



FINANCIAL STABILITY

2020 • 1

Contents

- 3 *Statement of the Financial Stability Committee*
- 5 *I Financial Stability: Developments and prospects*
- 25 *II The financial system*
- 35 *III Central Bank scenario analysis*
- 41 *Box 1 Pandemic response measures*
- 46 *Box 2 Liquidity*
- 49 *Box 3 Capital flows in the time of COVID-19: Emerging market economies face large-scale capital flight, but Iceland is stable*
- 51 *Box 4 Status of the FATF appraisal of Iceland's anti-money laundering and terrorist financing measures*
- 52 *Box 5 Payment intermediation and the COVID-19 pandemic*
- 55 *Appendix*
 - Appendix I: Tables 55*
 - Appendix II: Glossary 60*

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:

The Central Bank of Iceland, Kalkofnsvegur 1, 150 Reykjavík, Iceland

Tel: (+354) 569 9600, fax: (+354) 569 9605

E-mail: sedlabanki@sedlabanki.is

Website: www.sedlabanki.is

Vol. 26 1 July 2020

Printing: Prentmet Oddi ehf.

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

Material may be reproduced from *Financial Stability*, but an acknowledgement of source is kindly requested.

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.

Statement of the Financial Stability Committee 1 July 2020

The most recent GDP growth forecasts for Iceland assume that GDP will contract by 8% this year. Measures adopted by the Central Bank of Iceland and the Government in response to the COVID-19 pandemic have afforded financial institutions greater scope to support households and businesses during this challenging time.

The three large commercial banks have strong capital and liquidity positions. Although there is uncertainty about the real value of their loan portfolios under the current circumstances, the Central Bank's scenario analysis indicates that their capital position is strong enough to withstand the strain. It is important to expedite loan restructuring to the extent possible. Moratoria on payment alone will not solve the problems facing the most distressed borrowers.

The Financial Stability Committee is required to determine the value of the countercyclical capital buffer on financial institutions on a quarterly basis. In accordance with its statement of 18 March 2020, the Committee has decided to keep the buffer unchanged for the next nine months.

The risk exists that the Central Bank's easing of policy instruments could push asset prices higher and increase the likelihood that systemic risk will accumulate in individual sectors or in the economy more broadly. The Committee reiterates that it is ready to apply the policy instruments at its disposal in order to preserve financial stability in the wake of the pandemic.

I Financial Stability: Developments and prospects

Iceland's financial system is on a sound footing in spite of the COVID-19 pandemic. Private sector balance sheets have grown stronger in recent years, shored up by deleveraging and higher equity ratios. As a result, the private sector is better prepared than often before to face the current situation. On the other hand, if the repercussions of the pandemic are prolonged, it will have a negative impact on the financial system and on households and businesses. The pandemic has accelerated the trend that began last year with the contraction in tourism and reduced access to corporate loans from risk-averse financial institutions. The country's largest export sectors have been buffeted by strong headwinds, and there is uncertainty about Iceland's foreign currency revenues. A deep contraction lies ahead for the tourism industry, with the possibility of a wave of insolvencies in coming months, unless the situation changes. Aluminium prices have fallen, and marine product sales have been disrupted by business closures. Employment is down markedly, and unemployment is expected to rise to previously unknown levels, as the services sectors hit hardest by the current crisis are highly labour-intensive. Commercial property prices have fallen somewhat, while residential property prices are still relatively unchanged. The Government and the Central Bank have responded to the current crisis by adopting a wide range of measures, including lowering financing costs and expanding access to credit. These measures could jump-start asset markets and resuscitate the financial cycle, at least temporarily. The low-interest environment resulting from pandemic response measures exacerbates the risk of a debt bubble, either in specific sectors or in the broader economy, at a time when the financial stability policy stance is more accommodative than before. This could undermine financial stability in the coming term. It is therefore essential to take appropriate action if increased risk appetite leads to excessive credit growth when the impact of the pandemic tapers off and the economy starts to recover.

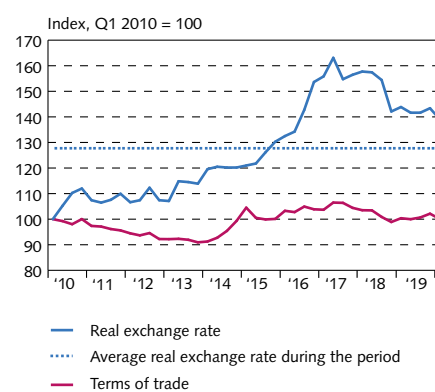
Risk linked to international developments and capital flows

The global economic outlook has deteriorated substantially ...

The global economic outlook darkened severely with the spread of the COVID-19 pandemic and the response measures adopted by governments in a bid to curtail it. Bans on large gatherings and curfews were introduced widely, and borders were closed. Economic activity slowed to a crawl in a very short time, unemployment surged, and many companies have found themselves fighting for survival. Purchasing managers' indices (PMI), which give an indication of the economic outlook, dropped precipitously, reaching all-time low levels in April. They rebounded slightly in May, although they remain very low in historical terms.¹ According to the new forecast from the International Monetary Fund (IMF), published in late June, the global economy is expected to contract by 4.9% as a result of the pandemic, some 1.9% more than in the April forecast. The IMF forecasts a contraction of 8% among advanced economies and 3% for emerging market economies. It also expects the economic recovery in the next few years to be weaker than previously assumed.

Governments the world over have substantially increased public spending in order to support economic activity and mitigate the economic impact of the virus. The pandemic has therefore weakened highly leveraged countries. This is particularly true of many emerging market economies, which saw large-scale capital flight in the immedi-

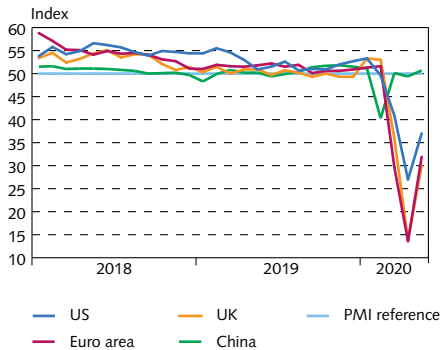
Chart I-1
Real exchange rate of the króna and terms of trade



Sources: Statistics Iceland, Central Bank of Iceland.

1. PMIs for manufacturing and services, published monthly, provide a leading indicator of the economic outlook. The indices are calculated based on responses from a survey panel and executives from over 400 firms. In the survey, respondents are asked to answer questions on production volume, price developments, staffing plans, and expectations for the future, among other topics. For further information, see the IHS Markit website: <https://ihsmarkit.com/products/pmi.html>

Chart I-2
Composite purchasing managers' index¹
January 2018 - May 2020



1. Markit composite output 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: Refinitiv Datastream.

ate aftermath of the pandemic, although inflows have begun once again. Further discussion can be found in the Box Capital flows in the time of COVID-19. It is clear that government debt will surge in many economies. The large international credit rating agencies have recently downgraded many countries' sovereign credit ratings. Both S&P and Fitch have affirmed Iceland's sovereign ratings. S&P kept the outlook unchanged at stable, while Fitch changed it from stable to negative.

