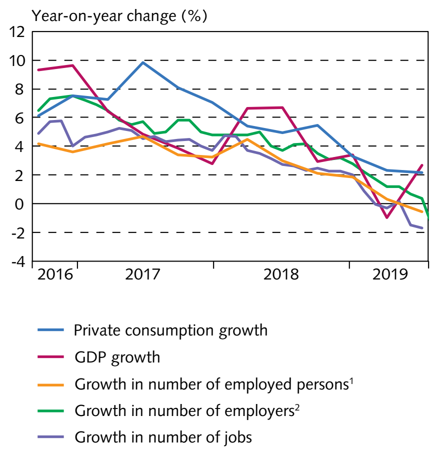


1. Commercial real estate prices in registered transactions, deflated with the CPI. The index that uses constant weights has previously been published in *Financial Stability* and *Economic Indicators*, but the other has not. The other uses moving weights based on turnover in transactions over the last eight quarters.
Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

terms. Turnover has softened slightly in the past two years. Leading indicators also imply that the drivers of CRE market demand have lost momentum. Jobs, employed persons, and employers began to decline in number during the summer, and growth in both private consumption and GDP has slowed. At the same time, supply has been gradually rising. In terms of square metres, commercial property in construction stages 1-6 increased by 5% over the first eight months of the year. In greater Reykjavík, the increase measured 12% after Iceland Property Registry figures had been adjusted for the effects of the construction of the new national hospital. Growth in the amount of commercial property under construction therefore appears broadly the same as in 2018. Based on the volume of fully finished commercial property in the first eight months of 2019 (according to Iceland Property Registry figures), the CRE stock in the capital area can be expected to grow by nearly 1.5 percentage points over the course of this year. This is considered modest but is nevertheless above the recent average. The growth rate will probably be slower in regional Iceland.

Chart I-11

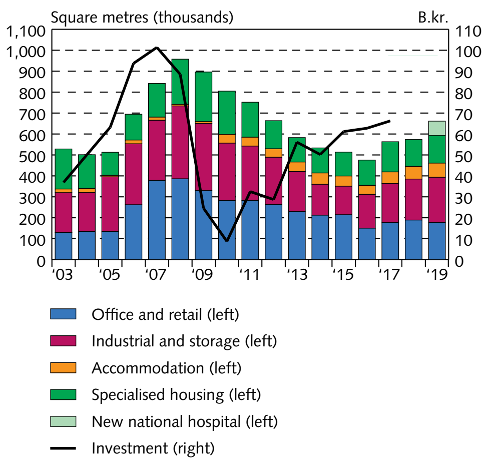
Measures of growth in demand for commercial property



1. All those on the PAYE register during the month. 2. The business economy, i.e. employers in NACE-categories 03-82 and 95-96.
Source: Statistics Iceland.

Chart I-12

Commercial property under construction[1] and investment in commercial property[2]



1. The whole country, year-end figures, except for 2019 which indicates the position as of September 3rd. 2. Business investment segregated with respect to commercial real estate.
Sources: Registers Iceland, Statistics Iceland.

Strong growth in hotel and guesthouse supply

The outlook is for the supply of guest accommodation to rise much more than the supply of other commercial property in the next several years. An estimated 1,400 new hotel rooms will become available in the capital area in the next three years. This increase, which measures about one-fourth, is particularly large because, in terms of square metres, the supply of capital area accommodation has already grown by 81% in the past nine years. Aggregate growth in other CRE categories totalled only 5-11 percentage points over the same period. Two factors reduce the likelihood of a near-term glut of guest accommodation, however: on the one hand, hotel occupancy rates remain high in international comparison, and on the other, homestay accommodation offerings have contracted, which tends to shunt demand over to hotel space.[7] In the long run, though, demand for tourism services must increase substantially if a glut of tourist accommodation in the capital area is to be avoided.

Large real estate firms have grown substantially

The three large real estate firms that are listed on the Nasdaq Iceland exchange and specialise in CRE operations have strong balance sheets and have consistently operated at a profit over the last six years. Their asset portfolios have expanded rapidly over this period. Their combined balance sheet has more than trebled in size in the past decade, through property purchases, property development, and positive asset value adjustments. This rapid growth inevitably brings with it increased risk and greater concentration of risk. At the end of June, the companies' total liabilities – i.e., market financing and bank loans – totalled 273 b.kr. Their combined equity ratio was 31%, and their

7. Central Bank estimates suggest that the number of flats rented through Airbnb has fallen by as much as 18% in 2019 to date. The methods used for the estimates are described in Elíasson & Ragnarsson (2018), Short-term renting of residential apartments: Effects of Airbnb in the Icelandic housing market. *Working Paper* no. 76. Central Bank of Iceland.

leverage ratio was 72%.[8] Their equity ratio has fallen somewhat, and their leverage ratio has risen in recent years. The yield on investment properties has been on the decline but is more or less in line with the decline in the risk-free rate of return in the market. As a result, the risk premium has remained relatively stable at around four percentage points over the past six years, but has risen slightly in the recent term.

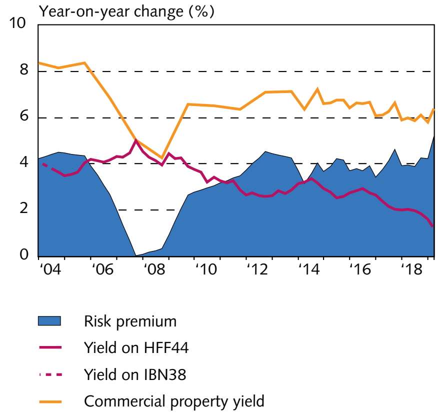
An important market for the banks

At the end of August, the three large commercial banks' total lending to real estate firms amounted to 362 b.kr., or just under 14% of their total stock of customer loans. Loans to real estate firms have grown rapidly in recent years, but the pace started to slow noticeably by the end of 2018. As is mentioned in the section above on residential property, the banks' loans to the construction sector amounted to 168 b.kr., or 6% of the total stock of customer loans, at the end of August. A large share of those loans are for residential property construction. Growth in lending to the construction industry was much stronger than to real estate firms, or about 16% year-on-year in real terms as of end-August. The banks' loans to real estate and construction firms combined therefore accounted for roughly 20% of their customer loans at that time. Therefore, the banks rely heavily on stability and favourable price developments in the market. Previous surveys done by the Central Bank have shown that LTV ratios for CRE-backed bank loans have been falling as a result of the protracted rise in CRE prices. Dwindling demand growth and rising supply indicate, however, that CRE rent prices could stagnate or even fall in the coming term, possibly pushing selling prices for commercial property downwards.

CRE market entities and lenders must be prepared for the longstanding rise in prices to come to an end – sooner rather than later. There is some risk of a glut of supply, with the associated falling prices, but as yet, this risk is limited primarily to hotels and guesthouses.

Chart I-13

Yield on commercial property[1]



1.Yield (i.e. initial yield, NOI-yield, cap rate) is calculated as annualised net rental income divided by the average book value of the investment assets over the accounting period. When rental income is not available, operating income is used instead.
Sources: Real estate companies' annual and interim accounts, Government Debt Management, Central Bank of Iceland.

8. In this context, the leverage ratio refers to total liabilities net of subordinated loans, divided by the book value of investment assets according to published financial statements.

II Financial institutions' operating environment

Domestic economic activity has slowed markedly in recent months, and the outlook is for negligible or even slightly negative GDP growth in 2019. Growth is expected to resume next year, however. The current account surplus has grown between years, and a lower nominal exchange rate has mitigated the adverse impact of reduced tourist numbers on the domestic economy. Globally, the GDP growth outlook has deteriorated and uncertainty has escalated. Some contagion can be expected in Iceland, especially if the uncertainty drags on. Households and businesses have not escaped the effects of the poorer economic outlook. Unemployment has risen, private consumption growth has slowed, and corporate debt growth has eased considerably in the past several months. Default on banking system loans has not risen to a significant degree, but the number of firms on the default register has increased, particularly in the tourism and construction sectors. The coming months will pose a challenge to private sector resilience.

Macroeconomic environment and financial markets

GDP growth slows markedly between years

After an eight-year growth phase, the outlook for 2019 is for negligible output growth or even a slight contraction. Both the collapse of WOW Air in the spring and difficulties facing other airlines have caused a significant drop in tourist arrivals, and last winter's capelin fishing season failed entirely. Even so, the contraction in marine product exports is expected to be smaller than previously thought, as pelagic catch quotas have been increased and marine product prices have risen more than previously assumed. Private consumption growth also appears more resilient than the first forecasts had indicated, and consumption spending has shifted increasingly to domestic production. According to the Bank's most recent macroeconomic forecast, published in *Monetary Bulletin* 2019/3, GDP growth is projected to pick up as soon as next year.

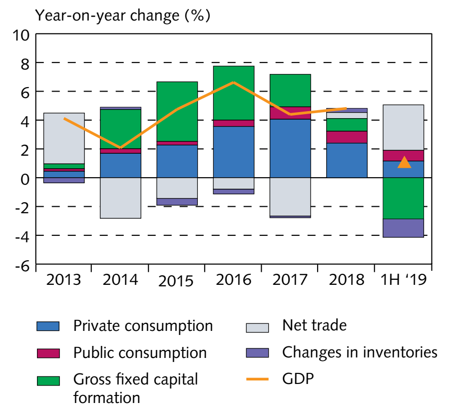
Inflation has been above the Bank's 2.5% inflation target since autumn 2018, when it started to rise after the króna depreciated. It peaked in December at 3.7% but has tapered off since then, measuring 3% in September. In recent months, short- and long-term inflation expectations have fallen by most measures.

Treasury debt amounted to 30.3% of GDP at the end of June, after rising marginally since the turn of the year. This uptick is due to the issuance of a eurobond in June, as is discussed further in the section on Iceland's net international investment position. Net Treasury debt – i.e., net of relending and deposits with the Central Bank – amounted to just over 20% of GDP at that time.

The spread between Icelandic Treasury eurobonds and comparable German bonds held broadly unchanged in the first nine months of 2019. The CDS spread on Treasury issues has also been more or less unchanged year-to-date. In May, Fitch Ratings upgraded Iceland's

Chart II-1

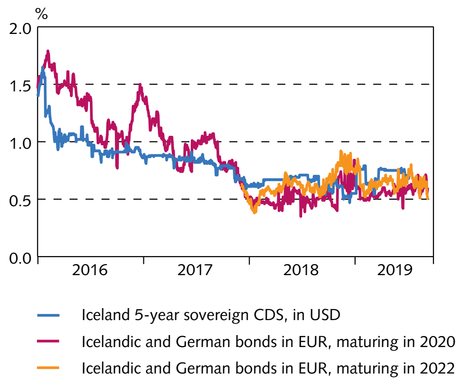
Output growth[1]



1. Contribution of individual components to output growth. The 1H 2019 figure represents GDP growth in the first six months of 2019 compared with the first six months of 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-2

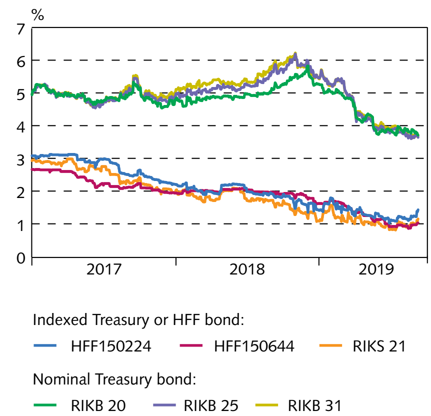
Government bond spreads



Sources: Bloomberg, Thomson Reuters.

Chart II-3

Treasury bond yields



Source: Nasdaq Iceland.

short-term sovereign credit rating to F1+ and affirmed the long-term rating of A, with a stable outlook.[1]

The breakeven inflation rate in the bond market has fallen

The Central Bank's key interest rate has been lowered this year by a total of 1.25 percentage point in four increments, to the current 3.25%. Bond market yields have fallen accordingly. Nominal bond yields have fallen more than indexed yields have, and the breakeven inflation rate in the bond market has therefore fallen as well. This may well be the result of lower inflation expectations plus the Bank's March 2019 decision to lower the special reserve requirement (SRR) to 0%. Yields on short and long bonds have fallen by similar amounts, and the yield curve has therefore remained relatively flat.

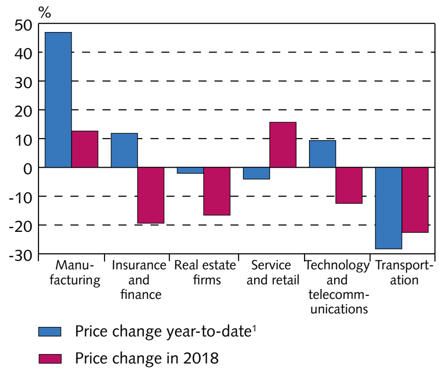
Share price hikes have eased

Most companies listed on the Nasdaq Iceland exchange have seen their share prices rise year-to-date. Prices soared early in the year but have settled down a bit since. Over the first four months of 2019, the market capitalization weighted price increase for all listed companies was 22%, but since then the market has virtually stood still. The OMXI10 index took the place of the OMXI8 in early July. The OMXI10 includes all eight companies in the previous index, plus two insurance companies: VÍS and Sjóvá. The largest company in the index by far is Marel, which was also admitted for trading on the Euronext exchange in Amsterdam in June. Marel accounts for 53% of the total market capitalisation of the OMXI10. The index rose by 29.4% in the first nine months of the year, whereas without Marel it would have fallen by nearly 4%. Developments in the OMXI10 are therefore heavily reliant on Marel share prices.

At the end of September 2019, the market capitalisation of companies listed on the stock exchange totalled 1,081 b.kr., an increase of 20.6% since the beginning of the year. Equity market turnover rose by 21% year-on-year in the first nine months of 2019. Direct pledges in the Icelandic equity market totalled 17% as of end-August, an increase of 4.7 percentage points between years.[2] The pension funds hold about 41% 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 amounted to 31.5%, an increase of nearly 8 percentage points year-to-date.[3]

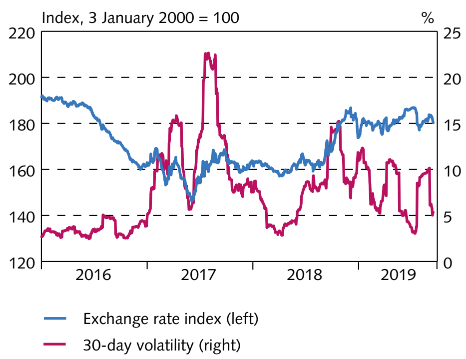
Foreign index providers have shown increased interest in the Icelandic stock market in the recent past. In September, all of Iceland's

Chart II-4
Developments in share prices, listed companies, by sector



1. Through end-September 2019.
Source: Kodiak Pro.

Chart II-5
Exchange rate of the króna[1]



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

1. For further explanation of the credit ratings issued by Moody's, Fitch, and S&P, see the Central Bank website (https://www.cb.is/about-the-bank/government-debt-management/the-republic-of-icelands-sovereign-credit-rating/) and the Government Debt Management website (http://www.lanamal.is/EN/investors/credit-rating/nanar/9814/fitch-ratings-upgrades-icelands-st-ratings-to-f1-affirms-lt-ratings-at-a-stable).
2. At the end of August, the market value of pledged shares in Nasdaq CDS Iceland systems was 173.4 b.kr.
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. Therefore, pledging in the Icelandic equity market is probably higher.

main market companies that satisfied certain minimum requirements were included in FTSE Russell's frontier market index.[4] Furthermore, index provider MSCI has the Icelandic market on its watch list. The company is waiting for the results of a consultation process on the possibility that the Icelandic companies will be added to its index. The consultation results will be available in November. If they are positive, listed Icelandic companies will be eligible for the MSCI index in May 2020. The FTSE and MSCI indices are well capitalised, and if Icelandic companies are eligible for inclusion in them, it will give them greater visibility among foreign investors.

Reduced exchange rate volatility

In autumn 2018, the króna depreciated in nominal terms by nearly 10% and volatility increased, partly in response to news of WOW Air's financing woes. The economic outlook deteriorated thereafter, at a time of considerable uncertainty about outstanding wage negotiations. In H1/2019, however, the króna was relatively stable. There was limited trading in the foreign exchange market in the first half of the summer. After rising in July, the exchange rate fell somewhat and then rose once more in September. By the end of September, the trade weighted exchange rate index was 2.4% lower than at the turn of the year. Thus far in 2019, the Central Bank has intervened in the market twelve times, selling foreign currency ten times and buying it twice.

The real exchange rate in terms of relative consumer prices was down 8.5% year-on-year at the end of August. The decline was due mainly to the nominal depreciation of the króna in H2/2018. In H1/2019, terms of trade improved by 1.4% after having deteriorated uninterrupted since mid-2017. The improvement is due primarily to favourable developments in marine product prices and falling oil prices. On 16 September, however, Brent crude prices rose by as much as 20% after the attacks on Saudi Arabian oil processing facilities. About half of the increase reversed quickly, though, and by end-September Brent crude was selling at 60.8 US dollars per barrel, an increase of just under 11% year-to-date. A lasting increase in oil prices could affect Iceland's terms of trade and inflation rate.

Increased uncertainty and pessimism about the global economy

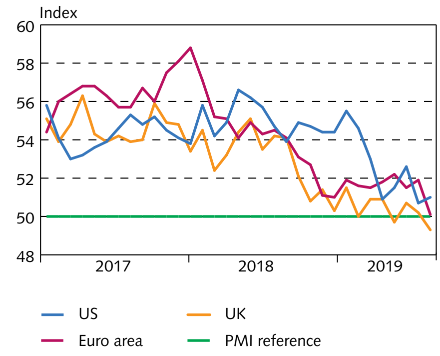
GDP growth among Iceland's main trading partners measured 1.6% in Q2/2019, the weakest growth rate in over three years. In particular, growth softened in the US, the UK, Sweden, and the eurozone. The global economic outlook has deteriorated and pessimism has been on the rise, in part because of increased uncertainty. The trade dispute between the US and China has heated up in the recent term. There is growing unrest in the Middle East – particularly in interactions between Iran, Saudi Arabia, and the US – and the UK's exit from the European Union is still up in the air. All of these factors have a nega-

4. All of the companies in the main market except Heimavellir were included in FTSE Russell's frontier index series. The companies that met the requirements are as follows, together with their size category: large companies –Marel, Arion Bank; medium-sized companies – Brim, Reitir, Icelandair, Hagar, Festi, Síminn, Reginn, Eimskip, and Eik; small companies – Sjóvá, VÍS, TM, Kvika, Skeljungur, Origo, and Sýn.

Chart II-6

Composite purchasing managers' index[1]

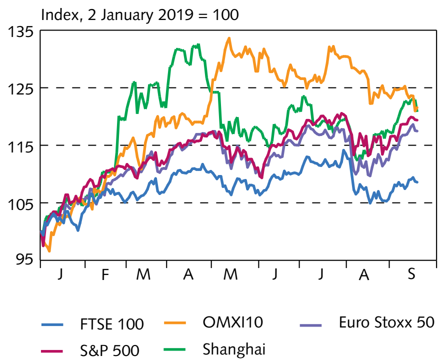
January 2017 - September 2019



1. Markit composite purchasing managers' index. The index is published monthly and is seasonally adjusted. An index value above 50 indicates month-on-month growth, and a value below 50 indicates a contraction.
Source: Thomson Reuters.

Chart II-7

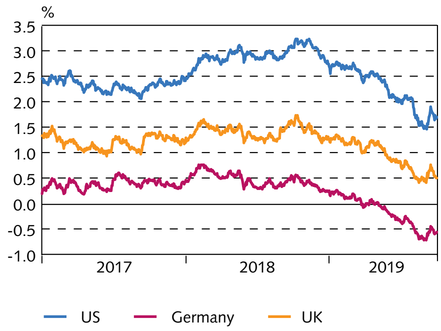
Share price indices



Source: Thomson Reuters.

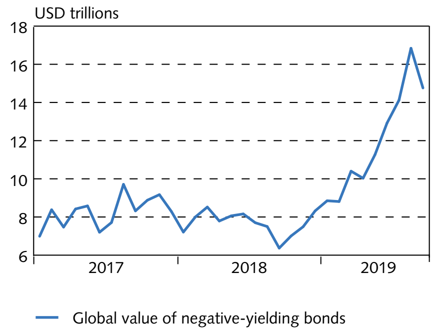
Chart II-8

Yields on 10-year treasury bonds



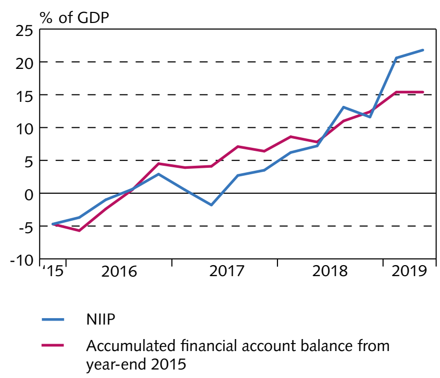
Source: Thomson Reuters.

Chart II-9
Global value of negative-yielding bonds
January 2017 - September 2019



Source: Bloomberg.

Chart II-10
Net IIP



Sources: Statistics Iceland, Central Bank of Iceland.

tive impact on investment and weaken the global output growth outlook. To the extent that this downbeat sentiment spreads to Iceland, it could cut into demand for Icelandic exports, especially tourism.

Global economic uncertainty and concerns about potential cooling in the global economy have affected foreign capital markets. Towards the end of 2018, risk premia were reassessed because of investors' concerns about global economic cooling. Afterwards, share prices tumbled, volatility spiked, and the spread between speculative-grade and investment-grade bond yields widened. At the beginning of 2019, share prices recovered, and in the summer, after the US Federal Reserve lowered interest rates, both the Dow Jones and the S&P 500 hit record highs. In the past few months, the China-US trade dispute has escalated, shaking the markets. Investors have divested themselves from riskier assets such as equities and fled to safer assets. This caused a surge in share price volatility and a spike in the VIX implied volatility index, which measures the volatility of the S&P 500. Increased demand for safe assets has driven yields on highly rated bonds downwards. The global stock of negative-yielding bonds is at a historical high, reaching 17 trillion US dollars at the end of August. The deteriorating outlook also caused the entire German government bond yield curve to turn negative this summer. In addition, yield curves in a number of markets – including the US, the UK, and Germany – inverted during the summer, in an indication that investors are pessimistic about the future.