... and weakened Iceland's key export sectors

In Iceland, as in other countries, the economic outlook has darkened with the spread of the pandemic. According to the Central Bank's most recent macroeconomic forecast, published in *Monetary Bulletin* 2020/2 in May, GDP growth is projected to shrink by 8% this year and the jobless rate is set to surge, with double-digit unemployment expected in H2/2020. An important factor in this is the sharp contraction in Iceland's main export sectors, which are discussed further in the section entitled Status of key export sectors.

By May, the real exchange rate in terms of relative consumer prices had fallen 10% year-to-date, owing primarily to the 9% nominal depreciation of the króna. Terms of trade deteriorated in Q1/2020, in part because exchange rate pass-through pushed import prices higher. Favourable developments in oil and marine product prices have curbed the deterioration, however.

Foreign financial markets highly volatile

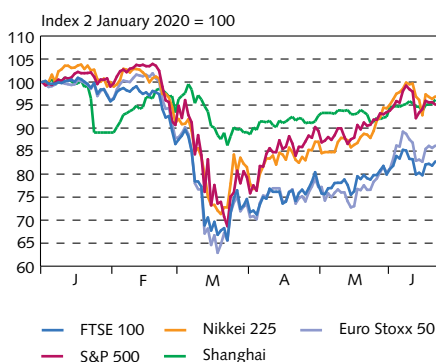
The pandemic and the associated response measures have had a profound impact on global financial markets. From the end of February and well into March, investors fled from high-risk assets such as equity securities to safer alternatives, such as stable currencies and government bonds with strong credit ratings. This demand for highly liquid assets was reflected in movements in stable currencies' exchange rates and government bond yields. Volatility soared, and the VIX implied volatility index, which measures fluctuations in the S&P 500 share price index, peaked in March, overtaking the level seen in the 2008 financial crisis.

Central banks responded to the economic repercussions of the pandemic with a range of policy actions, including interest rate cuts, intermediation of liquidity, and vastly expanded secondary market bond purchases. These measures reversed the negative effects on the financial markets when uncertainty was at its greatest. Share prices picked up again in late March, fuelled by government economic measures, the retreat of the pandemic in Europe and Asia, and expectations of the rapid development of a vaccine. In June, however, the pandemic has regained momentum in some places, shaking the markets once again. Furthermore, relations between the US and China are tense at the moment, giving rise to intermittent financial market unrest that could easily persist in the months to come.

Increased uncertainty about foreign exchange revenues

The COVID-19 pandemic has dealt a body blow to Iceland's leading export sectors, on top of a string of setbacks in the tourism industry

Chart I-3
Share price indices
2 January - 20 June 2020



Source: Refinitiv Datastream.

last year. In 2019, Iceland's current account surplus nearly doubled year-on-year in spite of an 18% contraction in net tourism-generated export revenues, as the goods account deficit narrowed and revenues from other business services grew. There was also a year-on-year increase in reinvested earnings², although the extent to which it generated foreign currency inflows is uncertain. During the year, aircraft valued at 19 b.kr. were exported from Iceland in connection with WOW Air's difficulties, but this probably did not generate foreign currency inflows, either. As a result, Iceland's foreign currency revenues did not grow in line with the increase in the current account surplus.

The Central Bank's most recent macroeconomic forecast assumes a substantial contraction in tourism revenues this year, as well as a contraction of nearly one-third in total exports. On the other hand, imports are projected to contract by one-fourth, owing to reduced economic activity, and export industries are expected to need fewer imported inputs. In addition, Icelanders are expected to reduce overseas travel substantially. As a result, this year's current account surplus is forecast to measure 1.3% of GDP. Furthermore, a weaker króna and improved terms of trade in 2020 as a whole will support exports.

In Q1/2020, the current account surplus totalled 11 b.kr., or 1.7% of GDP, down from 6.6% in Q1/2019 (3.8% excluding the effects of aircraft exports).

Modest outflow pressures year-to-date despite global market unrest

In the first five months of the year, registered new investment was negative in the amount of 5 b.kr.³ Non-residents used a portion of the sales proceeds of their Icelandic Government bond holdings to reinvest in this country, and outflows from equity securities sales were offset by inflows relating to a non-resident's takeover of a domestic leasing firm. There have been no signs of capital flight from Iceland, and since the pandemic began to spread within the country, registered net new investment has been positive by 2 b.kr. (for further discussion, see the Box entitled *Capital flows in the time of COVID-19*). In recent weeks, investors' confidence in global financial markets has been on the rise, but there is significant uncertainty about developments in the months to come.

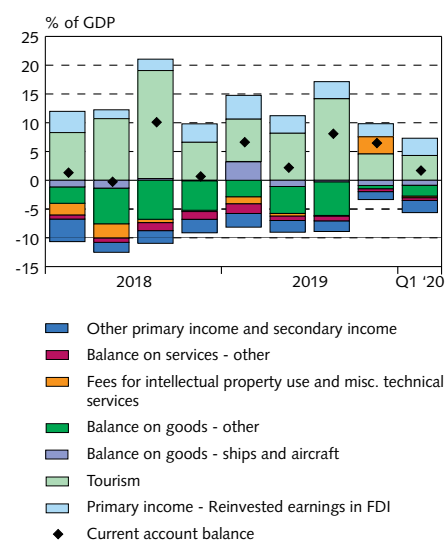
Data on registered new investments show that capital inflows have been limited since mid-2019. This is perhaps due to reduced risk appetite, the poorer GDP growth outlook for Iceland, and the narrower interest rate differential with abroad in the wake of domestic interest rate cuts. Recently passed amending legislation that will make it easier for settlement agents and custodians to enable foreign investors to trade in Icelandic securities could increase capital flows to and from Iceland.⁴

2. This includes reinvested earnings of domestic-owned foreign companies and, in part, negative reinvested earnings (i.e., losses) of foreign-owned domestic companies.

3. Data on registered new investments represent inflows of foreign currency converted to Icelandic krónur for investment in Iceland.

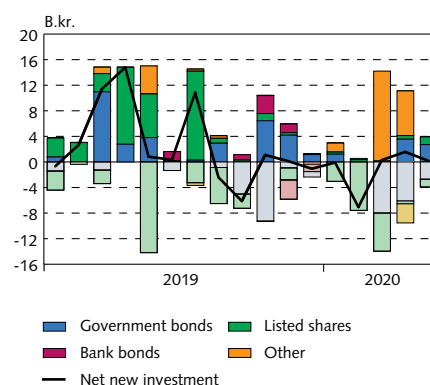
4. See Act 33/2020.