The outlook is for inflation among Iceland's main trading partners to decline because of the worsening GDP growth outlook. Many industrialised countries' central banks have lowered their key interest rates as a result. The US Federal Reserve lowered its key rate by 0.25 percentage points on 18 September. The Fed had already cut rates by 0.25 percentage points in July, the first rate reduction in a decade. On 12 September, the European Central Bank (ECB) lowered the rate on overnight loans (the deposit facility rate) by about 0.10%, to -0.5%. At that time, the ECB also announced its intention to resume its net bond purchase programme on 1 November 2019, after having suspended it last December. Moreover, the bank announced changes in its targeted longer-term refinancing operations programme, called TLTRO III, in order to ensure continued favourable lending conditions, through more favourable loan terms and longer maturities.[5] The ECB also signalled that it would keep interest rates unchanged or lower them until inflation reaches the target. Unlike central banks in other advanced economies, Norges Bank has continued to raise its key interest rate. On 19 September, the bank decided to raise rates to 1.5%. It was the fourth rate hike in less than a year.

International investment position

Net international investment position positive

Iceland's net international investment position (NIIP) – external assets net of external liabilities – has never been more favourable than it is now. At the end of Q2/2019, the NIIP was positive by nearly 630

5. For further information, see https://www.ecb.europa.eu/ecb/legal/pdf/en_ecb_2019_28_f_sign.pdf.

b.kr., or 22% of GDP, after improving by 10 percentage points in the first half of the year. Financial transactions account for a third of the change (Chart II-10), and the bulk of the remainder is due to price and exchange rate movements, as the króna depreciated by 6.4% over the period and prices in foreign securities market rose by 15%.[6]

In terms of external debt only – i.e., excluding equities, unit shares, and derivatives – the NIIP was negative by 19% of GDP.[7] Short-term liabilities accounted for only 7% of external debt. The difference between the NIIP and net external debt is attributable in large part to pension funds' holdings in foreign equities and unit shares, which equalled about 45% of GDP at the end of July.

Current account surplus larger than expected

The current account surplus totalled 51 b.kr., or 3.6% of GDP, in H1/2019. The large surplus stems, among other things, from the exportation of aircraft owned by WOW Air prior to its collapse and from a positive services account balance. Excluding the effects of the old banks and of transactions with ships and aircraft, the surplus amounted to 2.5% of GDP, as opposed to 1.2% in H1/2018. The volume of goods and services imports has contracted by nearly 11% year-on-year.

It was foreseeable that WOW Air's collapse would have a negative effect on the services account surplus, which contracted in H1/2019 by 6% year-on-year, or 21% at constant exchange rates. Foreign visitors' average payment card turnover while in Iceland has risen year-to-date, however, as is discussed in the section on tourism. Furthermore, overseas travel by Icelanders declined by 5% in the first half of 2019, and this, together with a lower real exchange rate, has supported the balance on services. As a result, the services balance was more favourable in H1 than forecasts had assumed.

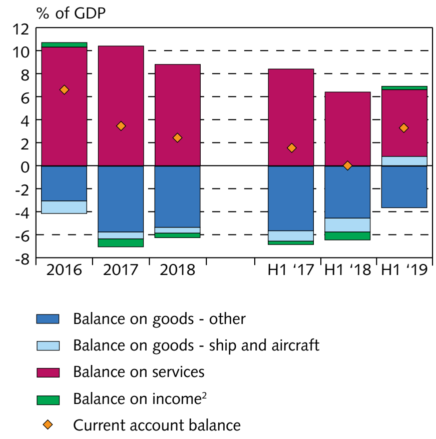
International reserves increase in krónur terms

As of end-August 2019, the Central Bank's international reserves amounted to 838 b.kr., or around a third of GDP. The ratio of the reserves to the International Monetary Fund's (IMF) reserve adequacy metric (RAM) was 166% at the end of Q2/2019. Over the first eight months of the year, the reserves increased by 102 b.kr., or 57 b.kr. at constant exchange rates. The growth in the reserves is due to the depreciation of the króna and to the issuance of a Treasury eurobond in June. The bond issue amounted to 500 million euros, or 71 b.kr. Concurrently, the Treasury offered to buy back an older eurobond that matures in July 2020, but only a small percentage of bond holders opted to do so. The Treasury's foreign-denominated debt has therefore increased since the turn of the year, and the share of the reserves financed in Icelandic krónur has fallen by 6 percentage points, to 74%. The Central Bank's net transactions in the interbank market in 2019 to date reduce the reserves by roughly 9 b.kr.

6. Almost all foreign assets are denominated in foreign currencies, but about a third of debt to foreign lenders is in Icelandic krónur. The weakening of the króna therefore improves the NIIP.

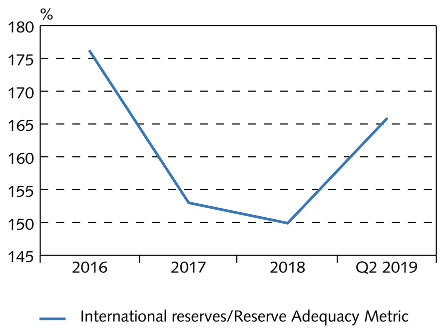
7. By narrowing the field and considering only on external debt, it is possible to focus on debt with a given repayment profile and/or interest profile. Excluding loans for foreign direct investment, the position was negative by 8% of GDP.

Chart II-11
Current account balance[1]



1. The effects of the old banks' holding companies are ignored.
2. Primary and secondary income.
Sources: Statistics Iceland, Central Bank of Iceland.

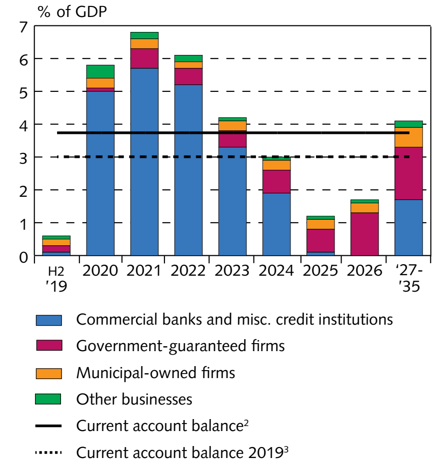
Chart II-12
Reserve Adequacy Metric[1]



1. The IMF's Reserve Adequacy Metric (RAM) is a weighted metric composed from exports, money supply, short-term liabilities, and other foreign liabilities.
Source: Central Bank of Iceland.

Chart II-13

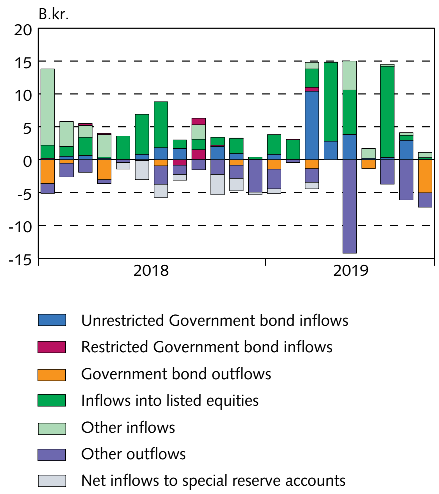
Repayment profile of long-term foreign debt[1]



1. Based on position as of Q2/2019. 2. Based on the last four quarters. Excluding the effects of the old banks' holding companies and transactions with ships and aircraft. 3. Central Bank forecast from *Monetary Bulletin* 2019/3.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-14

Registered new investment using foreign capital[1]



1. Including reinvestment.
Source: Central Bank of Iceland.

Foreign credit market terms improving

Terms in foreign credit markets have improved in the recent term, in line with interest rate reductions in the eurozone and the US. The above-mentioned June 2019 eurobond issue, with a five-year maturity, was issued at a yield of 0.122%, the lowest ever offered to the Treasury. Since then, the yield has fallen still further, to -0.24% at the end of September. In addition, a temporary spike in the commercial banks' interest premia has reversed. With increased foreign market funding, the banks are more dependent on foreign market conditions than before (see Chapter III).

Foreign inflows for new investment broadly unchanged between years

Over the first nine months of the year, inflows of foreign capital for new investment in Iceland totalled 73 b.kr.[8] Inflows for new investment net of outflows amounted to 32 b.kr. Investment in Treasury bonds increased in March, after the special reserve requirement (SRR) on capital inflows was lowered to 0%, but was limited over the summer months. The spread between interest rates on ten-year Icelandic and US Treasury bonds narrowed by 1 percentage point in Q1/2019 and has hovered around 2% in the recent term. The interest rate differential with abroad is therefore historically low, which could explain investors' lukewarm attitude towards carry trade in the recent past. Furthermore, global financial market uncertainty has increased, as has capital flight to safe assets. Inflows into the domestic equity securities market have been reasonably brisk thus far in 2019, although the figures are strongly affected by transactions with shares in Arion Bank.[9] Excluding Arion Bank, new investment in equities totalled around 25 b.kr. over the first nine months of the yerar, about the same as in all of 2018 (also excluding Arion).

After the capital controls on holders of offshore krónur were lifted in March 2019, the stock of offshore krónur shrank by 11 b.kr. Most of this capital was converted to foreign currency and exported from Iceland. Since then, the offshore stock has shrunk by another 10 b.kr., to around 62 b.kr. as of end-September. At the end of May, interest rates on the Central Bank's CBI2016 certificates of deposit were lowered from 0.5% to 0%; therefore, the vast majority of remaining offshore krónur now bear no interest.

Households' and businesses' debt and financial position

Growth in private sector debt eases

Growth in private sector debt has lost pace and now measures 3.6% in real terms year-on-year.[10] Growth in corporate debt has slowed markedly, while household debt growth has been relatively stable.

8. Inflows including reinvestment.
9. In July, Kaupthing sold its 20% stake in Arion Bank, the last holding it owned in the bank. The buyers were domestic and foreign investors. The transaction had little impact on the exchange rate of the króna, however, because of a profit-sharing agreement between the Treasury and Kaupthing and ISK swap agreements in connection with the trade.
10. The private sector includes households and non-holding companies. Government-owned companies are included as well.

Household debt is growing more strongly than corporate debt at present, even though the depreciation of the króna in the past twelve months has pushed firms' foreign debt levels up in krónur terms. Price- and exchange rate-adjusted growth in the private sector credit stock is therefore weaker than real growth, measuring about 2.8%.

The private sector debt-to-GDP ratio has risen by a full 2 percentage points since 2018. The past several years' robust growth in both GDP and debt has caused the ratio to rise only slightly from its 2016 trough. This suggests that growth in debt has been relatively healthy. However, a steep rise in the debt-to-GDP ratio can be a sign of unsustainable overleveraging.

Households

Slowdown in private consumption growth

Households' financial position has grown much stronger in recent years, supported by favourable economic developments. Asset prices have risen steeply, particularly in the real estate market, boosting households' net wealth. Owing to a virtually unprecedented surge in disposable income coupled with moderate growth in private consumption, households have stepped up their savings and paid down debt. In doing so, they have strengthened their balance sheets and prepared for the period of weaker disposable income growth that has now begun. Private consumption growth began to lose pace in 2018 and, according to the Central Bank's most recent macroeconomic forecast, will ease still further this year, to about 1.9%. Disposable income growth is projected to be somewhat stronger, however, or 3.2%. Unemployment can be expected to rise somewhat over the same period, as labour-intensive sectors such as tourism are facing a contraction.

Even though the outlook for households has deteriorated, default among individuals has not yet increased to any marked degree. The number of individuals on the default register has remained broadly stable in the past year, after a decline beginning in 2013. The share of non-performing household loans granted by the large commercial banks and the Housing Financing Fund is broadly unchanged, measuring 2.3% at the end of August 2019, up from 2.1% at the turn of the year.

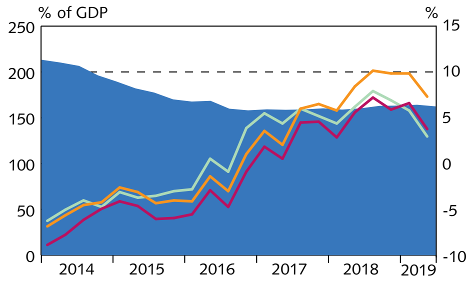
Household debt growing faster than income

At the end of June 2019, the ratio of household debt to GDP was just under 76%, an increase of slightly more than 1 percentage point year-on-year. Before then, it had been virtually unchanged since 2016. This is due for the most part to the recent slowdown in GDP growth. As in the recent term, households' mortgage debt is rising, while other debt is contracting in real terms. This indicates that households have ready access to credit and that borrowers are using increased housing wealth and disposable income to convert other debt to mortgage debt. This trend is unlikely to continue at the recent pace, as house prices have risen very little in the past year, disposable income growth has eased, and borrowing terms have grown tighter.

Real year-on-year growth in household debt measured 4.1% at the end of June, about the same as in the previous year. In the

Chart II-15

Private sector credit growth[1]

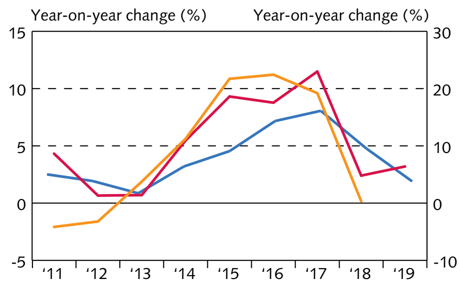


Credit-to-GDP ratio (left)
Real credit growth (right)
Nominal credit growth (right)
Price- and exchange rate-adjusted credit growth[2] (right)

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-16

Private consumption, disposable income and household wealth[1]

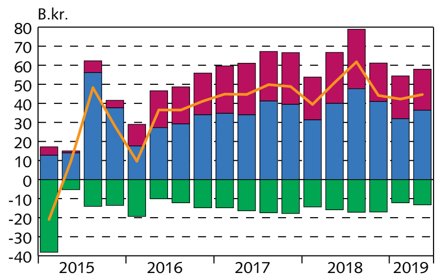


Private consumption (left)
Real disposable income (left)
Real total household wealth (right)

1. Central Bank baseline forecast for 2019, published in *Monetary Bulletin* 2019/3. Total household wealth is net financial wealth, including housing wealth and net of household debt
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-17

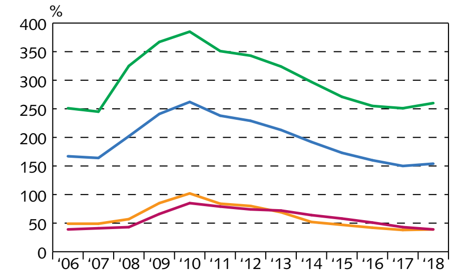
Net new lending to households[1]



Banks
Pension funds
The HFF
Total net new loans

1. Net new household loans from banks, pension funds and the HFF. No information on extra payments of loans from pension funds before September 2015. At June 2019 prices.
Sources: Statistics Iceland, Central Bank of Iceland.

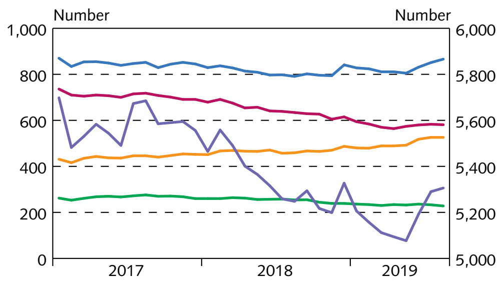
Chart II-18
Debt as a share of disposable income
By housing position



- All
- Non homeowners
- Homeowners without mortgage
- Homeowners with mortgage

Sources: Statistics Iceland, Central Bank of Iceland.

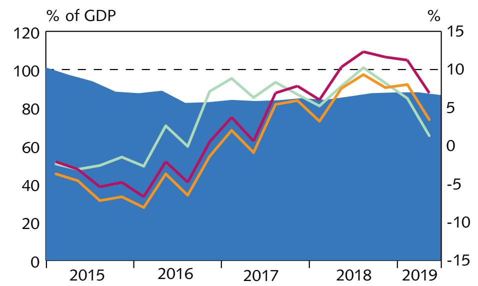
Chart II-19
Companies on default register



- Building and construction (left)
- Real estate companies (left)
- Tourism (left)
- Fisheries (left)
- All companies (right)

Source: CreditInfo.

Chart II-20
Companies: Credit growth[1]



- Credit-to-GDP ratio (left)
- Nominal credit growth (right)
- Real credit growth (right)
- Price- and exchange rate-adjusted credit growth[2] (right)

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.

first eight months of the year, non-indexed loans accounted for 76% of net new loans to households, up from 67% in 2018. As a result, roughly a fourth of all household debt is now non-indexed. About 40% of new household loans granted in the first eight months of 2019 were from pension funds, virtually the same as in the same period of 2018.

Data from personal income tax returns show that loan-to-value ratios fell between 2017 and 2018, whereas the ratio of debt to disposable income rose.[11] The debt-to-disposable income ratio had fallen steadily from 2010 through 2017, partly in response to rising disposable income.

Households' position has grown much stronger in recent years and is very favourable in historical context. Other things being equal, falling interest rates should lighten borrowers' debt service burden and reduce the likelihood of default, provided that the rate cuts are passed through to lending rates. Households should therefore be well prepared for weaker growth in disposable income, particularly if unemployment does not rise significantly.

Companies

Outlook cloudy, but firms are resilient

Firms' operating environment is generally less favourable now than it has been in some time. Owing to negative economic developments in Iceland and elsewhere, together with increased unrest in international markets, Icelandic companies are facing greater uncertainty than before. Private consumption growth has slowed, and there are signs that firms' returns will weaken as their debt increases. Even so, firms are generally quite resilient after a long GDP growth phase, and most of them should be well prepared for short-term headwinds. Rising debt in the past two years has cut into that resilience, however, and there are signs that equity ratios are falling.

The number of firms on the default register has risen by just over 4% since end-May 2019, with the greatest proportional increase among construction and tourism companies. In the past year, the number of construction companies on the default register has risen nearly 10% and the number of tourism companies by close to 15%, whereas the overall increase was only 1%. Both of these sectors have seen explosive growth in recent years, and their debt has risen faster than in most other sectors. The number of companies in operation has also risen strongly – more so in construction and tourism than in other sectors. Although the number of firms on the default register has risen, corporate insolvencies have declined year-on-year. The number of company failures in 2019 to date is about the same as in the same period of 2017. Construction company failures figured prominently in the wake of the last recession, but no such increase has been noted in the past few months' insolvency figures, either in construction or in any other sector. The current economic slump has not lasted long

11. Information from individuals' income tax returns, processed by Statistics Iceland for the Central Bank.

enough, and thus far it is mild enough that it has not triggered a spike in company failures.

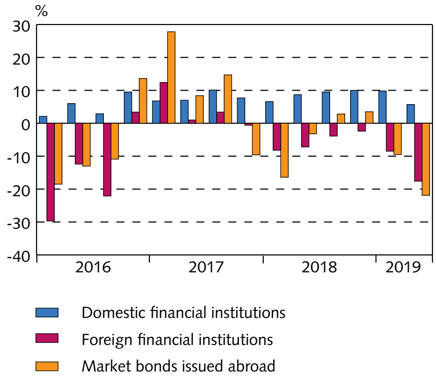
Corporate debt growth slows markedly

Corporate debt growth measured 3.2% year-on-year in real terms at the end of Q2/2019. Growth in debt has slowed significantly, after peaking at 9.1% in Q3/2018. Weaker growth in debt is due to a slowdown in lending growth, a contraction in debt to foreign financial institutions, and a reduction in bonds issued in foreign markets. The contraction in foreign debt is due in part to the collapse of WOW Air, as the airline's debt declined steeply during the prelude to and aftermath of its insolvency. According to Central Bank estimates, real year-on-year growth in corporate debt was just under 1 percentage point higher at the end of Q2, or 4.1%, if the direct impact of WOW's collapse on the debt figures is ignored. The corporate debt-to-GDP ratio was 86.6% at the end of Q2, a scant 1 percentage point higher than at the same time in 2018.

Nearly a third of corporate debt is in foreign currencies; therefore, the depreciation of the króna has a strong impact on nominal growth in corporate lending. Price- and exchange rate-adjusted growth in corporate debt measured only 1.1% year-on-year as of mid-2019. Measured at constant exchange rates, foreign-denominated corporate debt contracted sharply in H1/2019. As Chart II-21 indicates, developments vary by type of financing. For example, exchange rate-adjusted foreign-denominated loans granted by domestic financial institutions increased, while the loans of the same type from foreign financial institutions contracted, as did marketable bonds issued abroad.

Chart II-21

Developments in foreign-denominated corporate debt at constant exchange rates, by type of financing[1]



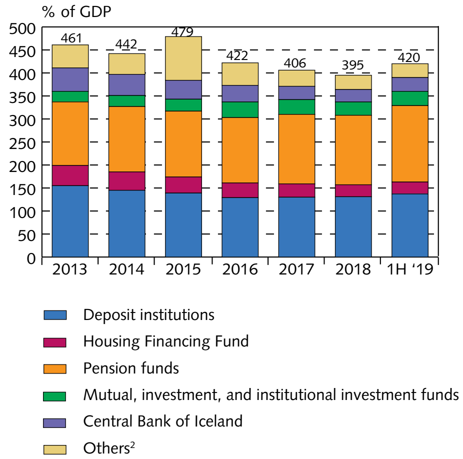
1. Annual growth in foreign-denominated debt, at constant exchange rates. Including Government-owned companies.
Source: Central Bank of Iceland.

III Financial institutions and other lenders

Financial system assets totalled 420% of GDP at the end of June 2019, having grown in H1/2019 by about one-fourth of GDP, or about 7.5% in real terms. This is unusual in the context of the past several years, as financial system assets have either shrunk or remained flat between years, both in real terms and as a share of GDP. The increase in system-wide assets is due mainly to an 11% real increase in pension fund assets and a 6% real increase in deposit institution assets. Assets held by pension funds and deposit institutions now account for some 78% of total system assets, excluding the Central Bank. Among other financial system entities, insurance companies saw their assets increase by nearly a third in real terms in H1, and assets held by mutual funds, investment funds, and institutional investment funds increased by almost 10%. Because these parties' assets are small in comparison with those held by pension funds and deposit institutions, their impact on total financial system assets is limited.

Chart III-1

Financial system: Assets as % of GDP[1]



1. Parent companies. 2. Failed financial institutions that have undergone composition are included with other financial institutions as of the time their composition agreements were approved. The Central Bank of Iceland Holding Company ehf. (ESÍ) is also included with other financial institutions from its establishment in December 2009 until its dissolution in February 2019.
Sources: Statistics Iceland, Central Bank of Iceland.

III a Systemically important banks

The domestic systemically important banks' (D-SIB) profits and returns declined year-on-year in H1/2019, primarily because of loan impairment, whereas loan valuation adjustments were positive in H1/2018. Net interest income has also increased in the recent term, alongside an increase in lending and interest-bearing assets, although the interest rate differential has narrowed.

The banks' liquidity remains above Central Bank requirements. The liquidity ratio in Icelandic krónur has fallen, while the foreign liquidity ratio has risen, with the net result that the overall ratio is broadly unchanged. As before, the banks' domestic funding was limited mainly to covered bond issues, as is laid down in their business plans. Premia on the banks' foreign issues rose rather sharply in late 2018 and early 2019 but then fell again this spring. The banks are facing some need for refinancing because of foreign bond maturities next year.

The D-SIBs' capital ratio was unchanged year-on-year at the end of June despite sizeable dividend payments. The scope to lower the capital ratio is limited without changes to their funding structure. In early July, Kaupthing announced that it had completed the sale of its entire holding in Arion Bank to domestic and foreign investors.

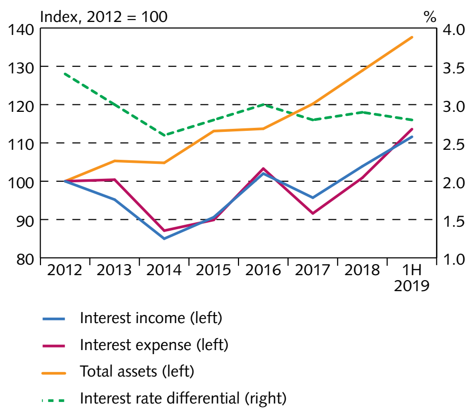
Operations and equity[1]

Interest rate spread narrows

The D-SIBs' combined profit totalled 19 b.kr. in H1/2019, after contracting by a fifth year-on-year. Return on equity amounted to 6.2%,

Chart III-2

D-SIB: Interest income, interest expense and interest rate differential[1]



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

1. 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 (or domestic systemically important banks, D-SIB). The discussion in this chapter is based on the D-SIBs' consolidated interim accounts for H1/2019 and comparison figures for H1/2018. Figures are consolidated unless otherwise stated. The aggregate position may diverge from that of individual financial companies.

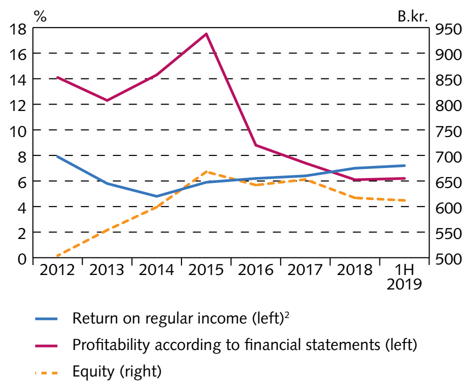
just over 1½ percentage points less than over the same period in 2018, owing almost entirely to reduced profit. The return net of bank taxes totalled 7.7%. The return on total assets fell 0.4 percentage points year-on-year, to 1% in H1/2019. It has fallen by nearly 1 percentage point in the past two years. The D-SIBs' return on total assets is similar to that recorded by other Nordic banks of similar size. Profits and returns differed from one D-SIB to another in H1/2019. Landsbankinn recorded the highest return on equity, 9.2%, nearly a percentage point lower than in the same period of 2018. Íslandsbanki's return on equity was 5.4%, down 3 percentage points between years, and Arion Bank's was 3.2%, down 1.6 percentage points between years. By the same token, returns on total assets differed from one bank to another, with Landsbankinn recording by far the highest of the three.[2]

Net interest income totalled 52 b.kr. in H1/2019, 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 was 2.8% in H1/2019, a decline of 0.1 percentage points between years. As Chart III-2 shows, the D-SIBs' combined balance sheet has grown by more than a third since 2012, but interest income and interest expense have not followed this trend. The interest rate spread between assets and liabilities has therefore narrowed over the period. Since 2017, interest income has developed broadly in line with total assets, while interest expense has grown more rapidly. This is the main reason the interest rate spread narrowed in H1/2019. Net interest income currently accounts for 70% of the banks' total income. Net interest income derives from two sources: interest-bearing assets and liabilities, and interest rate spreads. In international context, Icelandic banks are considered to have a wide interest rate spread between assets and liabilities. As interest rates fall, it becomes more difficult for the banks to pass on changes in the Central Bank's key rate, on both sides of the balance sheet. As early as this spring, interest on sight deposits was just above 0% in many cases. This means that the banks have less scope to pass on reductions in the key rate on the liabilities side. If there is greater scope to lower lending rates than to lower deposit rates, reductions in the Bank's key rate will put pressure on the banks' interest rate spreads (all else being equal), thereby cutting into their profits and returns.

Net fee and commission income totalled 15.5 b.kr. in H1/2019, an increase of nearly 1 b.kr. year-on-year. The banks' regular income – i.e., net interest income and fee and commission income – now accounts for nearly 90% of their total income. The weight of regular income has increased markedly in recent years. The return on regular income has increased as well. It has risen by a percentage point over the last two years and measured just over 7% in H1/2019.[3]

The banks' irregular income totalled 11.4 b.kr. in H1/2019, up from 9.8 b.kr. in H1/2018. Their income from financial activities

Chart III-3
D-SIB: Profitability[1]



1.Profitability is calculated from average equity. Domestic systemically important banks, consolidated figures. Valitor excluded in 2017, 2018 and 2019. 2. Profitability of regular income is based on net interest and fee/commission income less regular cost. The tax rate is 20% and return is based on average equity.
Sources: Commercial banks' financial statements.

2. Landsbankinn's return on total assets was 1.6%, as opposed to 0.8% for Íslandsbanki and 0.5% for Arion Bank.
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 of 20% is based on the average balance of capital.

totalled 8.2 b.kr. in the first half of 2019, an increase of over 80% year-on-year. About 6 b.kr. of that income stems from share price increases, and another 1 b.kr. is due to revaluation of purchased loans. Other operating income during the half totalled 3.2 b.kr., a reduction of 2.2 b.kr. year-on-year. The decline is due mainly to sizeable profits on the sale of appropriated assets in H1/2018, which did not accrue this year.

Upward loan valuation adjustments complete for the present

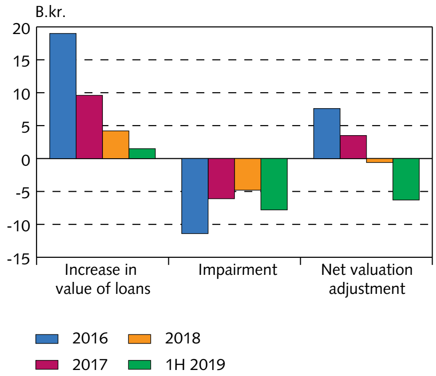
The D-SIBs' net loan valuation adjustments were negative in the amount of 6.3 b.kr. in H1/2019, whereas they were positive by 3.3 b.kr. in H1/2018. Loan value adjustments have had a positive impact on the D-SIBs' operating results in recent years. This year, however, it appears that value adjustments will have a sizeable negative impact on their operating results. Indeed, it is this item that is responsible for most of the year-on-year change in performance. The return on equity would have been 2.5 percentage points higher if loan valuation adjustments for H1/2019 had been comparable to those for the same period in 2018. The increase in value was limited in H1, and the loan valuation adjustments are therefore characterised by impairment. The three largest banks recorded similar impairment levels: Arion Bank with 2.1 b.kr., Íslandsbanki with 1.8 b.kr., and Landsbankinn (which has the largest loan portfolio) with 2.4 b.kr. The banks estimate their average annual loan losses at 0.3-0.5% of their loan portfolio in the long run, and this year they project that impairment will lie in that range, or 8-14 b.kr. In the spring, there was some uncertainty about how impairment would develop in 2019 and 2020, in part because of WOW Air's insolvency, the grounding of Icelandair's Boeing 737 Max jets, and the failed capelin catch. The banks now expect the impact of these shocks to be less pronounced than was assumed in the spring, as the most recent statistics suggest that this year's economic contraction will be smaller than previously thought.

Expense ratios decline

The D-SIBs' combined expense ratio has been high in recent years, and reduced one-off income items have caused the expense ratio to trend upwards. The banks themselves have emphasised the importance of boosting returns by streamlining and cutting costs. They have taken a number of cost-cutting steps, including laying off staff, merging branches and reducing their number, and merging services that they offer; for instance, at the end of 2017 the large banks were granted an exemption from the Competition Act in order to operate a joint banknote vault. In May 2019, two of the banks announced layoffs, whereas in recent years they have relied primarily on downsizing by not replacing departing staff members. At the end of last September, Arion Bank announced plans to lay off 100 employees, plus 12 Valitor employees. At the same time, Íslandsbanki announced the layoff of 20 members of staff. This is the largest redundancy in the financial sector since the financial system collapse just over a decade ago.

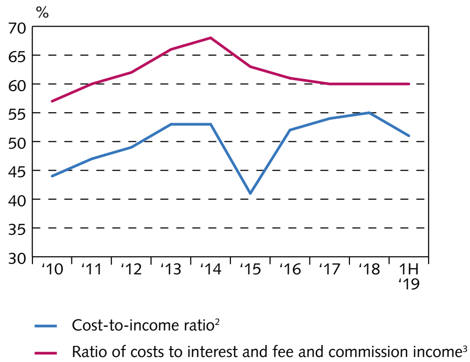
In H1/2019, the D-SIBs' combined operating expenses were down in real terms by 2% year-on-year (including a 3% reduction in

Chart III-4
D-SIB: Income and expenses due to revaluation of loans and receivables[1]



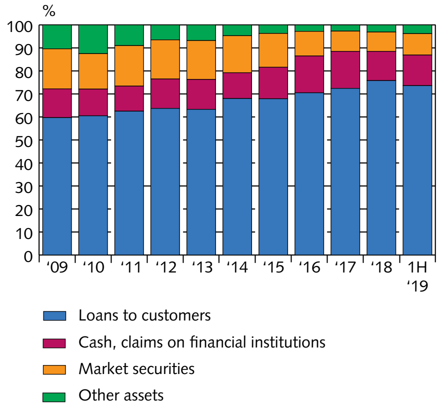
1. Domestic systemically important banks, consolidated figures.
Sources: Commercial banks' financial statements.

Chart III-5
D-SIB: Cost-to-income ratios[1]



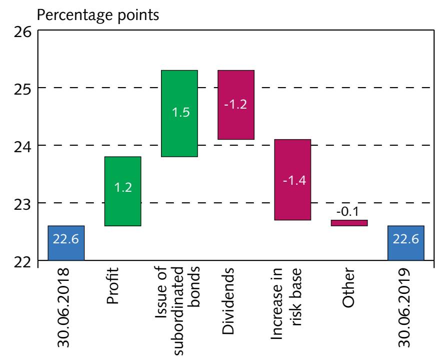
1. Domestic systemically important banks, consolidated figures. Valitor excluded in 2017, 2018 and 2019. 2. Operating expenses, adjusted for major irregular items, as a share of operating income, excluding loan revaluation changes and discontinued operations. 3. Operating expenses, adjusted for major 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[1]



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

Chart III-7
12 month change in D-SIBs' capital ratios in Q2 2019[1]



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

wage expenses), to 40.6 b.kr. The D-SIBs' combined expense ratio was 51% in the first half of 2019, and all of the banks' ratios fell by 2-4 percentage points year-on-year. The ratio of expenses to interest income and fee and commission income was just under 60% in H1/2019. This represents a decline of over 3 percentage points relative to H1/2018 but is unchanged relative to year-end 2018.[4]

Lending growth eases

Demand for credit has been strong in the recent term, from both individuals and businesses. There are signs of a slowdown in growth, however, as D-SIB lending increased by just under 4% in H1/2019, as opposed to 12% in 2018 as a whole. In June 2019, nearly 74% of the banks' assets were in the form of customer loans, a decline of 2 percentage points since the turn of the year. This share was nearly 60% at the end of 2009, and each year since then it has either risen or remained flat.

Developments in lending activity varied from one bank to another in H1/2019: Arion Bank stands out with a 1.5% contraction, while Íslandsbanki and Landsbankinn increased their lending by 6% each. The main reason for Arion's contraction in lending is that the bank has focused on returns on lending rather than on expanding its loan portfolio. This has prompted some customers to take their business elsewhere. In August 2019, Arion announced that it had reached an agreement with the Housing Financing Fund (HFF), under which the HFF will purchase 50 b.kr. in mortgage loans from the bank this October. Concurrent with the sale, the bank will pay off covered bonds in the amount of 60 b.kr. Absent other changes, then, Arion's loan portfolio will shrink still further in H2/2019.

The banks anticipate weaker credit growth in H2/2019 than in H1. In some instances, liquidity and capital requirements may affect further growth in lending, although economic uncertainty is another factor. Demand for loans remains strong, according to the banks, particularly demand for new mortgage loans.

In order to enhance financial system resilience, including resilience to potential credit losses in the wake of lending growth and cyclical systemic risk, the countercyclical capital buffer was increased by 0.5 percentage points in May and, absent any other changes, will rise by another 0.25 percentage points in February 2020. Furthermore, the Financial Supervisory Authority (FME), in its Supervisory Review and Evaluation Process (SREP), has increased financial institutions' capital requirements because of strong lending growth.[5]

Limited downside scope for capital ratios

The D-SIBs' capital totalled 612 b.kr. at the end of June. This is the same as it was in mid-2018 but a 5 b.kr. reduction since the year-end. In H1/2019, the banks paid dividends amounting to 25 b.kr. Their combined capital ratio was 22.6% at the end of June, the same as it was a year earlier but a decline of 0.6 percentage points in H1/2019.

4. The comparison of operating expenses excludes Valitor.
5. See https://www.fme.is/media/utgefid-efni/Fjarmal-28-agust-2019-utg.pdf and https://www.fme.is/log-og-tilmaeli/vidmid-fme/.

The reduction in the capital ratio due to the dividend payments and the increase in risk-weighted assets is offset by profits and subordinated bond issues.[6] The D-SIBs' risk-weighted assets amounted to 2,729 b.kr. as of end-June. This represents 71% of total assets, some two percentage points less than at the turn of the year. Their leverage ratio at the end of June was 14%, which is 1 percentage point less than at year-end 2018. The Icelandic banks' leverage ratios are still the highest in the European Economic Area, however, where the average is 5.4%.[7]

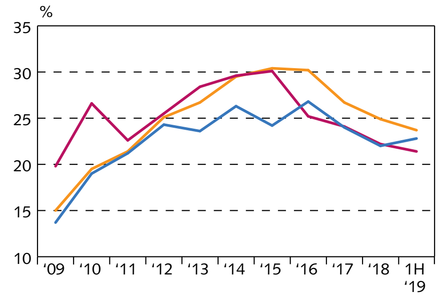
The FME's total required capital base for the D-SIBs, after full implementation of capital buffers, ranges from 19% to 20.7%. It is based on the banks' position as of end-2018, and account has been taken of the 0.25-point increase in the countercyclical capital buffer in February 2020. The large banks' capital ratios are about 2-3 percentage points above FME requirements, and if adjustments are made for so-called management buffers, all of the banks' capital ratios are roughly 1 percentage point above the benchmark.[8] Their scope to lower their capital ratios is therefore limited without changes to their funding structure.

The D-SIBs' capital base consists largely of common equity Tier 1 (CET1); therefore, it is possible to change the composition of the capital base by issuing capital instruments classified as Additional Tier 1 (AT1) and Tier 2 capital. Based on the FME's capital requirement for each D-SIB, capital instruments classified as AT1 and Tier 2 capital could range between 4.2% and 5.0% of risk-weighted assets, thereof Tier 2 capital could range between 2.4 and 2.8%. The banks have stepped up their Tier 2 bond issues to 49 b.kr. as of end-June 2019, as opposed to 9 b.kr. a year earlier. By now, they have limited scope to issue further subordinated bonds classified as Tier 2 capital: Íslandsbanki has fully utilised its scope, Arion Bank has little scope left because of the foreseeable downsizing of its balance sheet, and Landsbankinn has used about half of its scope for Tier 2 issuance. The banks have not issued capital instruments classified as AT1; therefore, it would be possible to increase their capital ratio or change their funding structure through such issuance. According to the banks, this option is not desirable in view of the State Internal Revenue Board ruling concurring with the Director of Internal Revenue's binding opinion that interest payments on such issues are not tax-deductible.[9]

The banks themselves specify that their minimum ratio of CET1 to risk-weighted assets must range between 16.5% and 18%, which is 2-4 percentage points lower than it was at the end of June. On the other hand, if the banks do not intend to issue AT1-classified capital instruments, Íslandsbanki and Arion have very little room to lower their CET1 ratio, and Landsbankinn's scope to do so is limited.

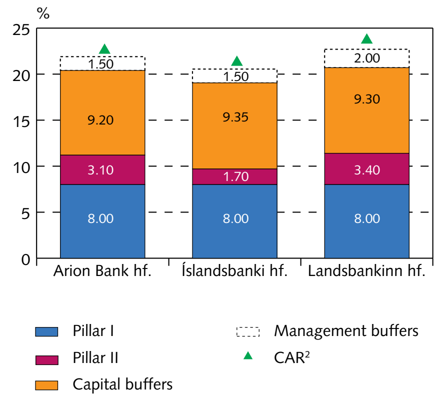
6. In Arion Bank and Landsbankinn's interim financial statements, the calculation of the end-H1/2019 capital ratio is based on the assumption that half of the prior year's profit will be paid to shareholders as a dividend. The foreseeable dividend payment is not included in the capital base.
7. Leverage ratios are calculated in accordance with the Act on Financial Undertakings, no. 161/2002, and are subject to a minimum of 3%.
8. The management buffer is an internal prudential buffer defined by the banks themselves.
9. See State Internal Revenue Board Ruling no. 95/2019 (https://yskn.is/).

Chart III-8
D-SIB: Capital adequacy ratios[1]



1. Domestic systemically important banks. Consolidated figures. The ratio of the capital base to the risk base. 2. In Arion Bank and Landsbankinn's interim financial statements, the calculation of the capital ratio is based on the assumption that half of the profit for the first half of the year will be paid to shareholders as a dividend. The foreseeable dividend payment is therefore not included in the capital base.
Sources: Commercial banks' financial statements.

Chart III-9
D-SIB: Capital requirements and capital adequacy ratios[1]



1. Domestic systemically important banks, consolidated figures. Consolidated figures. Pillar II according to SREP at year-end 2018. Capital buffers assuming full implementation, which includes increase of CCyB from 1.75% to 2% in February 2020. Adjusted for reductions in systemic risk and countercyclical capital buffers for foreign exposures. 2. Capital ratio at end of Q2 2019.
Sources: Commercial banks' financial statements and other published materials.

Therefore, it is unlikely that the banks will be able in the near future to pay dividends in excess of those attributable to profit. Furthermore, the expansion of the risk base due to credit growth calls for an increase in reserves, which should be borne in mind when decisions on dividends are made. The banks' funding structure must be in line with current requirements concerning the risk base. It is important to stand guard of financial institutions' resilience, as some of the risks facing the economy recently have already materialised, and it is still uncertain how matters will develop in the coming term.

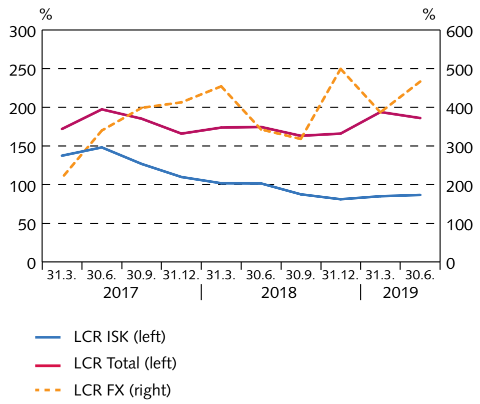
Liquidity and funding

Liquidity ratios above Central Bank minimum

All of the banks' liquidity ratios are somewhat above the minimum specified in the Central Bank of Iceland Rules on Liquidity Ratio. The aim of the Rules is to mitigate credit institutions' liquidity risk by ensuring that they always have sufficient liquid assets to fulfil their obligations under stressed conditions over a specified period of time. In most respects, the Rules are identical to the corresponding European regulatory instruments. Credit institutions' liquidity ratio shall always equal or exceed 100%, both overall and in foreign currencies. The D-SIBs' combined liquidity ratio was 203% at the end of August 2019. At that time, the liquidity ratio in foreign currencies was 479%, whereas the ratio in Icelandic krónur was 89%.

Chart III-10

D-SIB: Liquidity coverage ratio[1]



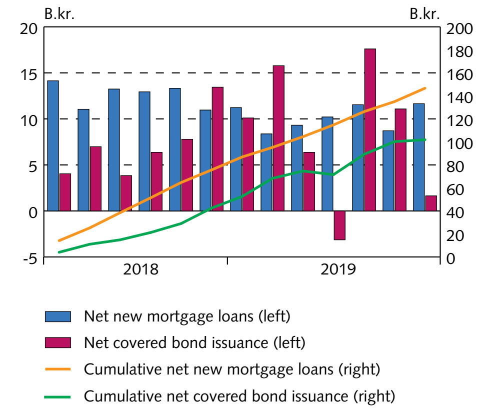
1. Consolidated figures.
Sources: Domestic systemically importants banks Interim financial statements.