Chart I-4
Current account balance



Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-5
Registered new investment¹



1. Data on new investments represent inflows of foreign currency converted to Icelandic krónur for investment in Iceland. Total investment, new investment, and reinvestment. Inflows in dark colours; outflows in light colours.

Source: Central Bank of Iceland.

Chart I-6

Pension funds' foreign portfolio investment and monthly changes in foreign currency account balances

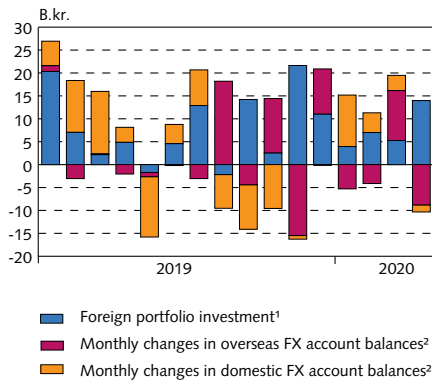


Chart I-7

Net international investment position

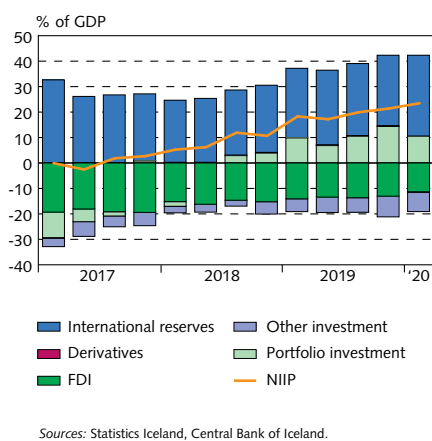
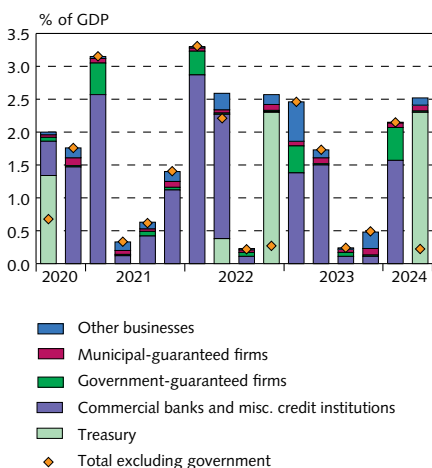


Chart I-8

Repayment profile of long-term foreign debt¹



Pension funds refrain from foreign currency purchases due to uncertainty

Resident entities' capital outflows have also been modest in the recent past. In particular, the pension funds have largely refrained from buying currency.⁵ Since mid-March, the pension funds' foreign investments have been limited primarily to honouring existing obligations, and there has been less pressure on the króna as a result.⁶

The pension funds' foreign currency deposits amounted to some 80 b.kr. in April, which could conceivably reduce their need to go to the market in order to invest overseas. The foreign currency position varies greatly from one fund to another, however, as do investment plans. There are also other entities that could be interested in exporting capital from Iceland, irrespective of the economic situation. Among them are owners of offshore krónur, who hold roughly 50 b.kr. in assets, most of them highly liquid. The stock of offshore krónur has shrunk by 6 b.kr. year-to-date, and ownership is quite concentrated.

International investment position improves during the pandemic

The subcomponents of Iceland's international investment position (IIP) changed radically in Q1/2020, primarily due to the 11% depreciation of the króna and the drop in domestic and foreign share prices by about one-fifth. The net IIP improved during the quarter, to 23% of GDP by the quarter-end. It is possible that the overall impact of the pandemic on the external position has not yet come fully to the fore. Large movements in asset prices have partially reversed in recent weeks, for instance.

Foreign long-term debt grew by 190 b.kr. in Q1/2020, with about four-fifths of the increase due to exchange rate movements. The commercial banks' foreign market funding accounts for about half of foreign long-term debt, and interest premia on the banks' issues have risen considerably since mid-February (for further discussion, see the section entitled *Liquidity and funding*).

At the end of May, the Treasury issued a 500 million euro bond (the equivalent of 76 b.kr.) with a six-year maturity, at a yield of 0.667%. In 2020 to date, the commercial banks, Government-owned companies, and energy companies have been the primary issuers of foreign debt. The proceeds of the issues have been used in part to refinance existing debt to the Icelandic banking system, thereby reducing the banks' need to seek out foreign funding.

Ample international reserves

The Central Bank's international reserves totalled 904 b.kr. at the end of May, and the ratio of the reserves to the International Monetary

5. On 17 March, the pension funds issued a statement of understanding indicating that they would refrain from non-essential currency purchases for three months, owing to the foreseeable contraction in export revenues. As that deadline approached, the parties agreed to extend the hiatus on currency purchases for another three months. See: <https://www.cb.is/publications/news/news/2020/06/15/Governors-statement-on-extension-of-the-hiatus-in-pension-funds-foreign-currency-purchases/>

6. The pension funds' estimated obligations due to specialised investments abroad (generally in venture capital funds, real estate funds, or infrastructure funds) total approximately 200 b.kr. over the next five years.

Fund's (IMF) reserve adequacy metric (RAM) was 168% at the end of Q1. In general, the aim is to keep the ratio above 100-150%, depending on circumstances. A simple sensitivity analysis indicates that Iceland's reserves are large enough to cover moderate capital outflows. Other things being equal, the ratio will not fall below 130%, even if the reserves are used to cover outflows stemming from the sale of all highly liquid króna assets and shares listed on the Nasdaq Iceland exchange held by non-residents.⁷ The Treasury's recent eurobond issue further increased the ratio.

Tourism has all but ground to a halt in the wake of the pandemic

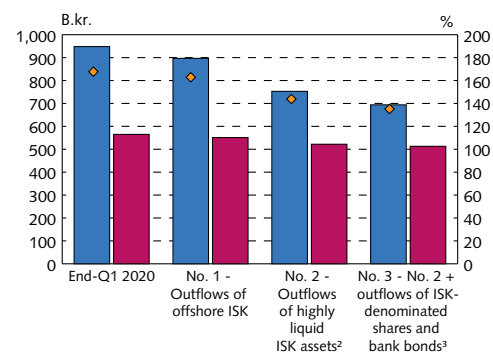
In 2019, following a surge dating back eight years, the tourism industry was struck by successive shocks, with the collapse of WOW Air and the grounding of Icelandair's Boeing 737 MAX jets. Tourist numbers dropped 14.1% year-on-year from 2018. With the addition of the COVID-19 pandemic, the sector is virtually in hibernation. Border closures have been widespread, and flights to and from Iceland were all but non-existent from late March through mid-June. Non-residents' departures via Keflavík Airport were down 99% year-on-year in April and May. Analysts forecast that tourist visits to Iceland will contract by 60-80% between years in 2020. Tourism worldwide has been hit hard by the pandemic. Airlines have resorted to aggressive streamlining measures, and the future of the air travel market is highly uncertain. A number of airlines have sought government support to sustain themselves through several months without revenues.

In the past few weeks, governments have begun to open their borders to foreign travellers, but tourism is likely to start slowly while public health measures remain in place. Scenarios prepared in May by the UN World Tourism Organization show a worldwide decline of 58-78% in international tourism this year.⁸ Domestic tourism is expected to recover more quickly than international tourism. In Iceland, however, domestic tourism accounts for a much smaller share than it does in most other countries. The Icelandic authorities have responded to the difficulties in the sector with a variety of measures, as is discussed further in *Box Pandemic response measures*. Icelanders have also been encouraged to travel within the country, and an international marketing campaign is being launched with the aim of restoring demand for travel to Iceland.

In mid-June, Iceland opened its borders to foreign tourists and offered them the option of being tested for COVID-19 at the border instead of entering quarantine. Thereafter, Icelandair and six foreign carriers began offering scheduled flights between Iceland and Europe. As of yet, virtually all flights to North America have been suspended, as strict restrictions are yet on the external borders of the Schengen Area. Airlines west of the Atlantic have announced the cancellation of all of their Iceland flights this summer.

Chart I-9
International reserves / IMF reserve adequacy metric¹

Sensitivity analysis of reserves based on end-Q1/2020 position

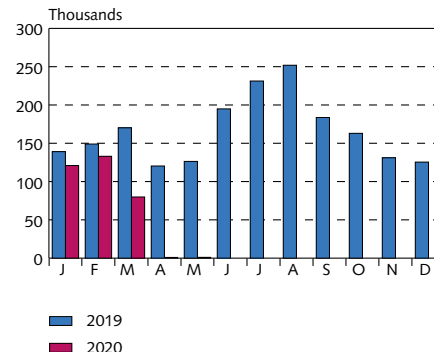


■ International reserves (left)
■ Reserve adequacy metric (left)
◆ Reserves / RAM (right)

1. RAM. 2. Foreign-owned deposits, Central Bank certificates of deposit, Treasury bills, Treasury bonds, and Housing Financing Fund bonds.
3. Excluding shares falling under foreign direct investment and shares listed on foreign stock exchanges.

Source: Central Bank of Iceland.

Chart I-10
Tourist departures via Keflavík Airport

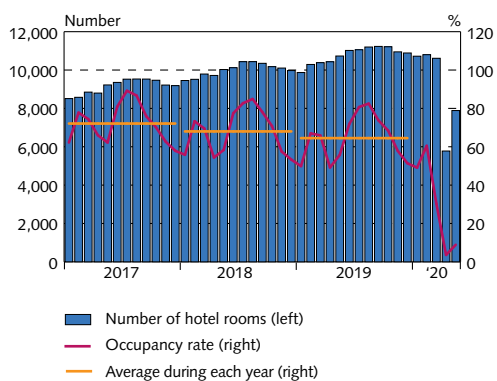


Sources: Icelandic Tourist Board, Isavia.

7. Highly liquid assets are deposits, Central Bank of Iceland certificates of deposit, Treasury bills, Treasury bonds, and Housing Financing Fund bonds. Outflows due to equity securities do not take into account the impact on prices in the event of a fire sale.

8. <https://www.unwto.org/news/covid-19-international-tourist-numbers-could-fall-60-80-in-2020>

Chart I-11
Supply and occupancy rate of hotel rooms¹



1. 2020 numbers are preliminary figures.
Source: Statistics Iceland.

The future of Icelandair has been highly uncertain in recent months, and the airline is now seeking ways to strengthen its liquidity and secure long-term financing. It is clear that Icelandair's position will have a profound impact on the strength of the tourism recovery once air travel resumes in earnest and people's desire to travel increases again.

Increased importance of domestic tourism

Hotels and guesthouses have seen demand collapse in recent months. The number of hotel bed-nights fell by 97% year-on-year in April and 88% in May. Clearly, hotels and other types of guest accommodation will rely heavily on domestic tourists this summer. The Icelandic Tourist Board's recent survey of Icelanders' travel plans indicates that 9 of every 10 Icelanders plan to travel domestically this summer. Of that total, about one-third expect to stay at hotels, and another one-fifth plan to use guesthouses or other comparable offerings.⁹ Even so, domestic travel will only compensate for a fraction of the decline in foreign tourists' demand for accommodation and other travel-related services. Furthermore, hotel prices have fallen because of reduced demand, particularly in the greater Reykjavík area, as the rise in domestic tourism will primarily benefit operators in regional Iceland. It is to be expected that some of the hotels and guesthouses in greater Reykjavík that have closed during the pandemic will not re-open until summer 2021 at the earliest.

With the surge in tourist visits starting in 2011, hotel occupancy rates rose sharply, peaking in 2017. Since then, hotels' operating conditions have deteriorated somewhat, with increased supply of accommodation, higher wage costs, and declining visitor numbers since 2018. In 2019, the occupancy rate was 65%, a decline of nearly 8% in two years' time. In the capital area, it was just under 75% and had fallen by nearly 10% over the same period. A number of hotels and guesthouses are still under construction (see the section *Risk linked to domestic assets markets*), at a time when the outlook for tourist numbers has darkened severely as a result of the pandemic. There is a glut of guest accommodation at present, and it will probably persist until tourist numbers return to their previous level. When this will happen is uncertain.

Increased write-downs of loans to tourism companies

Annual growth in commercial bank lending to tourism companies measured just over 5% at the end of March, as opposed to nearly 9% a year earlier. In the past twelve months, this growth has stemmed primarily from lending to hotels and hotel construction projects. The marginal rise in Q1 is attributable to the depreciation of the króna during the quarter, which increased foreign-denominated loan balances in krónur terms. Loans to tourism companies now account for just under 10% of the banks' total lending. Write-downs of loans to the sector have increased since the beginning of 2019 and now

9. Icelandic Tourist Board (2020). *Icelanders' travel plans, May to October 2020*. MMR Survey.

account for 5.4% of the claim value of the loans. At the end of May, the number of tourism companies on the default register was up nearly 7% year-on-year. At that time, the share of tourism companies on the register was 14.5%, nearly a percentage point higher than at the same time in 2019. In terms of outstanding balance, about half of loans to the sector are in moratorium (see in Box *Pandemic response measures*), which probably explains the small size of the past few months' rise in default register numbers.