Increased weight of market funding in the banks' balance sheets

As before, the largest single source of funding for the Icelandic banks is deposits, which accounted for 50% of total funding as of end-August, an increase of 1 percentage point since the turn of the year. Over the first eight months of the year, deposits increased by 4%, as opposed to an 8% increase over the same period in 2018. Nevertheless, the banks' balance sheets have grown more rapidly than deposits have, which lowers the ratio of deposits to total funding. Just over half of all deposits are held by individuals and small and medium-sized companies. These deposits grew by 3% in the first eight months of 2019. Over the same period, large companies' deposits increased by 8% and pension funds' deposits by 13%. Where nearly all of the increase is due to foreign-denominated deposits.

Chart III-11

D-SIB: Net covered bond issuance and net new mortage lending



Source: Central Bank of Iceland.

During the first eight months of the year, the stock of outstanding covered bonds issued by the banks, the majority of them indexed bonds, has increased by 70 b.kr. This is slightly more than over the same period in 2018. In the past several years, the banks' net new mortgage loans have somewhat exceeded their covered bond issuance, but in the first eight months of 2019, covered issuance was on a par with net new mortgage lending.[10] As a share of their residential mortgage portfolio, the banks' covered bonds increased by three percentage points since the beginning of 2019, to 52% by end-June. The D-SIBs' stock of outstanding bills shrank by 10 b.kr. in the first eight months of the year. In all, domestic market funding accounted

10. Net new loans are defined as new loans less loan retirement and loan prepayments in excess of contractual requirements.

for 12% of the total by end-August, an increase of 1 percentage point in 2019 to date. In May, the Central Bank amended its rules on eligible collateral for Bank facilities to include covered bonds, subject to certain conditions. This should enhance the liquidity of the bonds, which could encourage further issuance. In recent months, however, the banks have slowed down their covered bond issuance, and market trading with covered bonds has contracted. Over the same period, the interest premium (over and above risk-free rates) on covered bonds has increased, which indicates an erosion of the banks' funding terms in spite of falling interest rates.

After rising steeply in 2018 and early 2019, the interest premium on the banks' foreign issues began to fall again in the spring. The premium has been relatively stable in recent months. The banks' foreign bond issuance has been slightly stronger in H1/2019 than in the same period last year. The largest single issue was a eurobond in the amount of 40 b.kr., issued by Íslandsbanki this spring. The banks have continued to issue subordinated bonds. Thus far in 2019, Arion Bank has issued two foreign-denominated subordinated bonds, in addition to issuing its first subordinated bond in Icelandic krónur. Íslandsbanki also issued a foreign-denominated subordinated bond in June.

Foreign refinancing risk on the rise

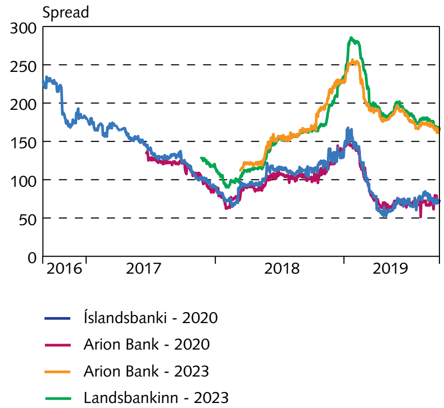
The net increase in the banks' foreign funding in the first eight months of the year totals 43 b.kr. In April, Íslandsbanki paid about 40 b.kr. towards a eurobond that matures next year. Some of this increase has been used to grant foreign-denominated loans, although the banks have also increased their foreign liquid assets. The banks' foreign-denominated loans amounted to just under 69% of their foreign funding at the end of June. Their net stable funding ratio (NSFR) in foreign currencies was 161% at the end of August and has been relatively stable for the past twelve months. In July, rating agency Standard & Poor's affirmed the banks' credit ratings but changed the outlook from stable to negative.

Next year, foreign-denominated bonds issued by the D-SIBs will mature in the amount of 137 b.kr. This is equivalent to 22% of their foreign market funding and 3.6% of their balance sheet as of end-August. The following two years will see large maturities as well, with 150 b.kr. maturing in 2021 and 140 b.kr. in 2022. With increased foreign market funding, the banks are more dependent on foreign market conditions than before. Based on the end-August position, not all of the banks have enough liquidity buffers to pay off their 2020 maturities without pushing their overall liquidity ratio below the Central Bank minimum.

Liquidity position in Icelandic krónur could prove a limiting factor

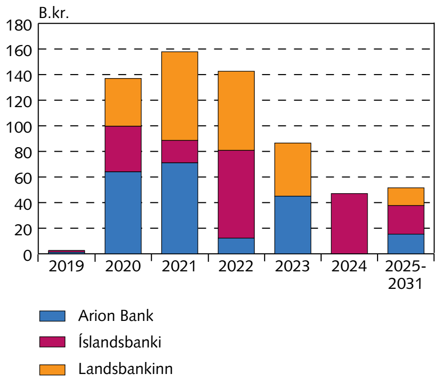
The banks' liquidity ratio in Icelandic krónur has been on the decline in the recent term, with high-quality liquid assets in krónur falling by 182 b.kr. since mid-2017. As before, term deposits with the Central Bank constitute the majority of their liquid assets in krónur. There is no specified minimum liquidity ratio in Icelandic krónur, although such domestic minimum ratios have been imposed in Norway and Sweden.

Chart III-12
D-SIB: Spread on listed foreign bonds, EUR[1]



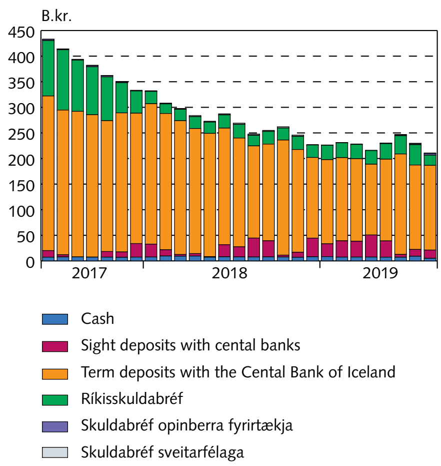
1. Spread on Euro benchmark curve.
Source: Thomson Reuters.

Chart III-13
D-SIB: Foreign bonds by maturity[1]



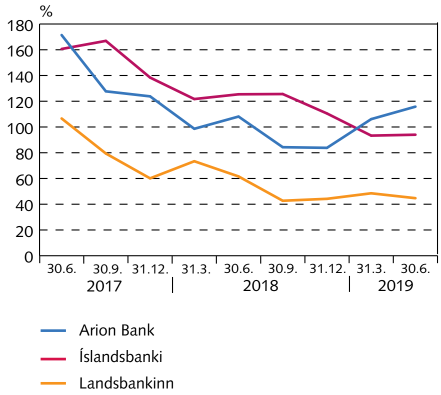
1. At 31.8 2019 exchange rate.
Source: Nasdaq Iceland.

Chart III-14
D-SIB: Liquid assets[1]



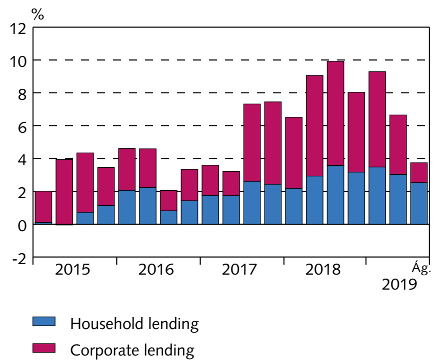
1. Parent companies. Liquid assets in Icelandic krónur.
Source: Central Bank of Iceland.

Chart III-15
D-SIB: Liquidity coverage ratio[1]



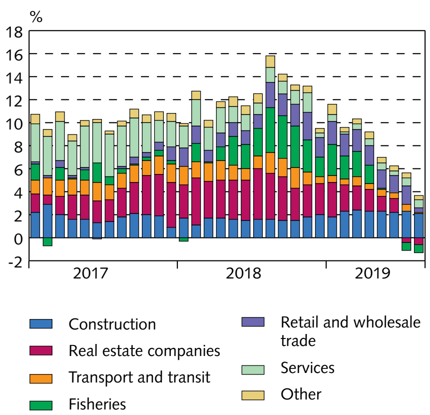
1. Domestic systemically important banks, consolidated figures.
Sources: Domestic systemically importants banks Interim financial statements.

Chart III-16
D-SIB: Real change in lending[1]



1. Parent companies. Year-on-year real change.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-17
D-SIB: Sectoral contribution to credit growth, exchange rate-adjusted[1]



1. Annual growth in corporate lending. Foreign-denominated debt at constant exchange rates; other debt at nominal value. Year-on-year real change.
Source: Central Bank of Iceland.

The Central Bank has been examining the possibility of setting rules specifying such a minimum. In general, liquid assets should be in the same currency as expected outflows. A decision on a minimum ratio in Icelandic krónur must be based on various considerations, such as the supply of liquid assets in krónur and the banks' ability to obtain krónur in the event of a domestic liquidity crisis. It is also important to bear in mind that the ratio can be somewhat volatile; therefore, it is desirable to specify the trough of a normal cycle as the minimum.

Virtually the only liquid assets in krónur that are available to the banks are Treasury bonds, HFF bonds, and deposits with the Central Bank. This means that liquidity requirements will directly affect how much of their liquidity they deposit with the Bank. Therefore, because of liquidity requirements, the balance of excess reserves deposited with the Central Bank is not the only factor that indicates how comfortable the banks' liquidity position is. As the banks lend more, offsetting deposits accumulate in the banks, which causes the banks' liquidity requirements to rise and their liquidity ratios to fall. If a given bank loans more than its share in the deposit market, it is highly likely that loans to individuals and businesses will end up in deposit accounts with other banks. This reduces the first bank's liquidity. Other economic factors could also have an adverse effect on the banks' liquidity ratios, such as increased default levels and larger overdrafts stemming from the economic contraction. The banks must prepare for these changed circumstances when they estimate their liquidity need in the coming term.

The banks have had difficulty obtaining domestic market funding in recent years, with the exception of their covered bond issues. No unsecured bonds have seen the light of day apart from Arion's subordinated issue earlier this year. The banks need to increase the share of market funding in their total domestic funding. As before, it is vital to maintain financial system resilience, and lending growth and dividend payments must be kept under control so as not to jeopardise system liquidity.

D-SIB lending: developments and loan quality

Growth in D-SIB lending has receded somewhat from its Q3/2018 peak. Real growth in D-SIB loans to customers measured 3.7% year-on-year at the end of August. Growth in corporate lending has slowed markedly, to 2.2% as of August, down from 14% at the end of November 2018. Growth in household lending has been more robust, measuring 5.8% at the end of August. The vast majority (75%) of new loans granted to households this year are non-indexed. Further examination of corporate lending reveals a significant difference in lending growth from one sector to another. For example, loans to construction companies were up by 16% year-on-year in real terms at the end of August. Over the same period, loans to real estate firms have contracted slightly and lending to tourism companies has slowed significantly. Just under 29% of the D-SIBs' corporate loans are in foreign currencies. In the past twelve months, the króna has depreciated somewhat, causing the value of foreign-denominated loans to rise. This has exaggerated credit growth figures somewhat. If foreign-denominated loans are measured at constant exchange rates and króna-denominated loans are measured in real terms, growth in the D-SIBs' corporate lending measures only 0.5% year-on-year.

Despite the cooling of the economy, the banks have seen no discernible increase in default, either at the facility level or using the cross-default method.[11] The banks' cross-default non-performing ratio was 3.7% at the end of August, which is very low in historical terms. For households, the ratio was 2.1% and for businesses it was 4.9%. It bottomed out in Q1/2019 and has risen slightly since then. The increase stems mainly from loans to individuals and loans to services companies. The facility-level default ratio, which is based on 90-day arrears, was 2.2% at the end of Q2/2019 and has been virtually unchanged since the beginning of the year. However, the banks' interim financial statements suggest that risk in their loan portfolios increased somewhat in H1/2019. The signs of this vary in type and intensity from one bank to another, though. Examples include an increase in loans in arrears by less than 90 days, a deterioration in firms' credit scores, and an increased share of corporate loans classified as stage 2 according to the IFRS 9 financial reporting standard.[12] The common feature appears to be increased risk facing the services and construction sectors and real estate companies. If economic forecasts materialise, risk on the banks' balance sheets can be expected to keep growing and default to start rising in H2/2019.

According to the banks' interim financial statements, the ratio of collateral to maximum credit risk in the banks' balance sheets has risen in 2019 to date. This indicates an improved collateral position. Some 74% of collateral is now in the form of real estate, an increase of just over 1 percentage point year-to-date. The value of other collateral (e.g., liquid assets, motor vehicles, etc.) has remained broadly constant.

III b Other lenders

The Housing Financing Fund's (HFF) operating performance is strongly and negatively affected by large-scale loan retirement and excess loan payments by its customers. Major changes in the Fund's operational form are expected to take effect at the end of this year. The pension funds have continued to invest in foreign assets, but growth in lending to fund members has eased. Shadow banks' assets have increased somewhat after contracting for the last two years.

HFF to cease operation in its current form

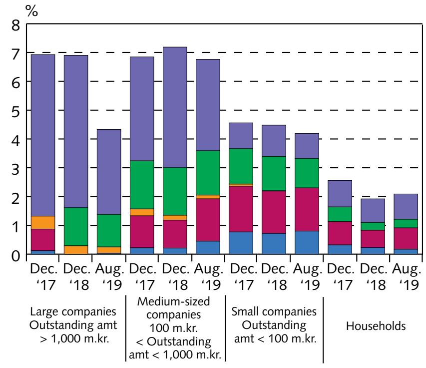
At the autumn legislative session, the Minister of Social Affairs and Children plans to introduce a bill of legislation splitting up the Housing Financing Fund. Under the bill, the financial administration of the HFF's current balance sheet will be transferred to a separate fund, and other HFF activities will be merged with the Iceland Construction Authority to form a new housing and construction agency (HMS). The

11. See the definition in the Appendix.

12. A loan is classified as stage 2 if the attendant credit risk has increased significantly since the loan was granted.

Chart III-18

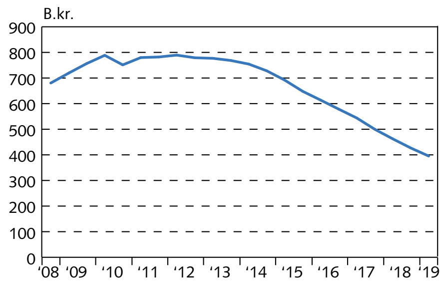
D-SIB: Status of non-performing corporate loans, by claim amount[1]



1. Domestic systemically important banks, parent companies, book value.
Sources: Financial Supervisory Authority, Central Bank of Iceland.

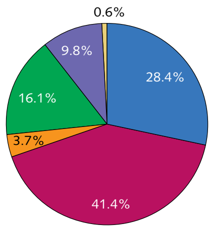
Chart III-19

HFF: Lending[1]



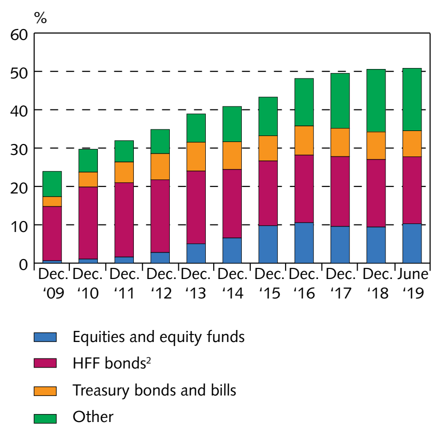
1. Consolidated figures 2014, 2015 and 2019.
Source: Housing Financing Fund.

Chart III-20
Pension funds: Distribution of assets
June 2019[1]



1. Based on preliminary figures.
Source: Central Bank of Iceland.

Chart III-21
Pension funds: Share of electronically registered securities[1]



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

HMS will oversee all matters relating to housing and will implement the authorities' policies in this area.

For the first six months of 2019, the HFF's operating results were negative in the amount of just over 2 b.kr. Net interest income was negative by nearly 1.5 b.kr. during the period, and it is highly likely that interest losses will continue from now on. This is due to imbalances that have developed in recent years as a result of a surge in loan retirement and excess loan payments by borrowers, including payments from borrowers using third-pillar pension savings to pay down mortgage debt. In the first six months of 2019, loan retirement and excess payments by HFF customers totalled 32 b.kr. By mid-2019, the Fund's non-loan assets (including liquid assets) totalled 333 b.kr., or about 45% of total assets. Of that amount, liquid assets totalled 89 b.kr., or 12% of total assets. Because of these large-scale payments, the HFF's loan portfolio is steadily shrinking. In fact, it has contracted by about half since 2012, when the Fund stopped most of its mortgage lending to individuals. A separate leasing company owned by the HFF, Leigufélagið Bríet ehf., commenced operation on 1 March 2019. To date, the Fund has sold 251 properties to Bríet. As of June 2019, the Fund's operating expenses had risen by 23% year-on-year; the increase is due, among other things, to the cost of operating investment assets (i.e., Bríet), increased activity because of the housing benefits programme, and new tasks relating to housing affairs.

In response to the loan retirement and extra loan payments, the Fund has invested in non-loan assets, mainly asset-backed indexed bonds with a payment profile similar to that of its funding. The prepayment risk on those assets is also significant; for instance, the HFF has made an agreement with Arion Bank to buy 50 b.kr. in indexed mortgage loans this October, against which Arion will pay off 60 b.kr. in covered bonds held by the Fund. The HFF's equity ratio was 8.6% at the end of June, whereas its long-term goal is to maintain an equity ratio over 5.0%.

Pension funds continue to add foreign assets to their portfolios

By end-June, the pension funds' total assets had grown to an all-time high of 1⅔ times GDP, an increase in real terms of 11% or 816 b.kr., in a twelve-month period.

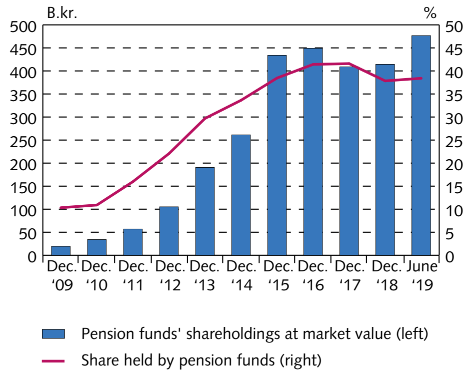
The funds are still large investors in the domestic securities market, holding about half of issued securities. The largest single asset class in their portfolio is domestic marketable bonds and bills, which account for roughly ⅖ of total assets. Of that portion, about 80% are indexed marketable bonds. In recent years, the pension funds have stepped up their investments in real estate-related bonds, specifically to include covered bonds issued by deposit institutions and specialised investments in real estate companies. The share of domestically listed equities held by pension funds increased in H1/2019, after having fallen in 2018. Listed and unlisted domestic shares and unit shares account for about 16% of the pension funds' assets, a slight increase since the turn of the year.

At the end of June, foreign assets – nearly all of them equities and unit shares – constituted 28% of their total assets. This percentage could conceivably rise in coming years because of the limited investment options available in Iceland. The funds have been stepping up their foreign investments so as to diversify risk, and foreign assets are their second-largest asset class. Their net foreign currency purchases amounted to 67 b.kr. in H1/2019, as opposed to 58 b.kr. in H1/2018. In the first seven months of 2019, they invested 49 b.kr. in foreign securities, about 5 b.kr. less than over the same period in 2018.

As of end-June 2019, loans to fund members accounted for just under 10% of the pension funds' total assets. In all, the pension funds now hold 466 b.kr. in outstanding loans to fund members, an increase of 20% in real terms over the past twelve months. In 2018, several pension funds lowered their maximum loan-to-value ratios and imposed more stringent requirements for supplemental loans. After these changes were implemented, the first signs could be seen of slowing growth in lending to fund members. Therefor the quality of new loans may have increased.

Chart III-22

Pension funds: Electronically registered equity securities[1]



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

Shadow banks' assets on the rise again

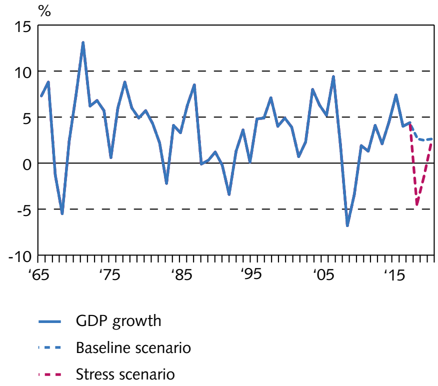
Shadow banks' assets increased by nearly 90 b.kr. in H1/2019. This is a turnaround relative to 2018, when shadow bank assets contracted by over 30 b.kr. over the course of the year.[13] A third of the increase in 2019 is due to an increase in specialised investment firms' assets. These companies are financed for the most part by pension funds. Bond fund assets have grown by just over 25 b.kr., partly in response to a 13 b.kr. increase in the funds' holdings in bonds issued by deposit institutions. In addition, the funds (mainly money market funds) have somewhat increased their deposits with domestic deposit institutions. As a result, the links between the banking system and the shadow banking system have grown stronger, in line with the increase in banking system debt to shadow banks.

13. Excluding the old banks' holding companies and the Central Bank of Iceland Holding Company (ESÍ), which are nevertheless defined as shadow banks.

IV Central Bank stress test 2019

The Central Bank of Iceland's annual stress test is intended to assess the banks' resilience to hypothetical adverse scenarios. The stress scenario that is constructed covers a three-year horizon, and this year it assumes, among other things, a strong contraction in exports, a deterioration in terms of trade, and higher financing costs for domestic banks and companies. It also entails a sizeable depreciation of the króna, a spike in inflation, rising interest rates, reduced investment, a contraction in disposable income, and elevated unemployment. GDP contracts by 5.9% in the first two years combined. The stress test extends to domestic systemically important banks, and the results indicate that their combined common equity Tier 1 capital ratio could fall by some 4.3 percentage points from the initial position under this simulated stress scenario.