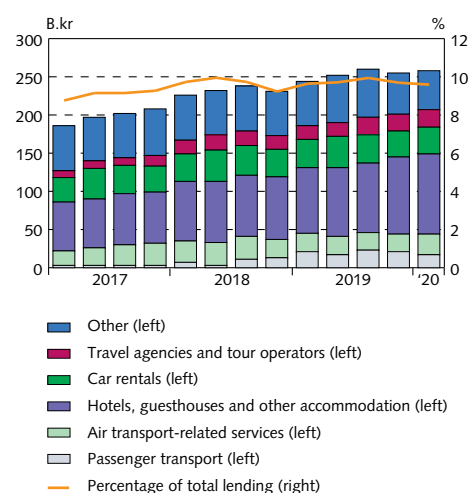
Tourism companies' solvency has been tested, and many of them (apart from airlines and hotels/guesthouses) have very limited assets that they can offer as collateral. This will make it difficult for them to obtain additional financing without Government assistance. Because much of the tourism sector is quite young and has been growing rapidly in recent years, many companies' resilience is limited. In the past few years, the industry's operating performance has been below average compared with other sectors, and tourism companies' average equity ratio is about half that of firms in other sectors.¹⁰ Operating premises have changed radically in a very short period of time, and for many companies, their operational foundations no longer exist. As a result, many are relying on the Government in order to weather the storm caused by the pandemic. The Government measures will help tourism operators in the short run, but if a recovery is long in coming, there may well be mass insolvencies, with the associated loan losses in the banking system.

The COVID-19 pandemic has profoundly affected marine product exports ...

Marine product export volumes fell 10% year-on-year in Q1/2020, yet export revenues rose marginally, boosted by favourable developments in prices and exchange rates. The outlook for Q2 has deteriorated with the spread of the pandemic, as the disease and the measures undertaken to contain it have cut into demand for marine products and complicated distribution channels. Broad-based public health measures such as border closures, closure of restaurants and stores, and prohibitions on large gatherings dramatically reduced demand for fresh fish. On the other hand, sales of frozen products have been robust, and some companies have therefore shifted increasingly in that direction. In addition, some firms have indicated that they will temporarily cut down on their fishing. The authorities have temporarily increased the authorisation to transfer demersal catch quotas between fishing years, from 15% to 25%. By mid-May, about 65% of this year's demersal quotas had been utilised, as opposed to around 70% in 2019.

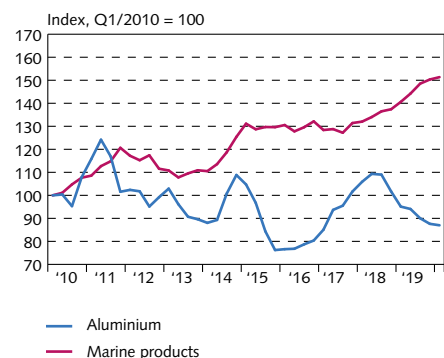
Commercial bank lending to the fishing sector accounted for just over 12% of all customer loans as of end-April. This ratio has risen somewhat in recent months, concurrent with the depreciation of the króna, as most fishing industry debt is denominated in foreign currencies. The non-performing loan ratio in the sector was 2.4% at the end of April and has remained broadly steady in recent years.

Chart I-12
D-SIB lending to the tourism industry



Source: Central Bank of Iceland.

Chart I-13
Developments in export prices
Q1/2010 - Q1/ 2020

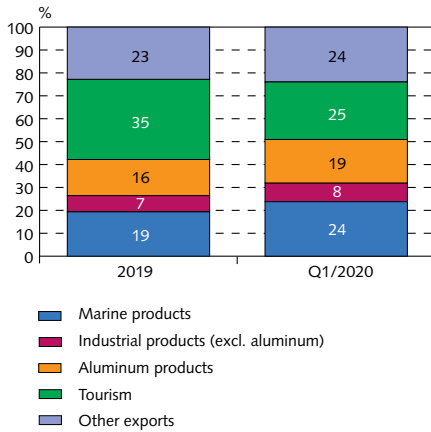


1. Aluminium prices in US dollars and marine product prices in foreign currencies.

Sources: Statistics Iceland, Central Bank of Iceland.

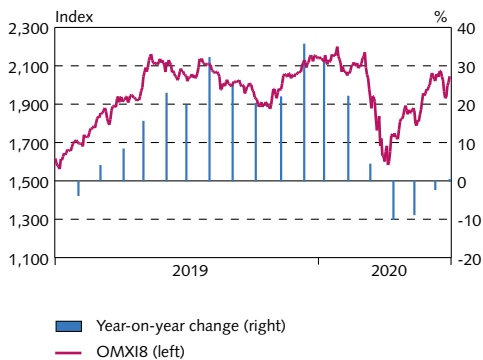
10. According to Statistics Iceland figures obtained from corporate tax returns.

Chart I-14
Goods and services exports and contribution from underlying components



Source: Statistics Iceland.

Chart I-15
OMX10 share price index



Source: Nasdaq Iceland.

... and cut into demand for aluminium

Aluminium exports declined in value by 6.5% year-on-year in Q1/2020, owing to falling prices and reduced production. Executives in charge of the Straumsvík smelter decided at the beginning of 2020 to cut production by 15% this year. The market is awash in supply, and aluminium prices, which have been sliding almost uninterrupted since the beginning of 2018, have fallen even further as a result of the pandemic. The outlook is for continued overproduction of aluminium and accumulation of inventories. Market analysts have pointed out that this could lead to further price cuts. In order to support large users of electricity in Iceland, Landsvirkjun has lowered energy prices to these customers and will sell to them at cost through end-October 2020.¹¹

Risk linked to domestic asset markets

Steep drop in share prices

Share prices on the Nasdaq Iceland exchange plunged in the last week of February and early in March, particularly among the companies most exposed to the bleak outlook for tourism. Icelandair led the decline, with a year-to-date share price drop of 80% at the trough. The OMX10 index bottomed out on 23 March, when it was down 27% since the turn of the year. Prices then rebounded somewhat, and by mid-June the OMX10 had risen to 10% below its end-2019 value. The uptick was due in large part to rising share prices in Marel, which accounts for 35% of listed companies' total market capitalisation and just over half of Main List companies' market cap. Movements in the index therefore depend heavily on Marel's share price, which is currently at an all-time high. Stock market turnover totalled 216 b.kr. in the first three months of the year, about 45% more than over the same period in 2019. On the other hand, it contracted sharply in April and May, and declined by approximately 50% year-on-year. The month of March saw a significant decline in direct pledging in the market.¹² It is possible that margin calls reduced debt levels and contributed to price reductions. Direct pledging has resumed, however, and measured just under 16% in May. Because the pension funds own about 40% of the market value of listed companies in Iceland and those assets are not pledged, direct pledging of shares owned by other investors amounted to just over 27% in May. On 23 June, index development company MCSI announced that it would classify the Icelandic equity market as a frontier market. Icelandic companies will be eligible for inclusion in MCSI's Frontier Markets Index in June 2021, and their weight in the index could equal around 5%. A significant amount of worldwide capital follows MSCI indices, and presumably, this classification will boost Icelandic companies' visibility among foreign investors.

11. For further information, see the Landsvirkjun website: <https://www.landsvirkjun.is/fyrirtaekid/fjolmidlatorg/frettir/frett/12-milljarda-framkvaemdir-og-afslaettir-til-stornotenda/>

12. 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 equity markets is probably higher.

Bond yields have tumbled

The Central Bank's pandemic response measures, the relaxation of the monetary stance, and the increase in liquidity in circulation have substantially lowered market interest rates, although volatility has been discernible, as Chart I-16 indicates.

By mid-June, the yield on short nominal Treasury bonds had fallen by 2 percentage points since the turn of the year. At the longer end of the yield curve, the decline was somewhat smaller, or just under 1.5 percentage points. This is due in part to an increase in financial institutions' demand for bonds at the short end of the yield curve after the Central Bank stopped offering one-month term deposits, see further discussion in chapter II. The yield curve is now upward-sloping again, after having been all but flat until early March. The yield on one- and five-year indexed Treasury bonds had turned negative by June, after having hovered around zero since the beginning of March.

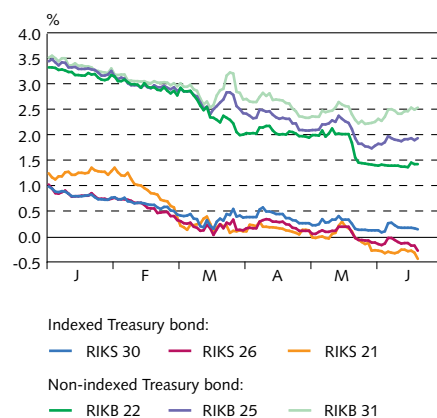
Increased foreign exchange market volatility

The exchange rate of the króna began to fall in early March, around the time the first COVID-19 cases were diagnosed in Iceland. Volatility increased concurrent with the depreciation, and in March and April the Central Bank intervened on the selling side of the market ten times, selling foreign currency for just over 17.3 b.kr. combined, in an attempt to mitigate fluctuations. By end-April, the króna had depreciated by 16% since the turn of the year. The depreciation stemmed from the worsening outlook for Iceland's main export sectors and modest capital outflows from Iceland, particularly among foreign investors. From early May through mid-June, the króna appreciated once again. The Central Bank of Iceland intervened on the buying side of the market three times in May and early June, buying foreign currency for nearly 6.3 b.kr. As the month of June progressed, the króna began to slide again, and the Bank intervened 3 times on the selling side and once on the buying side and sold foreign currency for a total of 3.2 b.kr. but bought for 2.5 b.kr. The foreign exchange market has been quite shallow in the recent term, and small movements in the market have had an outsized impact on volatility. The statement published on 17 March 2020 by the Icelandic Pension Funds Association, announcing the pension funds' plans to refrain from purchasing foreign currency for three months, supported the exchange rate but also reduced market depth, particularly on the buying side. In June, the pension funds extended their commitment to refrain from currency purchases for another three months, until mid-September.

House prices broadly unchanged

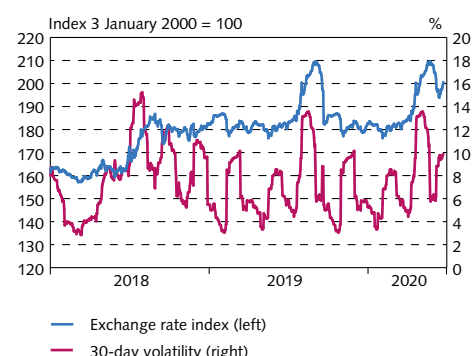
Real house prices have held broadly steady in recent months. In May, the year-on-year change measured 1.1% and was driven entirely by condominium prices, which rose by 1.7% between years. Real prices of single-family homes have been falling since mid-2019, and in May the year-on-year decline measured 1.4%. Real house prices in regional Iceland were up 7.8% year-on-year at the end of May. Capital area housing market turnover declined marginally between years in

Chart I-16
Treasury bond yields
2 January 2020 - 20 June 2020



Source: Nasdaq Iceland.

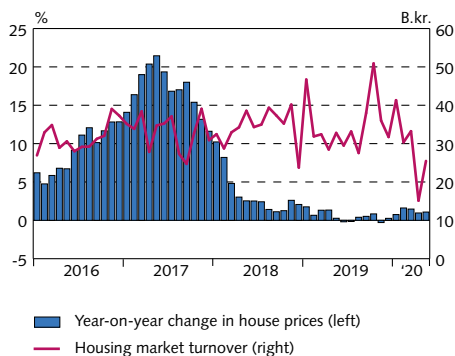
Chart I-17
Exchange rate of the króna¹



1. Exchange rate index based on average imports and exports, narrow trade basket (1%).

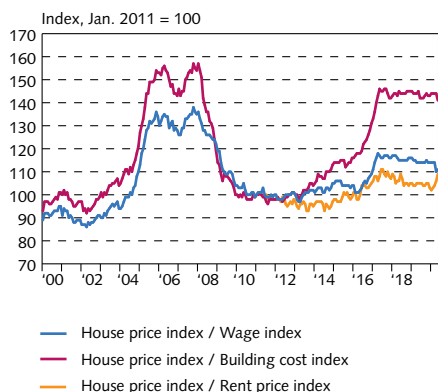
Source: Central Bank of Iceland.

Chart I-18
Real house prices and housing market turnover in greater Reykjavík¹



1. Housing market turnover, at constant December 2019 prices.
Sources: Statistics Iceland, Registers Iceland, Central Bank of Iceland.

Chart I-19
House prices in greater Reykjavík and their determinants



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

Q1/2020 and then fell by 47% in real terms in April. A similar decline could be seen in the number of purchase agreements registered in April. The month was highly unusual, however, owing to the ban on gatherings, a dearth of open house viewings and, most likely, a delay in contract registration as well. Market turnover rose again in May but was still down 22% in real terms relative to May 2019. Turnover for single-family homes has declined much more year-to-date than turnover for condominium housing.

In recent years, capital area house prices have developed broadly in line with the factors that generally determine them, such as rent prices, construction costs, and wages. At the end of May, the rent price index had fallen by 0.2% in the previous twelve months. The index has fallen between months ever since February and will probably continue doing so, owing to the increased supply of flats previously rented out to tourists. Furthermore, if savings increasingly enter the real estate market as a result of lower interest rates, this will push rent down further. Rent prices could also fall if foreign workers, many of whom are renters, leave Iceland because of the deteriorating economic situation. The annual increase in the building cost index measured 1.3% in June, reflecting the offsetting impact of the depreciation of the króna and the temporary increase in value-added tax reimbursements for construction and maintenance. The wage index has somewhat outpaced house prices, rising by 6.4% year-on-year at the end of May, after jumping in April because of contractual wage increases.