Chart IV-1
Developments in GDP growth



Source: Central Bank of Iceland (QMM results Nov 2018).

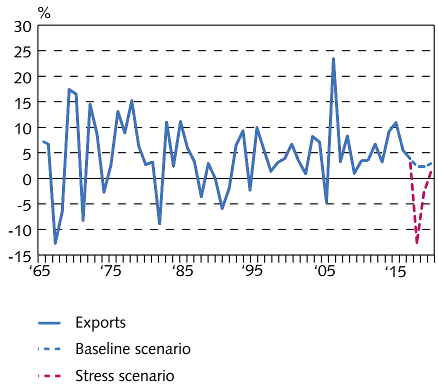
Macroprudential stress test

The Central Bank stress test evaluates the banking system's capacity to withstand severe economic shocks. It is defined as a macroprudential stress test with a cyclical stress scenario. The 2019 stress test included the domestic systemically important banks (D-SIB),[1] which hold a combined 96.5% of total deposit institution assets.

The stress scenario is based on an analysis of risk factors and an assessment of the financial cycle position and the state of the economy at the time the scenario is designed, so that the shock portrayed in the stress scenario is more pronounced when a strong upward cycle is underway and asset prices are high.[2] The impact of the stress scenario on the position of the banks is then evaluated. The Central Bank's results are based on statistical models, discussions with the banks concerning the impact of the scenarios, and Bank staff assessments. The banks themselves also evaluate the impact of the scenario using their own methodologies, albeit within guidelines provided by the Central Bank.

The stress test provides useful information for macroprudential policy formation and can be used in general risk analysis and financial market supervision, in addition to providing an important foundation for discussion. A more detailed description of the Central Bank stress test and the methodology used can be found in the report entitled *The Central Bank of Iceland's approach to stress testing the Icelandic banking system*.[3]

Chart IV-2
Developments in exports[1]

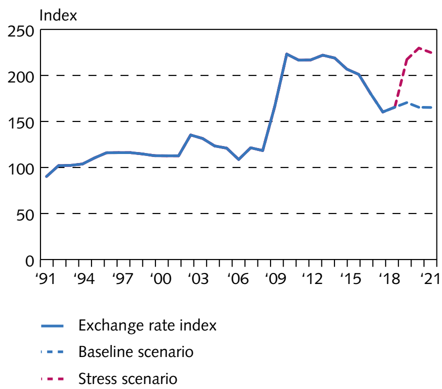


1. Real change.
Source: Central Bank of Iceland (QMM results Nov 2018).

Baseline scenario 2019

The baseline scenario is based on assumptions concerning economic developments in the next three years, in line with the Bank's baseline

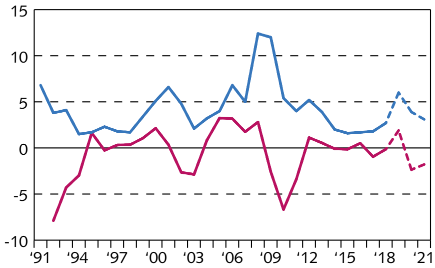
Chart IV-3
Developments in the exchange rate index



Source: Central Bank of Iceland (QMM results Nov 2018).

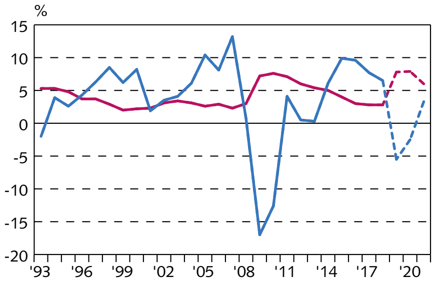
1. Arion Bank, Íslandsbanki, and Landsbankinn.
2. The 2019 stress testing process began in November 2018 with scenario design. Factors posing a risk to financial stability could therefore have changed in the interim.
3. Kaloinen, E. et al. (2017), The Central Bank of Iceland's approach to stress testing the Icelandic banking system. *Working Paper* no. 75. Central Bank of Iceland. https://www.cb.is/publications/publications/publication/2017/09/28/Working-Paper-no.-75-The-Central-Bank-of-Icelands-approach-to-stress-testing-the-Icelandic-banking-system/

Chart IV-4
Developments in inflation and interest rates[1]



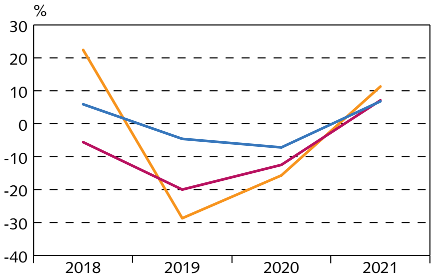
1. Annual average inflation and percentage change in short-term interest rates.
Source: Central Bank of Iceland (QMM results from Nov 2018).

Chart IV-5
Developments in real disposable income and unemployment[1]



1. Real change year-on-year for income; annual average unemployment.
Source: Central Bank of Iceland (QMM results Nov 2018).

Chart IV-6
Developments in asset prices, stress scenario[1]



1. Change from year-end to year-end.
Source: Central Bank of Iceland.

forecast as published in *Monetary Bulletin* 2018/4. The policy interest rate is held constant from year-end 2019 onwards, however.

Stress scenario 2019

The stress scenario is based on the Central Bank's risk analysis and assessment of the financial cycle position and the state of the economy at the beginning of the stress testing process. However, it is a simulated scenario and does not entail the Bank's forecast of expected developments in macroeconomic variables or other economic variables.

In the stress scenario, exports contract …
The 2019 stress scenario assumes a contraction in world trade owing to factors such as mounting trade-related tensions, higher tariffs, and increased cross-border trade barriers. Globally, GDP growth is much weaker and financial conditions deteriorate. Iceland's main trading partners suffer an economic contraction.

Terms of trade deteriorate markedly. The prices of Iceland's most important export products fall – aluminium by 35% and marine products by 25% – while oil prices rise 10%. Tourism-generated export revenues fall by 30% year-on-year in the first year of the scenario (2019) and by another 5% in the second year. As a result, revenues from goods and services exports contract sharply. The year-on-year contraction in total exports measures 13% in the first year and 3% in the second.

… the króna depreciates, and inflation rises
The economic outlook for Iceland deteriorates, and Iceland's sovereign credit ratings are downgraded. Capital outflows occur in several asset classes, including securities, although outflows of deposits are not assumed. The trade-weighted exchange rate index rises by 30% in the first year, owing to reduced tourism revenues and increased capital outflows. Inflation rises thereafter, although exchange rate pass-through is mitigated by lower real estate prices. Short-term interest rates rise by 1.9 percentage points in the first year and then fall markedly in the second year.

Financing costs rise, as an additional premium (over and above the baseline scenario) on private sector bonds and the banks' funding is assumed, both in Iceland and abroad. Interest premia charged to Icelandic banks and firms rise by 250 basis points for domestic funding and about 500 points for external funding.[4] Icelandic Treasury bonds bear a premium of 200 points above the general interest rate level; however, it is assumed that premia on the Treasury's foreign bonds will, on average, be unchanged.

Asset prices fall
Asset prices fall steeply in the stress scenario, including a 30% drop in domestic stock prices, an 11% decline in the house price index, and a

4. An additional premium (over and above Treasury bond yields) that is used in the baseline scenario for the banks and the private sector.

Table IV-1 Development of key variables in the 2019 stress test[1, 2]

	Baseline scenario			*Stress scenario*		
	2019	*2020*	*2021*	*2019*	*2020*	*2021*
Private consumption	3.9	2.8	2.5	-2.5	-5.8	2.6
Public consumption	2.0	2.1	2.5	2.0	2.1	2.5
Gross capital formation	8.5	5.3	1.0	-2.4	-8.4	-0.8
Exports of goods and services	2.3	2.3	2.9	-12.6	-2.8	1.2
Imports of goods and services	6.2	3.8	2.0	-6.5	-8.6	0.7
GDP (output growth)	2.7	2.5	2.6	-4.5	-1.5	2.0
Terms of trade for goods and services	-0.1	0.6	0.3	-8.5	-1.6	-0.3
Unemployment, Statistics Iceland labour force survey (annual average, % of labour force)	3.0	3.1	3.3	7.8	7.9	6.0
Real disposable income	5.1	2.0	2.1	-5.5	-2.5	3.3
Trade-weighted exchange rate index (TWI)	170	165	165	217	230	225
Inflation (consumer price index, CPI)	3.4	2.7	2.5	6.0	3.9	3.1
Real exchange rate in terms of CPI	-1.6	3.9	0.8	-21.2	-3.1	4.3
Change in Icelandic short-term interest rates (percentage points)[3]	0.0	0.0	0.0	1.9	-2.4	-1.8

1. Change from previous year (%) unless otherwise specified. 2. Figures for the stress scenario are obtained with QMM-simulation. 3. The change in interest rates in the baseline scenario is based on unchanged interest rates from year-end 2018, not the yield curve in the forecast from *Monetary Bulleting* 2018/4. In the stress scenario, the development of interest rates is based on the Taylor rule..

Source: Central Bank of Iceland.

40% in the commercial property price index between end-2018 and end-2020.

Unemployment rises and GDP contractsrs

In the stress scenario, real estate firms, construction companies, and tourism operators suffer a shock due to reduced activity, higher interest rates and interest premia, and lower real estate prices. The impact spreads to the services sector more generally and to other segments of the economy. Unemployment rises, real disposable income declines, and private consumption contracts. GDP shrinks by 4.5% in the first year and 1.5% in the second year. Developments in key indicators under the baseline and stress scenarios can be seen in Table IV-1

Results

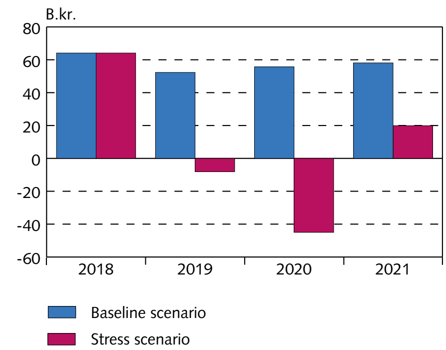
The Central Bank and the three commercial banks came to broadly similar conclusions about developments in the capital ratio under the stress scenario overall. On the other hand, there were differences in the banks' assessment of individual factors, such as developments in net interest income, impairment, and risk-weighted assets. It should be noted that the stress test results are sensitive to changes in assumptions and methodologies, and balance sheet composition and the initial quality of the banks' assets are important factors as well. The shock described in the stress scenario represents one specified set of developments. If actual developments diverge from this, the banks' performance and capital ratio will differ from the results indicated here.

Assumptions underlying the stress test

For the purposes of the stress test, the initial position is based on the banks' consolidated annual accounts as of end-2018. The stress scenario assumes that dividends will be paid out in H1/2019, but it does not assume any further dividend payments over the stress test horizon. It is assumed that the banks will satisfy liquidity, stable funding,

Chart IV-7

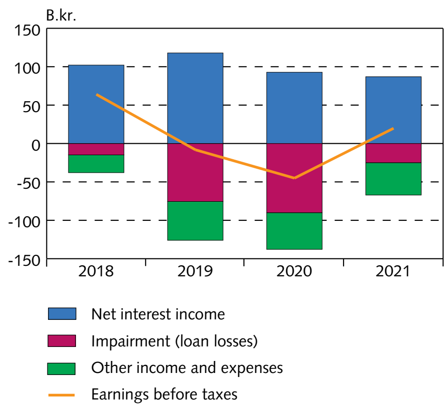
Earnings before taxes, Central Bank estimates



Sources: Arion Bank, Íslandsbanki, Landsbankinn, Central Bank of Iceland.

Chart IV-8

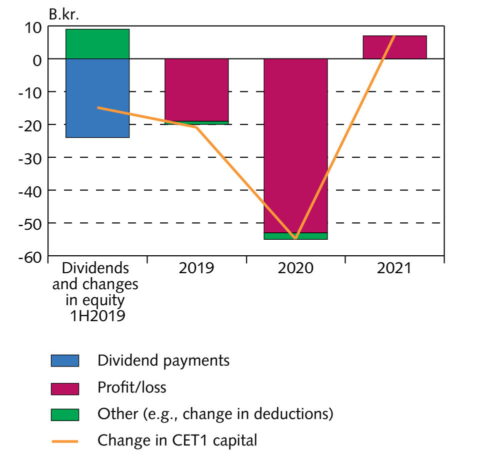
Earnings before taxes and contribution of various components, Central Bank estimates, stress scenario



Sources: Arion Bank, Íslandsbanki, Landsbankinn, Central Bank of Iceland.

Chart IV-9

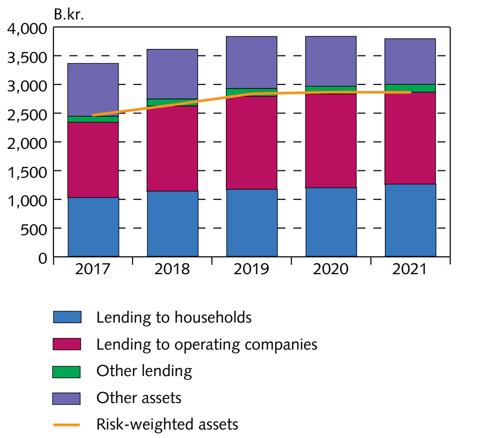
Developments in CET1 capital, Central Bank estimates, stress scenario



Sources: Arion Bank, Íslandsbanki, Landsbankinn, Central Bank of Iceland.

Chart IV-10

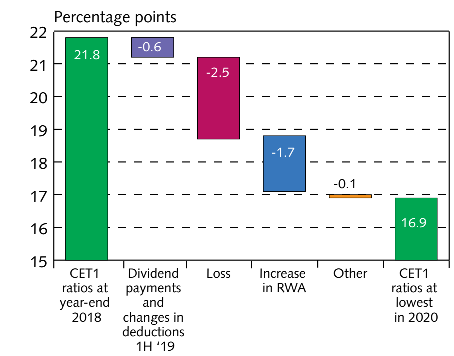
Developments in loans, other assets, and risk-weighted assets, Central Bank estimates, stress scenario



Sources: Arion Bank, Íslandsbanki, Landsbankinn, Central Bank of Iceland.

Chart IV-11

Decrease in three largest banks' CET1 ratios from 2018 to its minimum in 2020 in the stress scenario, Central Bank estimates



Sources: Arion Bank, Íslandsbanki, Landsbankinn, Central Bank of Iceland.

and foreign exchange balance requirements for the entire period. The test does not assume any changes in the banks' strategies apart from the discontinuation of dividend payments after H1/2019. Potential changes in strategy or other mitigating measures by the banks could offset the impact of an actual shock on their balance sheets and profit and loss accounts.

The banks' performance under the baseline scenario is in line with their business plans

The Central Bank's results for the baseline scenario are in line with the banks' business plans as of early 2019. That said, economic conditions have changed to a degree since then, and the results do not reflect the current state of the economy in all particulars.

Operating losses in the first two years of the stress scenario

In the stress scenario, the banks will generate operating losses for the first two years. However, net interest income rises during the first year of the scenario, fuelled by rising inflation and interest rates, but falls again when inflation starts easing and interest rates decline. Other income – i.e., net commission and fee income and other net income from financial activities – contracts as a result of reduced activity and falling asset prices. The loss due to falling securities prices is small in comparison with loan impairment, however, as the weight of marketable securities in the banks' balance sheets is limited.

Loan impairment increases in the stress scenario, in the wake of the economic contraction. Reduced demand adversely affects businesses' revenues, thereby affecting their debt service capacity, and elevated unemployment and reduced disposable income reduces individuals' debt service capacity. The ratio of impairment to total lending is about 6.4% for the three years combined. According to IFRS9, the financial reporting standard that took effect in 2018, impairment should be based on expected losses and not incurred losses. As a result, impairment must be charged earlier than according to the previous standard. Experience of IFRS9 is still limited, and the actual timing of impairment remains unclear. The timing of impairment differed somewhat from bank to bank.

Capital base contracts, while risk-weighted assets rise

At the end of 2018, the three banks' common Tier 1 capital (CET1) amounted to roughly 577 b.kr. Under the stress scenario, it falls by a combined 91 b.kr. from end-2018 until it bottoms out in 2020. The contraction in capital is due for the most part to operating losses, particularly in the second year of the stress scenario, although the H1/2019 dividend payments are a factor as well. The three banks' losses over the first two years of the stress scenario amount to a combined 73 b.kr. Estimated H1/2018 dividend payments and changes in deductions amount to a combined 15 b.kr.[5] Other factors reduce capital by an additional 3 b.kr.

5. In calculating its capital base at the end of 2018, Arion Bank had already deducted the planned dividend (just over 9 b.kr.) paid out in H1/2019.

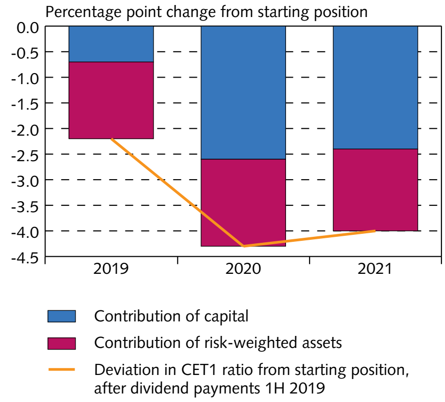
The risk-weighted assets rise by 7% in the first year of the stress scenario. The rise stems primarily from an increase in the book value of loans, which in turn is attributable to inflation and the depreciation of the króna, even though write-downs increase and reduced demand cuts into credit growth. In the stress scenario, the value of corporate loans rises proportionally more than the value of loans to individuals, as about 30% of the banks' corporate loans were denominated in foreign currencies at the end of 2018. Such loans increase substantially because of the 30% rise in the exchange rate index in the first year. Corporate loans generally have a higher risk weight than loans to individuals, and when they increase as a proportion of the loan portfolio, the average risk weight in the risk-weighted assets rise as well. By the end of the stress scenario, the risk-weighted assets are about 8% higher than at the outset. It should be noted that the banks' own assessment of developments in the risk-weighted assets varied somewhat. The Central Bank's assessment of developments in the banks' risk-weighted assets and assets can be seen in Chart IV-10.

The CET1 ratio falls by 4.3 percentage points due to the impact of the stress scenario

The reduction in the three banks' CET1 ratio relative to end-2018 is greatest in the second year of the scenario, at a combined 4.9 percentage points. Of that amount, 0.6 percentage points are due to dividend payments and changes in capital in H1/2019. Roughly 4.3 percentage points are due to the impact of the stress scenario: 2.5 percentage points because of losses, 1.7 percentage points due to the increase in the risk-weighted assets, and about 0.1 percentage points due to other factors. At the end of 2018, the banks' combined CET1 ratio was 21.8%, and individual banks' ratios ranged from 20.3% to 22.6%. Under the stress scenario, the CET1 ratio bottoms out at 16.9% in the second year.

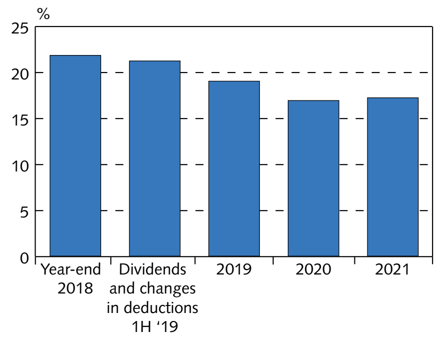
The banks' combined leverage ratio could fall by 3.1 percentage points from end-2018 to the trough in the second year of the stress scenario. Of this amount, 0.4 percentage points is due to H1/2019 dividend payments and 2.7 percentage points to the impact of the stress scenario. The reduction because of the impact of the stress scenario is attributable to a contraction in capital and an increase in exposure measure, which in turn stems from developments in the banks' balance sheets in the stress scenario. At the end of 2018, the banks' combined leverage ratio was 15%, with individual banks' ratios ranging from 14.2% to 16.1%.

Chart IV-12
Impact of stress scenario on CET1 ratio, cumulative contribution of components, Central Bank estimates



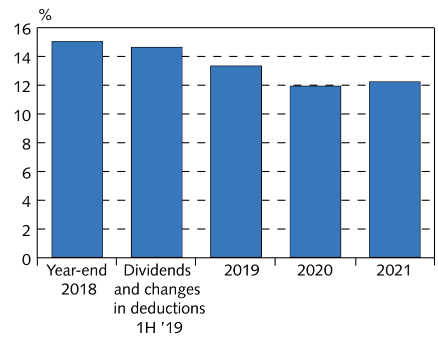
Sources: Arion Bank, Íslandsbanki, Landsbankinn, Central Bank of Iceland.

Chart IV-13
Three largest banks' CET1 ratios, Central Bank estimates, stress scenario



Sources: Arion Bank, Íslandsbanki, Landsbankinn, Central Bank of Iceland.

Chart IV-14
Three largest banks' combined leverage ratio, Central Bank estimate, stress scenario

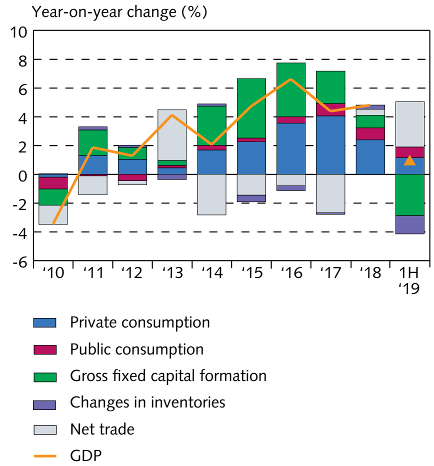


Sources: Arion Bank, Íslandsbanki, Landsbankinn, Central Bank of Iceland.

Appendix I
Charts

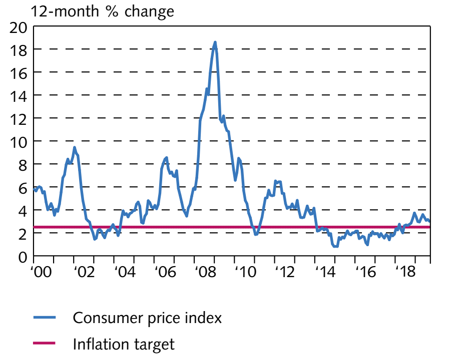
I Macroeconomic environment

Chart I-1
Output growth[1]



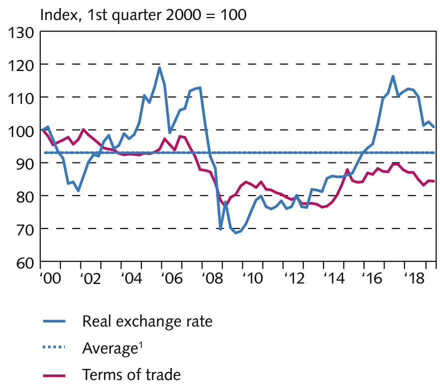
1. Contribution of individual components to output growth.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-2
Inflation



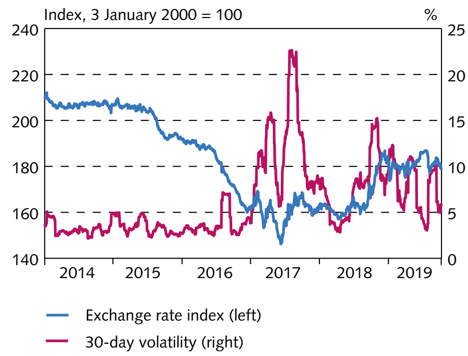
Sources: Statistics Iceland, Central Bank of Iceland.

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.

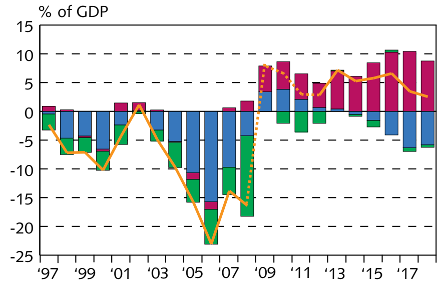
Chart I-4
Exchange rate of the króna[1]



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[1]



Balance on goods

Balance on services

Balance on income

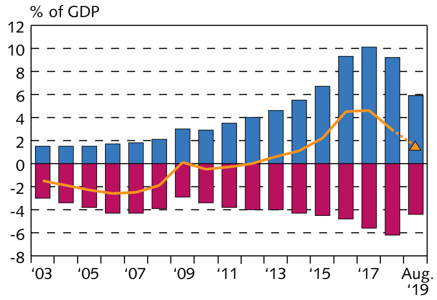
Current account balance

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[1]



Card use, non-residents

Card use, residents

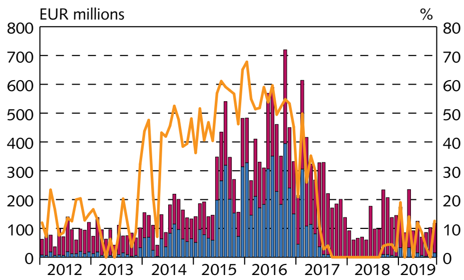
Payment card turnover balance

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



CBI turnover (purchases and sales) (left)

Other turnover (left)

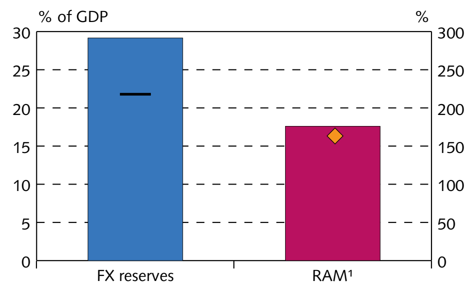
Central Bank turnover as % of total turnover (right)

Source: Central Bank of Iceland.

Chart I-8

Central Bank reserve adequacy

Position as of end Q2 2019



% of GDP (left)

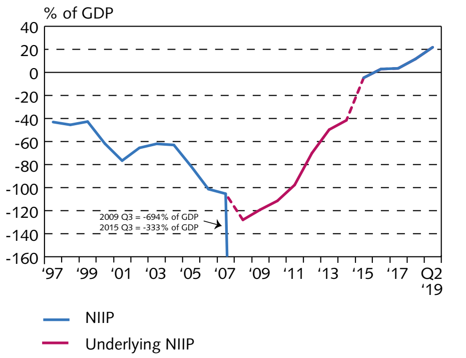
FX reserves financed domestically (left)

Ratio of FX reserves to reserve adequacy metric (right)

1. IMF reserve adequacy metric (RAM).

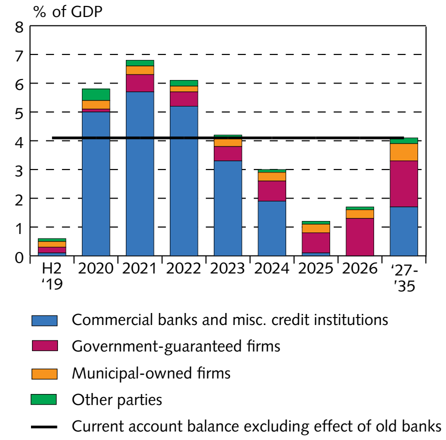
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-9
Net international investment position[1]



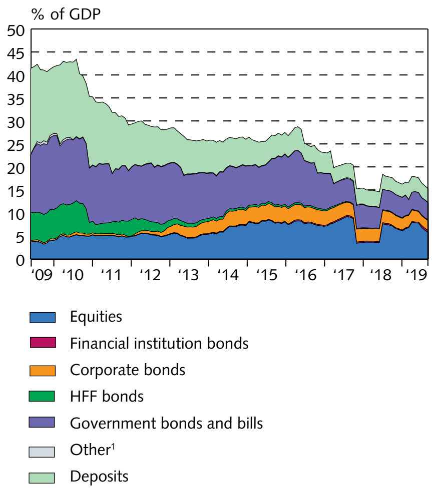
1. Based on underlying position from 2008 through end-2015; i.e., adjusted for the effects of settling the failed banks' estates and assuming equal distribution of assets to general creditors. At the end of 2015, the estates of the failed financial institutions reached composition agreements entailing 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.

Chart I-10
Repayment profile of long-term foreign loans, excluding the Treasury[1]



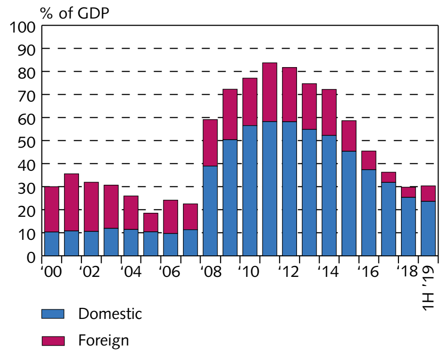
1. Foreign long-term loans based on position as of end Q2 2019.
Sources: Statistics Iceland, Central Bank of Iceland.

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



1. Excluding CBI certificate of deposit.
Sources: Nasdaq Iceland, Statistics Iceland, Central Bank of Iceland.

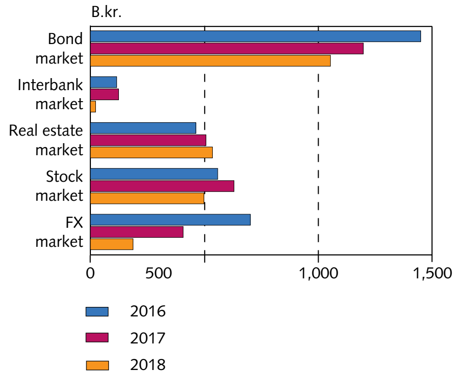
Chart I-12
Treasury debt



Sources: Statistics Iceland, Government Debt Management.

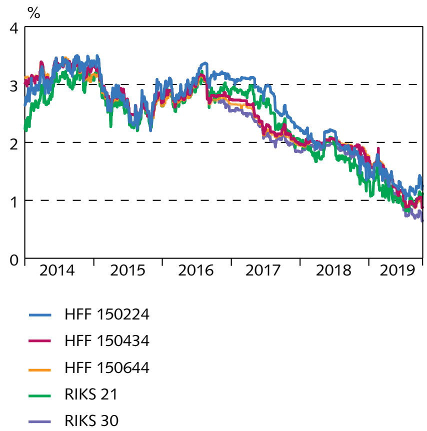
II Financial markets

Chart II-1
Domestic financial market turnover



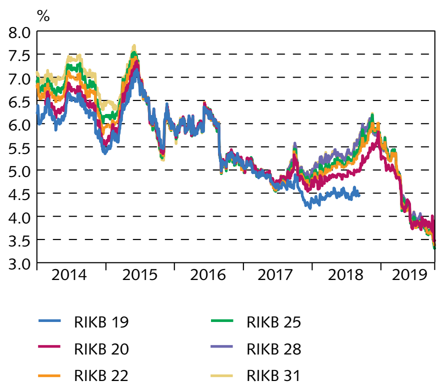
Sources: Nasdaq Iceland, Registers Iceland, Central Bank of Iceland.

Chart II-2
Indexed bond yields



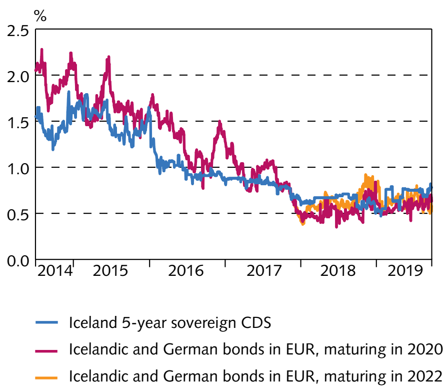
Source: Nasdaq Iceland.

Chart II-3
Nominal Treasury bond yields



Source: Nasdaq Iceland.

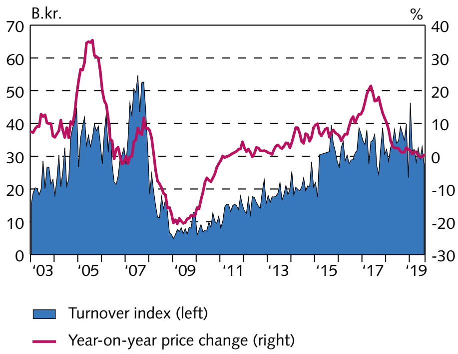
Chart II-4
Government bond spreads



Sources: Bloomberg, Thomson Reuters.

Chart II-5

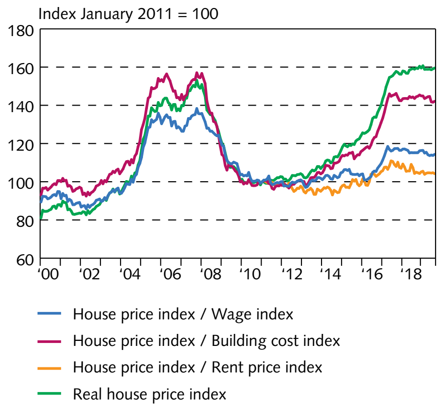
Real house price increase and turnover in capital area[1]



1. Year-on-year change in the capital city area house price index, deflated by the consumer price index. Turnover in the capital area according to the Commissioner's office. March-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

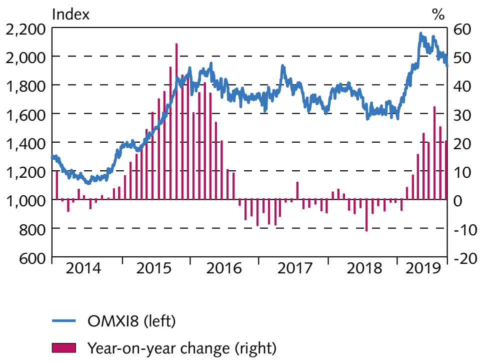
Capital area house prices and their determinants[1]



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

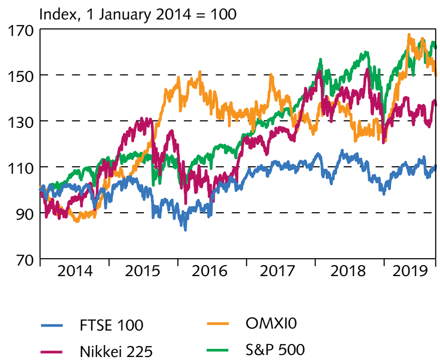
OMXI8 share price index



Source: Nasdaq Ísland.

Chart II-8

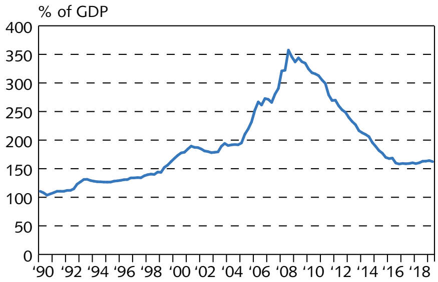
Share price indices



Source: Thomson Reuters.

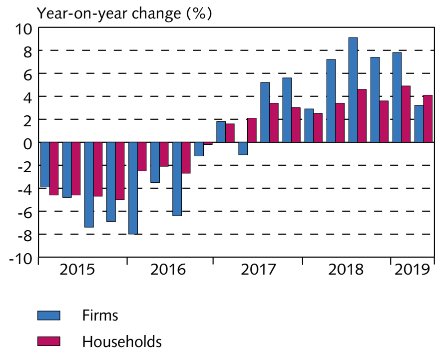
III Households and businesses

Chart III-1
Credit-to-GDP ratio[1]



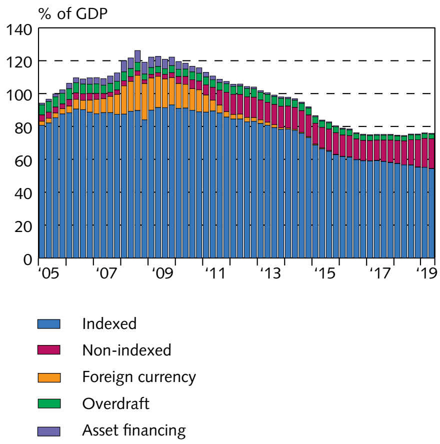
1. Credit to households and nonfinancial firms, excluding holding companies, relative to gross domestic product. Retroactive revision of national accounts causes a change since the last publishing.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-2
Real credit growth to households and firms[1]



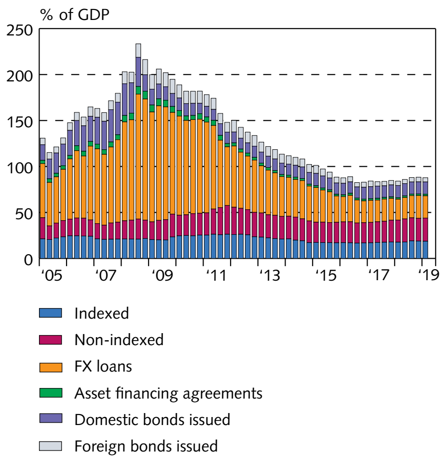
1. Year-on-year change in total credit to households and non-financial firms, excluding holding companies, deflated with the consumer price index. Claim value.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-3
Households: Debt relative to GDP



Sources: Statistics Iceland, Central Bank of Iceland.

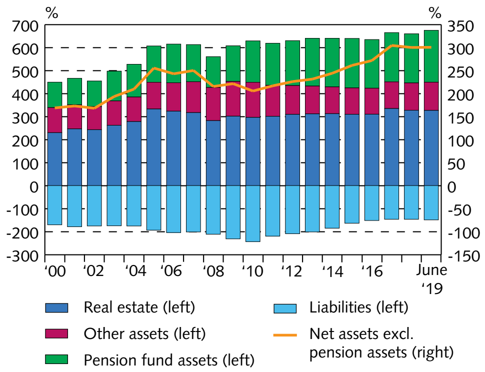
Chart III-4
Companies: Debt relative to GDP[1]



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

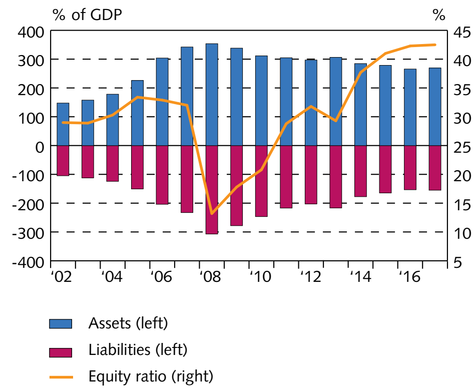
Households: Assets and liabilities relative to disposable income[1]



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

Chart III-6

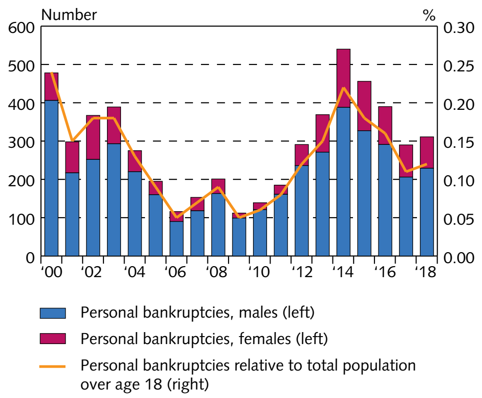
Companies: Assets and liabilities relative to GDP and equity ratio[1]



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

Chart III-7

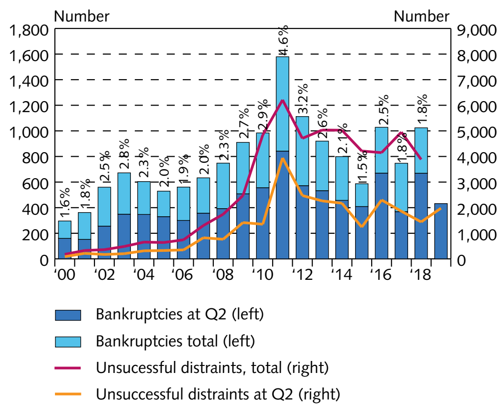
Individuals: Personal bankruptcies[1]



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

Chart III-8

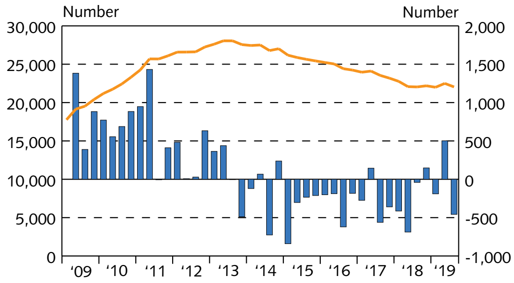
Companies: Bankruptcies and unsuccessful distraint actions[1]



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

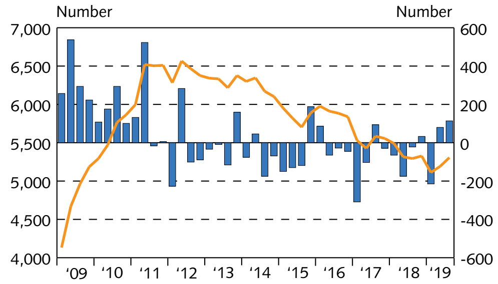
Individuals: Number on default register



Source: CreditInfo.

Chart III-10

Companies: Number on default register

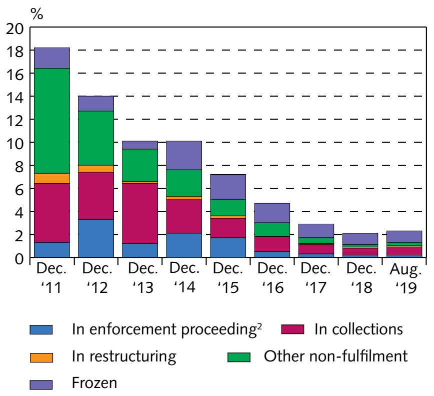


Source: CreditInfo.

Chart III-11

Households: Non-performing loans from D-SIBs and the HFF[1]

Cross-default method

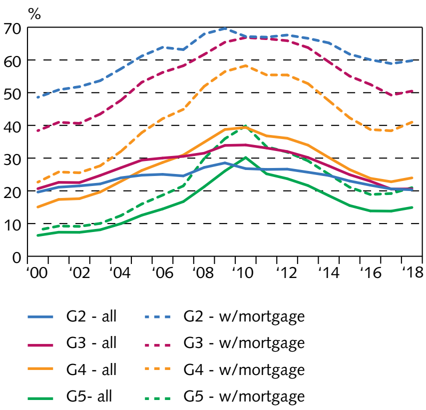


1. Domestic systemically important banks, parent companies, book value. 2. The share of loans in enforcement proceedings and collections declined in December 2011 because the HFF did not send out dunning letters or forced sale requests in the latter half of the month.
Source: Financial Supervisory Authority.

Chart III-12

Share of taxpayers owing more than 300% of disposable income[1]

By income group and debtor type

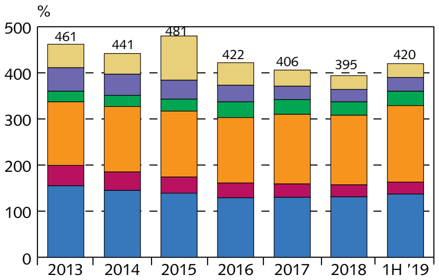


1. The broken lines show the share of taxpayers with mortgage debt whose total debt exceeds 300% of their disposable income. The lowest-income group, G1, is not shown.
Sources: Statistics Iceland, Central Bank of Iceland.

IV The financial system

Chart IV-1

Financial system: Assets relative to GDP[1]

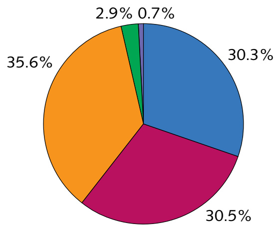


1. Parent companies. 2. Failed financial institutions that have undergone composition are included with other financial institutions as of the time their composition agreements were approved. The Central Bank of Iceland Holding Company ehf. (ESÍ) is also included with other financial institutions from its establishment in December 2009 until its dissolution in February 2019.
Source: Central Bank of Iceland.