Shock to tourism boost housing supply

The supply of residential housing has increased in recent months, following a surge in new construction. The trend is expected to continue in the months to come, as a large number of flats are still under construction, weather-proof, or further along in the construction process. With the steep decline in tourist visits to Iceland, some of the flats previously rented to tourists will probably be put up for sale or offered as long-term rentals. At the onset of the pandemic, an estimated 800-1,000 flats in greater Reykjavík were intended as short-term tourist rentals, or the equivalent of half of the estimated number of new properties put on the market each year in the capital area. Presumably, there is more selling pressure on these flats than is usually the case, as many of them are empty. Their entry into the marketplace could boost turnover and contribute to lower house prices.

Even though the supply of housing in the market has increased for the short term, the pace of new construction has eased considerably. Sales of cement have been declining since the beginning of 2019, and the number of workers in the construction sector has fallen. According to the count carried out by the Federation of Icelandic Industries in March, 5,400 flats were under construction in greater Reykjavík and nearby communities, a decline of 11% from the prior year. The number of flats in the first stages of construction was down by 42% year-on-year.¹³ Construction market activity is likely to con-

13. Construction stages 2 and 3; i.e., up to the weather-proof stage.

tract even further as a result of the economic crisis, and long-term imbalances in supply and demand could develop.

In spite of the worsening economic outlook, interest rate cuts seem to have stimulated demand for residential housing in the past few weeks. Mortgage lending rates are now at an all-time low. The rate cuts have also made it easier for individuals to become homeowners, and the Government has announced increased support for first-time buyers. Furthermore, there are signs that some households have used favourable lending rates as an opportunity to move into larger homes.

Growth in construction sector debt to the banks has eased, after rising swiftly in recent years. Debt owed by construction firms totalled just under 179 b.kr. at the end of April, after decreasing slightly since the turn of the year. It rose by 5.4% year-on-year in real terms and accounted for just under 7% of customer loans. Presumably, a sizeable portion of construction company debt is due to residential property construction.

Strong demand for non-indexed mortgage loans

Even though house prices have only risen slightly in real terms, mortgage debt has grown markedly. In April, twelve-month growth in mortgage debt measured 4.8% in real terms, as compared with 6.1% at the same time in 2019. Mortgage lending rates have fallen steeply in the recent term, and refinancing is common. The composition of mortgage debt has changed significantly in recent years, with growth driven almost entirely by non-indexed loans. At the beginning of 2019, non-indexed loans accounted for just over 22% of household mortgages, and by the end of April 2020 that ratio had risen to 29%. Non-indexed mortgages generally feature a heavier debt service burden and more rapid equity formation than indexed loans, and monthly debt service on non-indexed loans is more sensitive to changes in interest rates.

In the wake of the pandemic, a number of households have applied for moratoria on mortgage payments, which has mitigated the adverse impact on the housing market. Furthermore, interest rate cuts appear to have supported the market. However, as is discussed above, the increase in housing supply could push prices downwards if demand is tepid in the wake of the pandemic. Residential loan-to-value (LTV) ratios are historically low at present, and LTV ratios on new loans have been moderate in the recent term. If the housing market tightens, households should be relatively well prepared to weather the storm.

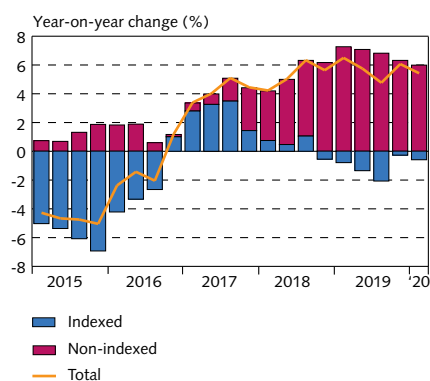
Commercial property price index falls steeply in Q1

The commercial real estate (CRE) price index fell by nearly 12% year-on-year in real terms in Q1/2020. Turnover in the market declined accordingly. Even so, the index is still slightly above its estimated long-term trend value.

Because the full effects of the pandemic did not emerge until very late in the quarter and did not peak until after the quarter ended, further price reductions can probably be expected in Q2 measure-

Chart I-20

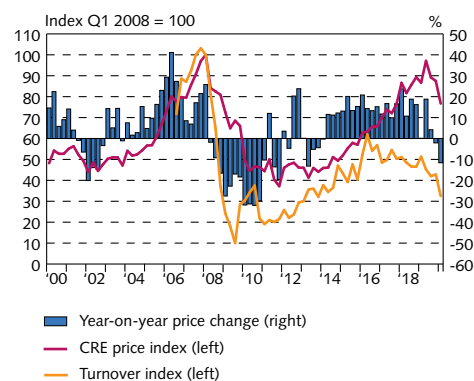
Real growth in household mortgage debt¹



1. Year-on-year change, deflated with the CPI.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-21

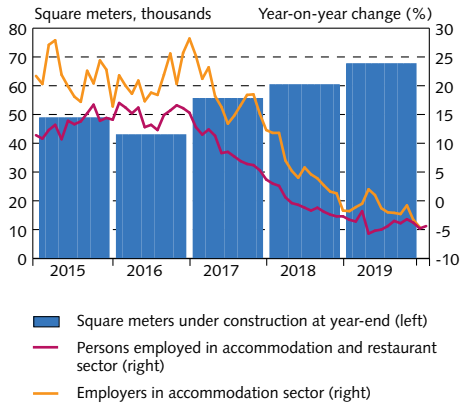
Capital area commercial real estate: real prices and turnover¹



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

Chart I-22

Nationwide supply and demand for hotels and guesthouses¹



1. Hotels and guesthouses in construction stages 1-6 according to Registers Iceland. According to ISAT-2008 sectoral breakdown. Sources: Registers Iceland, Statistics Iceland.

ments.¹⁴ As a result, the coming term could test the resilience of commercial property owners and financing agents.

Glut of hotel and guesthouse supply

The supply of hotels and guesthouses has mushroomed in recent years, and available hotel space is projected to grow markedly in the coming term. According to the Icelandic Property Registry, some 51,000 square metres of accommodation space were under construction in greater Reykjavík at the end of May. Most of these properties were in central Reykjavík. If all of these projects are finished in the next few years, they will add about one-fifth to the capital area's registered accommodation space. Concurrently, commercial bank lending to hotel operators has grown rapidly, rising in real terms by nearly 19% in 2019 and more than 21% in 2018. Even before the pandemic struck, it was obvious that an oversupply of accommodation was in the offing unless tourism activity grew commensurably. The pandemic therefore accelerated a trend that was already underway, as can be seen in Chart I-22, with a more pronounced contraction in demand.