Chart IV-2

DMBs: Share of total assets[1]

June 2019

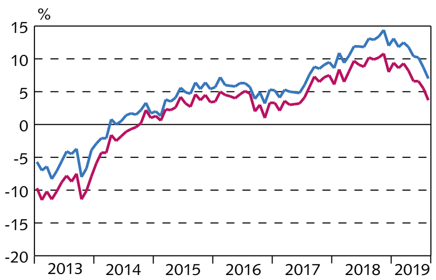


1.Parent companies.
Source: Central Bank of Iceland.

V Systemically important banks and deposit institutions – lending

Chart V-1

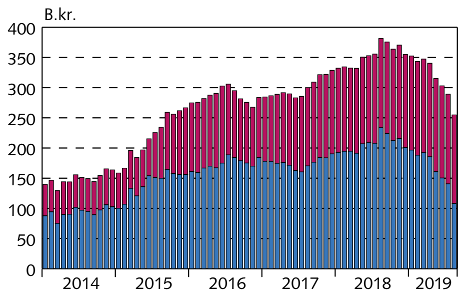
D-SIB: Lending to households and companies[1]



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[1]

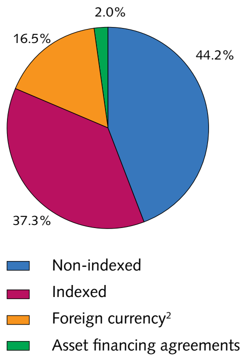


1. New loans net of prepayments and final payments. 12-month moving total. Prepayments are payments in excess of contractual payments.

Chart V-3

DMBs: Distribution of loans by type[1]

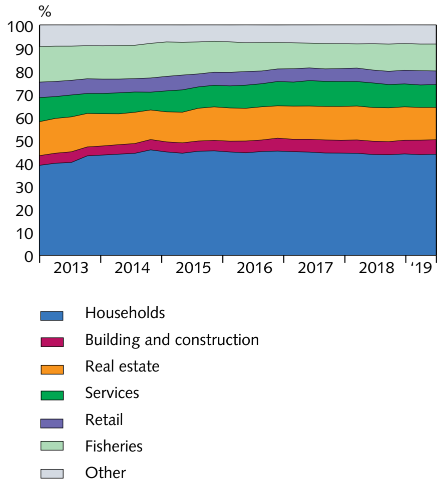
In June 2019



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

Chart V-4

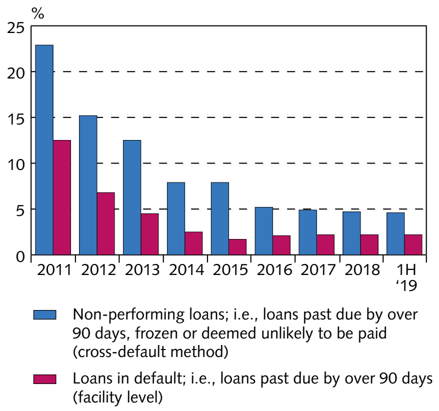
D-SIB: Lending classified by borrower[1]



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

Chart V-5

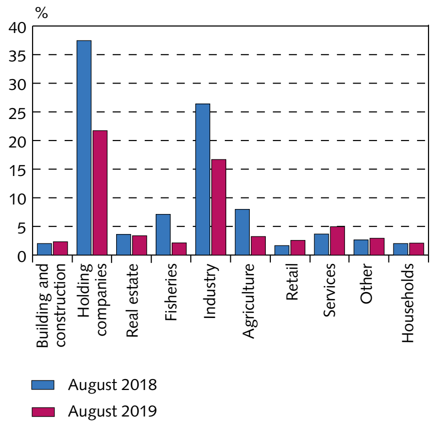
D-SIB: Default ratios[1]



1. 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

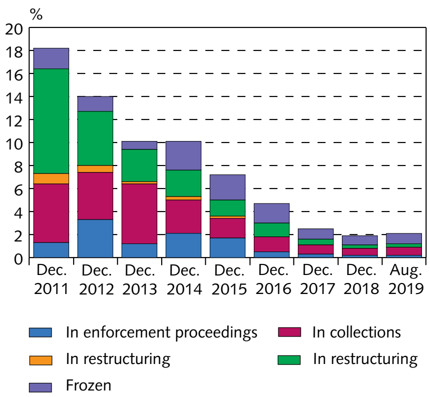
D-SIB: Non-performing loan ratios[1]



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

Chart V-7

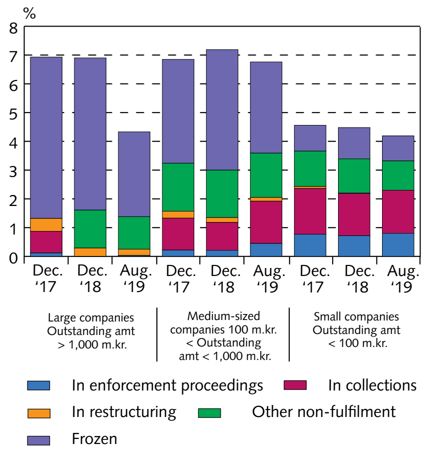
D-SIB: Status of non-performing loans to households[1]



1. Parent companies, book value.
Source: Financial Supervisory Authority.

Chart V-8

D-SIB: Status of non-performing corporate loans, by claim amount[1]

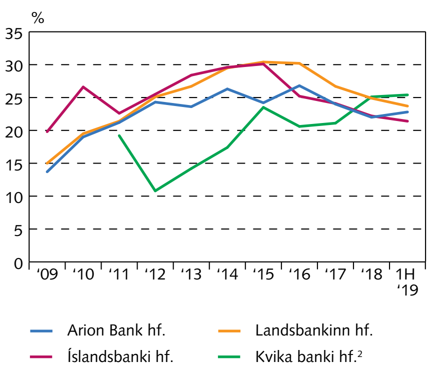


1. Percentage of total loans in each size category. Domestic systemically important banks, parent companies, book value.
Source: Financial Supervisory Authority.

VI Systemically important banks and other deposit intitutions – operations and liquidity

Chart VI-1

Commercial banks: Capital adequacy ratios[1]

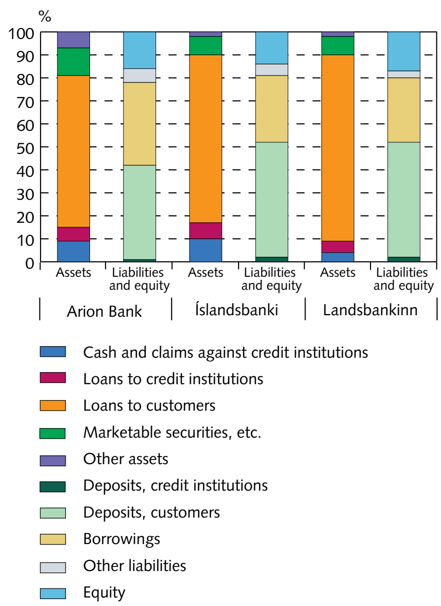


1. Consolidated figures. Capital base as % of risk-weighted base.
2. CAR for MP bank until end of year 2014.
Sources: Commercial banks' financial statements.

Chart VI-2

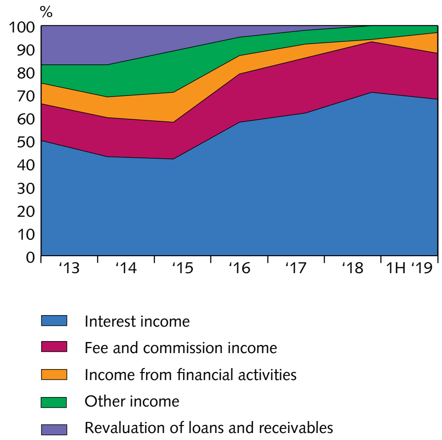
Sources: Commercial banks' financial statements[1]

End of 1H 2019



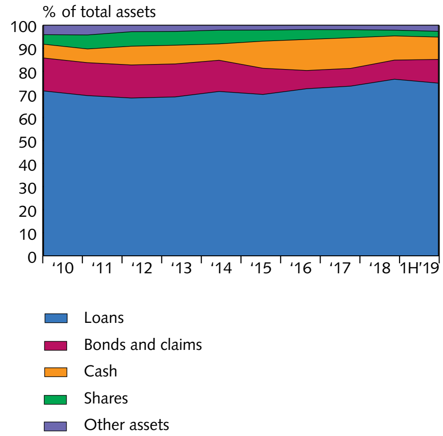
1. Domestic systemically important banks, consolidated accounts.
Sources: Commercial banks' financial statements, Central Bank of Iceland.

Chart VI-3
D-SIB: Operating income[1]



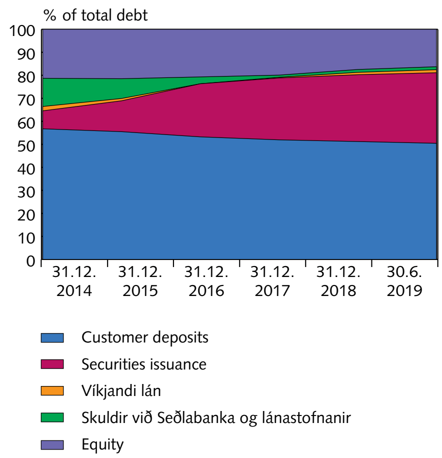
1. Domestic systemically important banks, consolidated figures.
Sources: Commercial banks' financial statements, Central Bank of Iceland.

Chart VI-4
D-SIB: Assets[1]



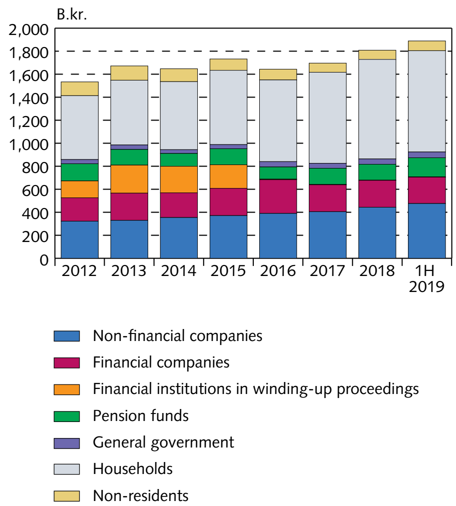
1. Domestic systemically important banks, parent companies.
Source: Central Bank of Iceland.

Chart VI-5
D-SIB: Funding[1]



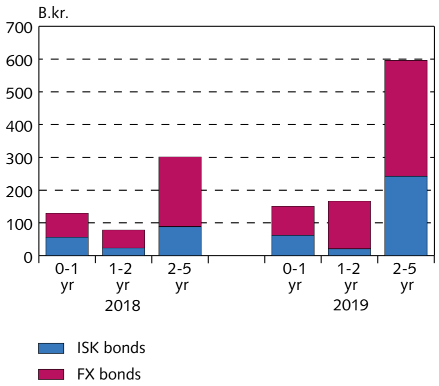
1. Domestic systemically important banks, parent companies. Including pension fund deposits.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VI-6
D-SIB: Depositors[1]



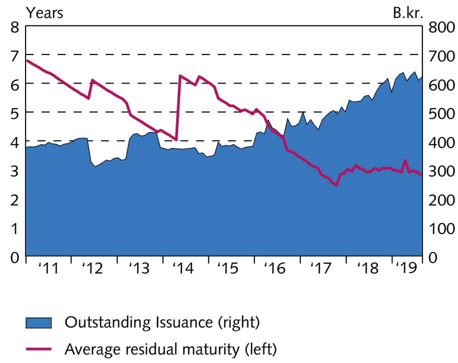
1. Parent companies.
Source: Central Bank of Iceland.

Chart VI-7
D-SIB: Bond maturities[1]



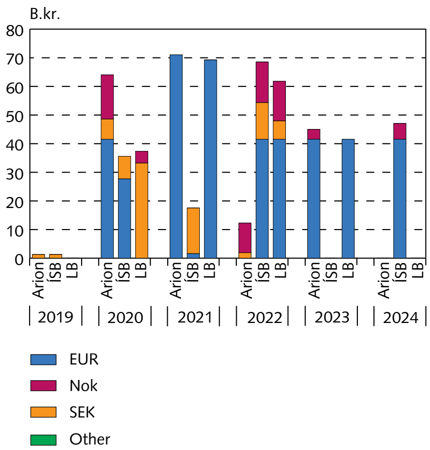
1. Instalments and interest. Parent companies figures. As of end-August each year.
Source: Central Bank of Iceland.

Chart VI-8
D-SIB: Average residual maturity and total issuance of funding in foreign currency



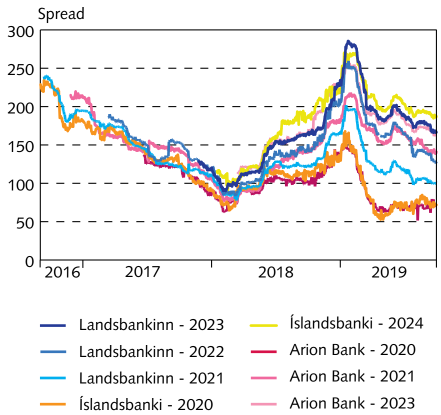
Sources: Nasdaq Iceland, Central Bank of Iceland.

Chart VI-9
D-SIB: Foreign bonds by maturity and currency[1]



1. At 31 August 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, Islandsbanki, and Landsbankinn, in the total amount of 47 B.kr.
Source: Nasdaq Iceland.

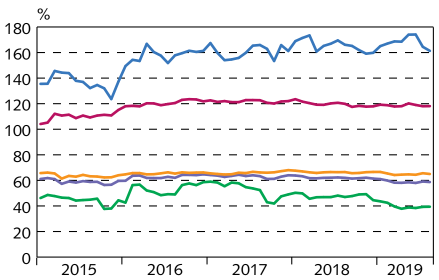
Chart VI-10
D-SIB: Spread on listed foreign bonds, EUR[1]



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

Chart VI-11

D-SIB: NSFR ratio and ratio of core funding to total funding[1]

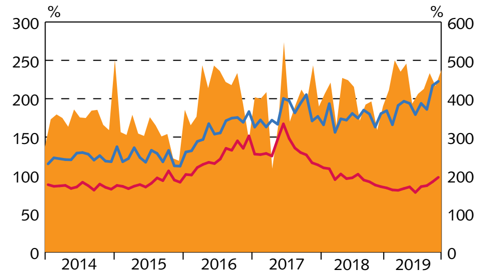


NSFR FX
NSFR Total[2]
Core funding ratio - ISK
Core funding ratio - FX
Core funding ratio - Total

1. 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[1]

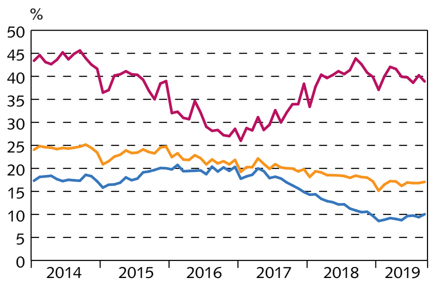


LCR Total (left)
LCR ISK (left)
LCR FX (right)

1. Consolidated figures.
Source: Central Bank of Iceland.

Chart VI-13

DMBs: Ratio of liquid assets to total assets[1]

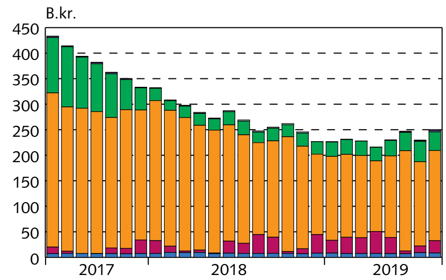


ISK
FX
Total

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

Chart VI-14

D-SIB: Liquid assets[1]



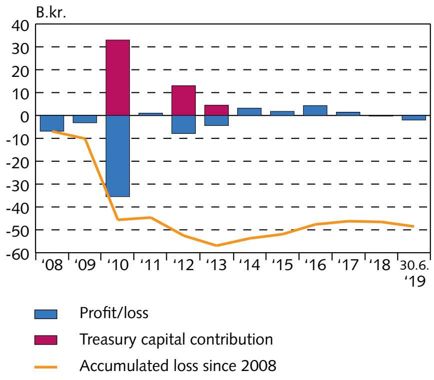
Cash
Sight deposits with cental banks
Term deposits with the Cental Bank of Iceland
Central government assets
Public Sector Entity assets
Regional government assets

1. Liquid assets in Icelandic krónur. 2. Parent companies.
Source: Central Bank of Iceland.

VII Other financial market entities

Chart VII-1

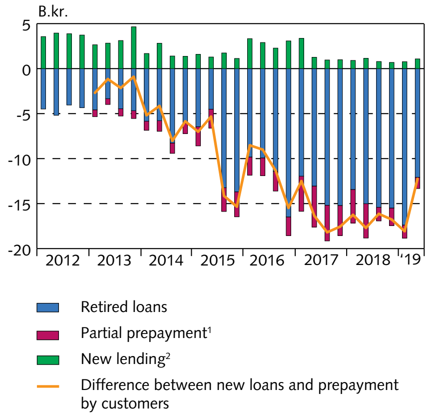
HFF: Profit/loss and Treasury capital contribution



Sources: HFF annual accounts.

Chart VII-2

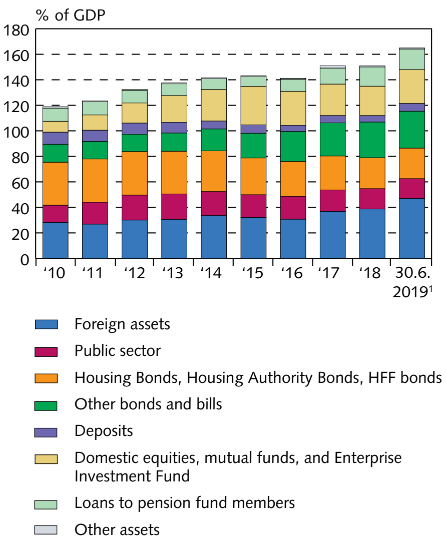
HFF: Prepayment of customer loans and new lending



1. Data for 2012 not available. A mortgage bond issued by the HFF.
2. Excluding the bond issued by the HFF in Q2/2019 to finance investment properties acquired by rental company Leigufélagið Bríet.
Source: Housing Financing Fund.

Chart VII-3

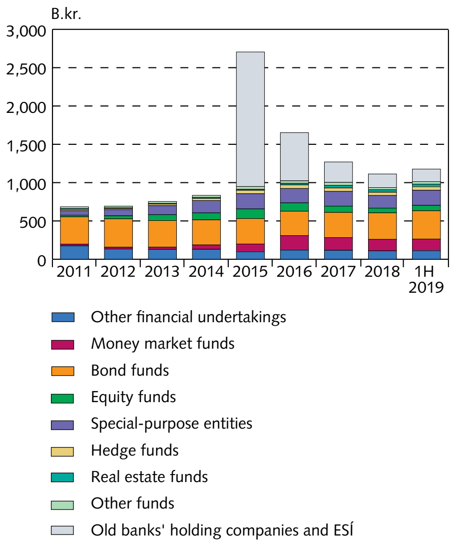
Pension funds: Distribution of assets



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

Chart VII-4

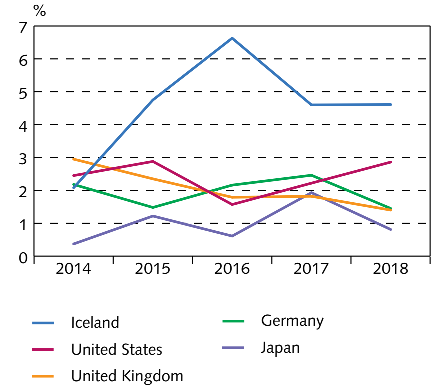
Size of the shadow banking system[1]



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

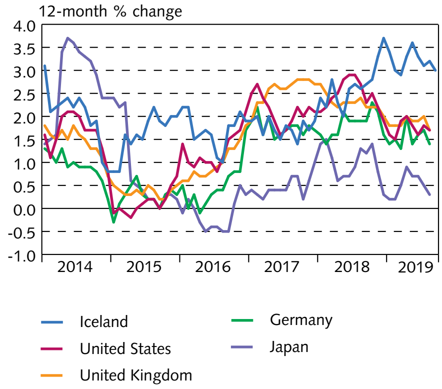
VIII International comparison

Chart VIII-1
Output growth



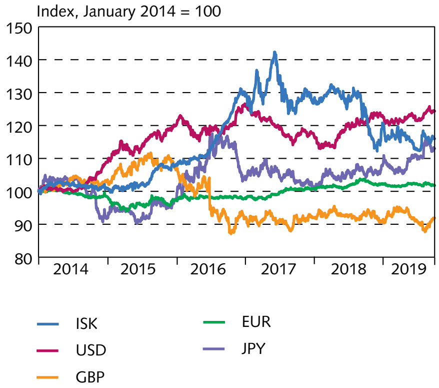
Sources: Statistics Iceland, Thomson Reuters.

Chart VIII-2
Inflation[1]



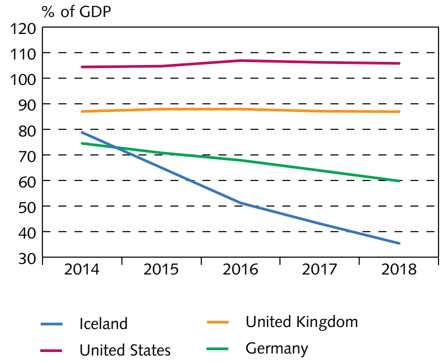
1. Consumer price index.
Sources: Statistics Iceland, Thomson Reuters.

Chart VIII-3
Currency exchange rates[1]



1. BIS nominal indices.
Source: BIS.

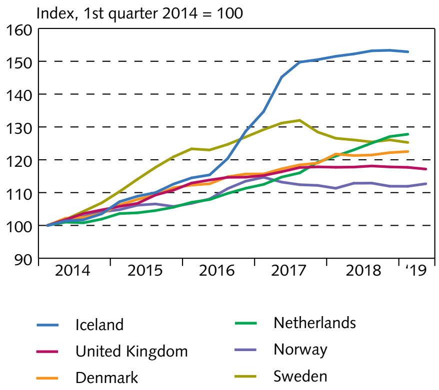
Chart VIII-4
Government debt



Source: IMF.

Chart VIII-5

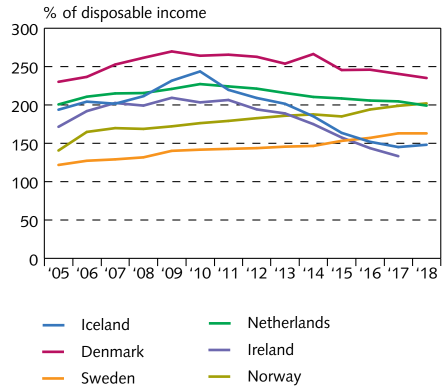
Real estate prices



Source: OECD.

Chart VIII-6

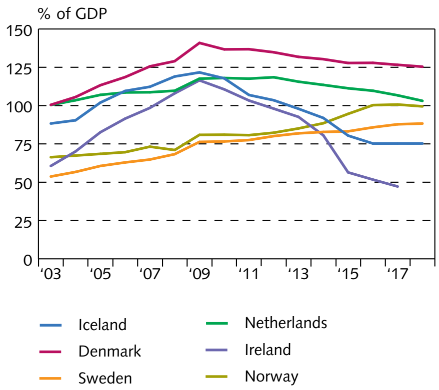
Households: Debt as share of disposable income



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

Chart VIII-7

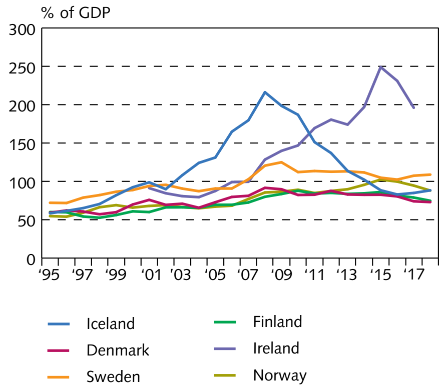
Households: Debt as share of GDP



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

Chart VIII-8

Corporate debt relative to GDP in international comparison[1]

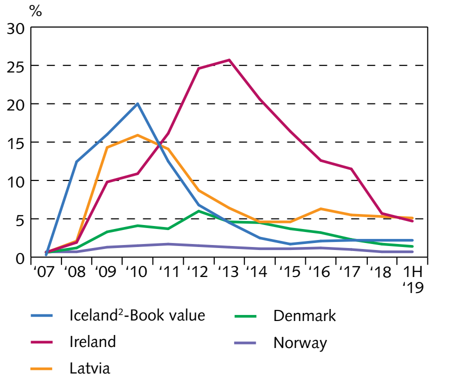


1. Debt owed to domestic and foreign financial undertakings and market bonds issued.

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

Chart VIII-9

Default ratios[1]



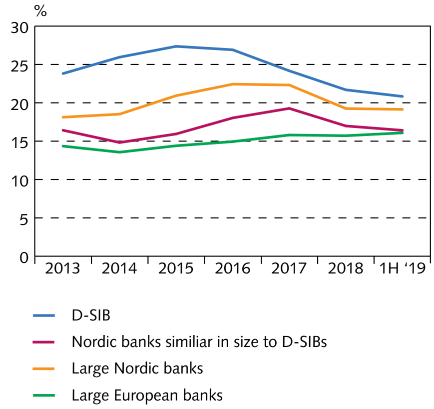
1. Households and corporates. Banks' non-performing loans as a percentage of gross loan portfolio w/o write-downs. 2019-Q1 figures for Denmark, Ireland, Norway and Latvia. 2. 2007: Figures estimated from the annual accounts of the failed banks. 2008: Central Bank estimates.

Sources: Financial Supervisory Authority, International Monetary Fund, World Bank, Central Bank of Iceland.

Chart VIII-10

Tier 1 ratio

Average of ratios

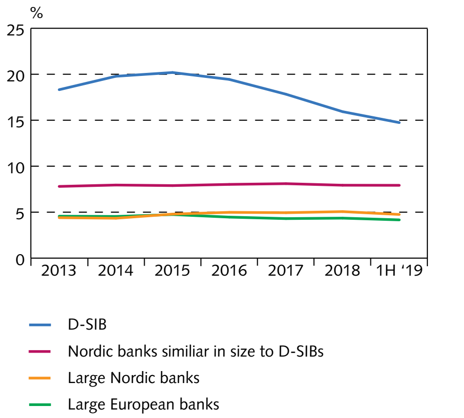


Source: S&P Global Market Intelligence.

Chart VIII-11

Leverage ratio[1]

Average of ratios



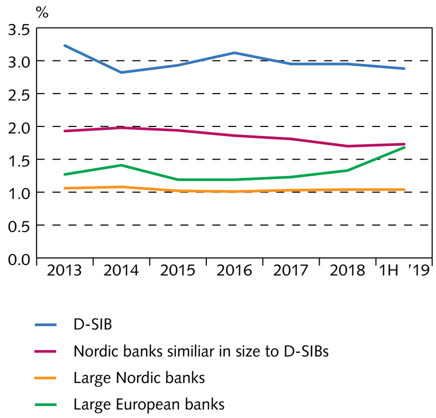
1. IFRS Tier 1 leverage ratio.

Source: S&P Global Market Intelligence.

Chart VIII-12

Net interest margin

Average of ratios

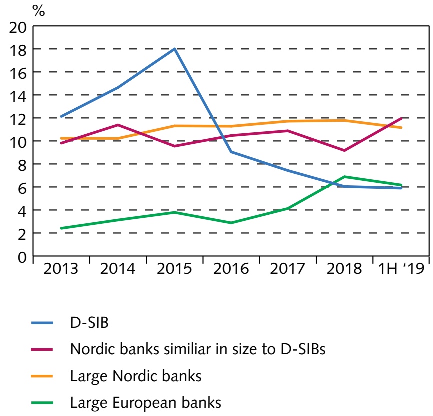


Source: S&P Global Market Intelligence.

Chart VIII-13

Return on equity

Average of ratios

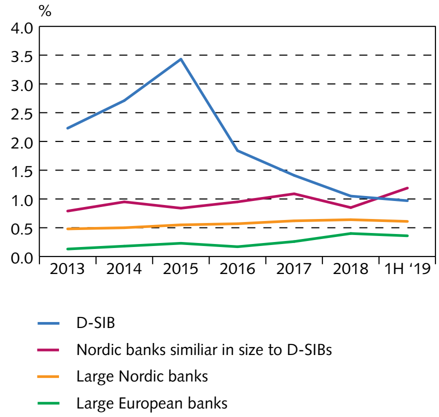


Source: S&P Global Market Intelligence.

Chart VIII-14

Return on total assets

Average of ratios

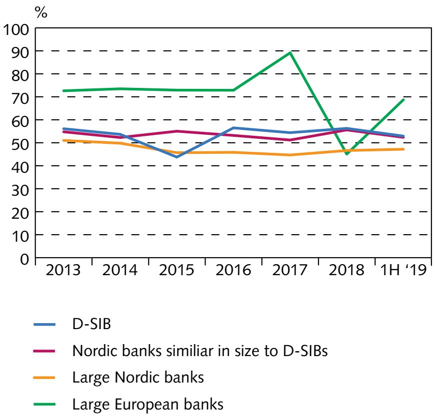


Source: S&P Global Market Intelligence.

Chart VIII-15

Cost-to-income ratios

Average of ratios

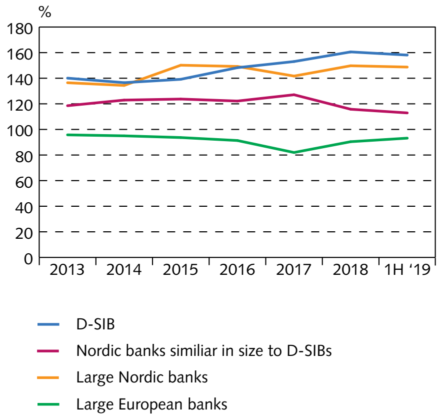


Source: S&P Global Market Intelligence.

Chart VIII-16

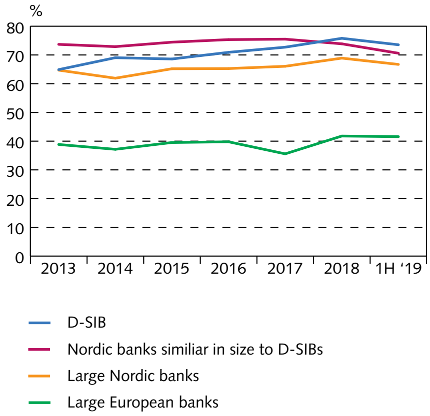
Loans/ deposits

Average of ratios



Source: S&P Global Market Intelligence.

Chart VIII-17
Loans/ assets
Average of ratios



Source: S&P Global Market Intelligence.

Appendix II

Tables

Table 1 Financial system assets[1]

Assets, b.kr	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	30.6. 2019	Change from 31.12. 2018, %
Central Bank of Iceland	948	901	765	755	858	14
Deposit-taking corporations excluding the Central Bank	3,197	3,222	3,405	3,681	3,935	7
– Commercial banks	3,175	3,199	3,381	3,656	3,908	7
– Savings banks and other deposit-taking corporations	22	23	24	26	27	2
Money market funds	93	177	158	147	153	4
Non-MMF investment funds2	506	668	686	668	749	12
Other financial intermediaries3, 4	2,786	1,773	1,426	1,336	1,317	-1
– Housing Financing Fund	803	787	761	731	736	1
Financial auxiliaries	17	18	20	21	20	-5
Insurance corporations	190	206	220	232	259	11
Pension funds	3,284	3,540	3,943	4,245	4,761	12
Total assets	11,021	10,505	10,623	11,085	12,052	1

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, ESÍ, the Framtíðin credit fund, and Sparisjóðabankinn (SPB) are classified among other financial institutions. Data are as follows: for Byr, from January 2016 onwards; for ESÍ, 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. 2015	31.12. 2016	31.12. 2017	31.12. 2018	30.6. 2019	Change from 31.12. 2018, %
Cash and cash balance with Central Bank	294,599	385,056	378,700	293,870	307,660	5
Deposits in domestic deposit-taking corporations	2,888	4,176	6,075	658	606	-8
Deposits in foreign deposit-taking corporations	99,074	56,299	77,887	107,039	95,984	-10
Domestic credit	2,072,205	2,187,741	2,407,764	2,708,062	2,820,469	4
Foreign credit	142,601	132,419	133,857	153,272	205,060	34
Domestic marketable bonds and bills	263,711	206,056	116,001	95,842	120,590	26
Foreign marketable bonds and bills	99,227	53,590	85,778	137,139	156,255	14
Domestic equities and unit shares	152,631	130,720	114,561	101,026	115,241	14
Foreign equities and unit shares	1,844	2,197	14,276	3,077	2,758	-10
Other domestic assets	62,516	56,906	57,445	68,435	94,113	38
Other foreign assets	5,767	6,703	12,478	13,068	16,068	23
Total	3,197,062	3,221,861	3,404,821	3,681,488	3,934,804	7

Source: Central Bank of Iceland.

Table 3 Other financial corporations' assets

Assets, b.kr.	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	30.6. 2019	Change from 31.12. 2018, %
Cash and cash balance with Central Bank	70,317	116,026	93,566	95,531	103,455	8
Deposits in domestic deposit-taking corporations	233,424	76,342	55,036	53,276	53,866	1
Deposits in foreign deposit-taking corporations	616,589	60,762	37,924	36,088	31,431	-13
Domestic credit	1,039,682	876,738	801,463	757,922	751,355	-1
Foreign credit	163,947	136,426	64,940	57,731	38,589	-33
Domestic marketable bonds and bills	241,577	217,461	178,233	211,847	236,561	12
Foreign marketable bonds and bills	4,965	3,501	998	266	0	-100
Domestic equities and unit shares	225,311	165,317	109,192	94,082	71,944	-24
Foreign equities and unit shares	94,481	68,507	46,380	3,680	6,500	77
Other domestic assets	69,981	39,833	31,776	19,193	17,365	-10
Other foreign assets	25,483	12,323	6,268	6,544	6,335	-3
Total	2,785,755	1,773,237	1,425,775	1,336,161	1,317,401	-1

Source: Central Bank of Iceland.

Table 4 Pension fund assets

Assets, b.kr.	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	30.6. 2019	Change from 31.12. 2018, %
Deposits in domestic deposit-taking corporations	151,726	116,608	149,353	142,872	174,820	22
Deposits in foreign deposit-taking corporations	8,605	18,450	20,451	13,776	9,997	-27
Domestic credit	175,253	237,973	332,007	428,474	469,722	10
Foreign credit	80	199	268	309	316	2
Domestic marketable bonds and bills	1,509,429	1,720,558	1,808,826	1,909,858	1,969,400	3
Foreign marketable bonds and bills	1,777	926	524	3,980	8,233	107
Domestic equities and unit shares	692,267	671,691	657,083	647,835	766,922	18
Foreign equities and unit shares	724,540	748,503	925,416	1,071,412	1,334,539	25
Domestic insurance and pension assets	14,281	17,155	19,227	21,003	21,831	4
Foreign insurance and pension assets	35	44	63	69	76	11
Other domestic assets	6,335	7,860	30,219	5,083	4,933	-3
Other foreign assets	3	1	1	0	0	-
Total	3,284,331	3,539,967	3,943,438	4,244,671	4,760,790	12

Source: Central Bank of Iceland.

Table 5 Insurance company assets

Assets, b.kr.	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	30.6. 2019	Change from 31.12. 2018, %
Cash and cash balance with Central Bank	6,125	7,354	7,011	1,563	1,346	-78
Deposits in domestic deposit-taking corporations	7,309	4,586	4,861	6,589	6,235	36
Deposits in foreign deposit-taking corporations	1,395	208	149	75	583	-50
Domestic credit	1,239	1,487	3,449	3,523	2,832	2
Foreign credit	0	0	0	0	0	0
Domestic marketable bonds and bills	79,884	89,989	94,177	98,628	104,833	5
Foreign marketable bonds and bills	3,999	3,740	4,467	16,801	20,118	276
Domestic equities and unit shares	53,421	60,664	65,696	61,159	64,725	-7
Foreign equities and unit shares	6,457	5,945	8,182	8,821	9,883	8
Domestic insurance and pension assets	17,024	17,869	20,662	22,228	31,780	8
Foreign insurance and pension assets	7,257	7,451	5,815	6,310	7,222	9
Other domestic assets	4,658	5,798	4,350	5,197	7,742	19
Other foreign assets	1,117	1,312	1,546	1,542	1,508	0
Total	189,885	206,404	220,365	232,436	258,807	5

Source: Central Bank of Iceland.

Table 6 D-SIB: Income and expenses[1]

Income and expenses, b.kr	*31.12. 2015*	*31.12. 2016*	*31.12. 2017*	*31.12. 2018*	*30.6. 2019*	*Change from 31.12. 2018, %*
Arion Bank hf.						
Operating income	36,402	27,639	27,482	23,315	23,928	3
Net interest income	13,175	14,626	14,824	14,141	15,242	8
Net fee and commission income	7,434	6,747	4,608	4,917	4,696	-4
Other operating income	15,793	6,266	8,050	4,257	3,990	-6
Operating expenses	13,176	15,155	13,188	13,686	13,480	-2
Change in loan values	81	-945	-1,308	301	2,069	587
Income tax	3,690	3,667	4,870	3,875	3,331	-14
Net after-tax gain from discontinued operations	-132	0	-266	-442	-1,934	338
Profit	19,322	9,762	10,466	5,011	3,114	-38
Íslandsbanki hf.						
Operating income	22,272	30,161	22,718	22,780	25,094	10
Net interest income	13,550	15,895	15,211	15,342	16,778	9
Net fee and commission income	6,423	6,659	6,813	5,810	6,623	14
Other operating income	2,299	7,607	694	1,628	1,693	4
Operating expenses	12,466	13,424	13,441	14,301	14,873	4
Change in loan values	-4,308	-369	-440	-1,934	1,848	-196
Income tax	4,248	5,213	4,075	4,077	3,593	-12
Net after-tax gain from discontinued operations	924	1,124	2,399	794	-71	-109
Profit	10,790	13,017	8,041	7,130	4,709	-34
Landsbankinn hf.						
Operating income	27,034	26,307	27,987	27,291	30,272	11
Net interest income	16,198	17,611	18,176	19,476	20,459	5
Net fee and commission income	3,394	3,894	4,432	3,876	4,136	7
Other operating income	7,442	4,802	5,379	3,939	5,677	44
Operating expenses	12,058	12,256	12,048	12,154	12,231	1
Change in loan values	-1,845	-2,275	-1,301	-1,727	2,372	-237
Income tax	4,416	5,028	4,587	5,251	4,556	-13
Net after-tax gain from discontinued operations	0	0	0	0	0	-
Profit	12,405	11,298	12,653	11,613	11,113	-4
D-SIBs						
Operating income	85,708	84,107	78,187	73,386	79,294	8
Net interest income	42,923	48,132	48,211	48,959	52,479	7
Net fee and commission income	17,251	17,300	15,853	14,603	15,455	6
Other operating income	25,534	18,675	14,123	9,824	11,360	16
Operating expenses	37,700	40,835	38,677	40,141	40,584	1
Change in loan values	-6,072	-3,589	-3,049	-3,360	6,289	-287
Income tax	12,354	13,908	13,532	13,203	11,480	-13
Net after-tax gain from discontinued operations	792	1,124	2,133	352	-2,005	-671
Profit	42,517	34,077	31,160	23,754	18,936	-20

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: S&P Global Market Intelligence.

Table 7 D-SIB: Key ratios

%	31.12. 2015	31.12. 2016	31.12. 2017	31.12. 2018	30.6. 2019
Return on equity	16.8	8.9	7.4	6.1	6.2
Return on assets	3.5	1.8	1.4	1.1	1.0
Expenses as a share of net interest and commission income	63.0	62.0	61.0	60.0	60.0
Expenses as a share of total assets	2.5	2.6	2.5	2.3	2.2
Net interest and commission income as a share of total income	58.0	81.0	88.0	93.0	93.0
Net interest as a share of total assets	2.9	3.0	2.9	2.9	2.8
Capital ratio	28.2	27.7	25.0	23.2	22.6
Foreign exchange as a share of the capital base	2.2	-0.5	0.5	0.3	0.7
Liquidity coverage ratio (LCR), total	130.5	163.0	165.9	166.0	186.0
Liquidity coverage ratio (LCR), FX	371	403.8	412.8	509.6	467
Net stable funding ratio (NSFR), total	115.4	123.0	122.2	117.9	119
Net stable funding ratio (NSFR), FX	136.9	161.8	161.5	159.8	173

Source: Central Bank of Iceland.

Table 8 Commercial banks' foreign bond issues last 12 months (1 October 2018 - 30 September 2019)

Issuer	Date	Currency	Ammount (b.kr.)	Maturity (years)	Premium on interbank rate,[1] %
Arion Bank					
	November 2018	SEK	6.8	10.0	3.1
	January 2019	NOK	10.6	3.0	1.82
	February 2019	EUR	0.7	12.0	3.032
	March 2019	EUR	1.8	2.0	0.58
	March 2019	SEK	2.0	3.0	1.33
	July 2019	NOK	4.4	10.0	3.65
Total			26.3		
Íslandsbanki					
	January 2019	NOK	14.2	3.0	
	January 2019	SEK	4.5	1.5	
	January 2019	NOK	5.6	5.0	3.95 fixed
	February 2019	SEK	4.0	2.0	
	March 2019	EUR	1.6	2.0	0.58
	April 2019	EUR	40.0	3.0	1.125 fixed
	June 2019	SEK	6.7	10.0	3.9
Total			76.8		
Landsbankinn					
	February 2019	NOK	13.9	3.0	1.75
	February 2019	SEK	6.4	3.0	1.75
	May 2019	NOK	4.3	1.5	0,83
	May 2019	SEK	7.7	1.5	0.83
Total			32.3		

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/ announcement	Value %	Effective date
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	13.4.2018	15.5.2018	1.75	15.5.2019
	19.12.2018	1.2.2019	2	1.2.2020
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*	*Q2 '19[6]*
Net IIP[1]	% of GDP	-49.7	-41.6	-4.7	2.9	3.5	11.6	21.8
External debt[2]	% of GDP	158.6	151.2	116.0	102.0	81.6	77.5	81.0
Treasury FX debt as a share of total debt	%	26.9	27.9	23.0	18.1	12.8	15.9	22.2
Commercial banks' foreign-denominated bonds	% of GDP	19.2	16.6	16.9	18.7	19.8	21.1	23.0
Current account balance[3]	% of GDP	7.2	5.3	5.8	6.6	3.5	2.5	4.1
International reserves	% of GDP	24.9	25.6	28.5	32.7	26.2	26.3	29.2
International reserves financed in krónur	% of GDP	-4.0	1.0	13.2	23.8	21.1	21.1	21.7
International reserves/RAM	%	75.0	85.4	129.6	176.1	153.0	149.9	165.8
Terms of trade	Value	82.0	89.5	90.2	93.6	94.1	89.1	90.4
Nominal exchange rate[4]	Value	210.1	206.6	191.5	161.7	162.9	174.1	185.9
Real exchange rate[5]	Value	74.0	76.8	83.1	99.4	99.2	90.4	88.3
Treasury's highest credit rating	Rating	Baa2/BBB	Baa2/BBB	Baa1/BBB+	A3/A-	A2/A	A2/A	A2/A

1. Based on underlying IIP until 2015. 2. External debt 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. The quarterly value is based on the last four quarters. 4. Trade-weighted exchange rate index – narrow trade basket (1%). 5. In terms of relative consumer prices. 6. Stock figures based on total GDP for the period Q3/2018-Q2/2019.

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.