On the whole, the commercial real estate stock grew modestly in 2019, or by 1.4% in terms of square metres. The increase in guest accommodation and restaurant space measured 4.7%, however. A severe glut in supply of other commercial property types is less likely, as little has been built in the past decade. Furthermore, demand for office space remained livelier than demand for other commercial property types well into the winter, according to labour market data from Statistics Iceland.

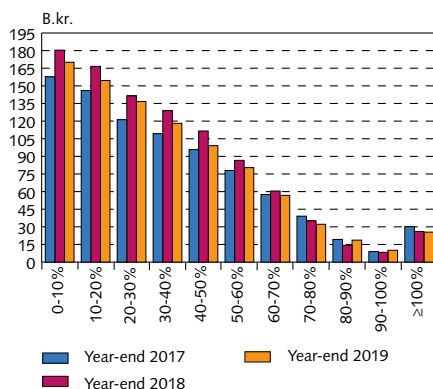
Increased credit risk associated with accommodation

At the end of 2019, about half of the commercial banks' corporate loans, roughly 755 b.kr., were secured by commercial real estate. At that time, the amount of these loans had declined in real terms by 2% since end-2018.¹⁵

The distribution of the loan-to-value (LTV) ratios of CRE-backed loans indicates that the commercial banks preserved their resilience vis-à-vis commercial property until the end of the upward cycle. On the whole, the amount of loans with an LTV ratio of more than 70% declined by over 9% in real terms in 2019. This brings the contraction to 30% over a two-year period, which is normal when house prices rise rapidly. Loans backed by hotels and guesthouses tell a different story, however. For this subset, the amount of loans with an LTV of over 70% rose by nearly 15% in real terms in 2019, and by 37% in 2018 and 2019 combined. This distribution is likely to develop even more unfavourably in 2020, which could lead to increased impairment of the loans in question.

Chart I-23

CRE-backed mortgages, by LTV ratio¹



1. CRE-backed mortgages issued by commercial banks, at constant December 2019 prices, by LTV ratio. Each loan is classified according to LTV range, and the sum of loans in each range is then calculated. Sources: Statistics Iceland, Central Bank of Iceland.

14. The CRE price index measures the average price in registered transactions with office, retail, and industrial space. Hotels and guesthouses are not included. Larger price reductions can be expected in this latter subset of commercial property than in the subset included in the index, but registered transactions involving hotels and guesthouses are relatively rare.

15. Excluding loans to sectors where other collateral weighs much heavier than commercial property, although the property is included in the collateral; i.e., agriculture, fisheries, and transportation and transit. If these sectors are included, loans secured by commercial real estate totalled 902 b.kr.

In general, the commercial banks are well prepared for the risk stemming from high LTV ratios on commercial property. The total amount of CRE-backed loans with LTVs of more than 70% equalled about 15% of the banks' common equity Tier 1 (CET1) capital at the beginning of this year. Unhedged and poorly hedged credit risk due to hotel and guesthouse projects in particular accounted for a very small share of the banks' capital base.

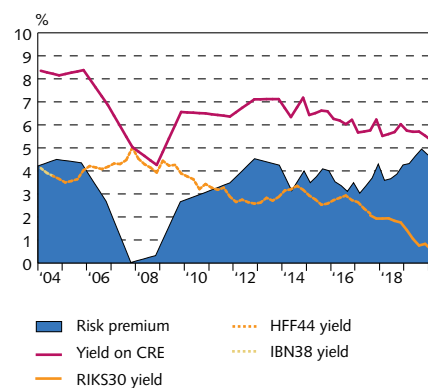
Strong real estate companies can be a stabiliser

Large real estate companies can diversify risk more effectively, and they have readier access to credit than smaller companies and firms that own their own business property. Their resilience is important, however — i.e., their balance sheet solvency and their cash flow solvency — because without such resilience, these firms could have a destabilising effect on the market.¹⁶

Given the strength of Iceland's largest commercial property companies, they could potentially have a stabilising influence on the market under current conditions; for instance, by selling few assets and perhaps even purchasing once prices have fallen. Returns on the investment assets of Iceland's largest commercial property companies – Eik, Reginn, and Reitir – continued to fall in Q1, and amounted to 5.3% on a yearly basis. The riskless yield has fallen significantly, however, and the calculated risk premium therefore remains high in historical context. The yield does not indicate that asset values have generally been inflated in the companies' accounts.¹⁷ Their combined equity ratio was just under 31% at the end of Q1, and their LTV ratio was about 64%; therefore, they have some elbow room as regards marketable bond terms concerning solvency and collateral capacity.

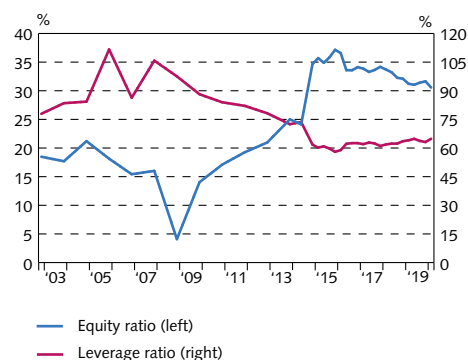
At the beginning of the year, the companies' liquidity position was quite satisfactory, their cash flow relatively strong, and their interest coverage ratio well above the threshold for marketable bonds. Furthermore, they took action to preserve their cash position in Q1, by postponing dividend payments and buyback plans, taking new loans, obtaining loan pledges, and deferring payments on bank financing. In addition, they have the option of postponing some of the investment projects planned for this year. As a result, they are well able to withstand the repercussions of the pandemic through 2020, even though their operations might weaken considerably relative to 2019. Nevertheless, they have every reason to safeguard their resilience, particularly if the effects of the pandemic prove long-lasting.

Chart I-24
Yield and risk premium on commercial real estate¹



1. Yield is defined as annualised net operating income divided by average investment assets over the accounting period. Risk premium is defined as yield in excess of the risk free rate of return.
Sources: Leading real estate firms' annual and interim financial statements, Government Debt Management.

Chart I-25
Combined equity and leverage ratios of leading commercial real estate firms¹

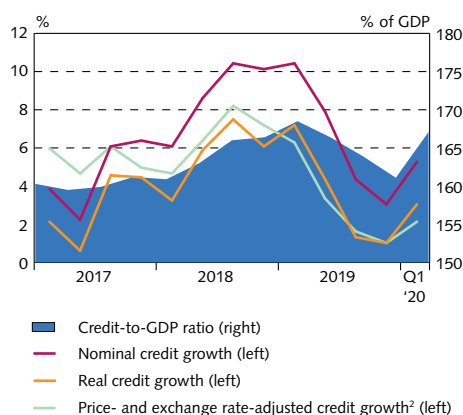


1. In this context, the leverage ratio refers to total liabilities net of subordinated bonds and deferred tax liabilities, divided by the book value of investment assets according to published financial statements.
Sources: Leading real estate firms' annual and interim financial statements.

16. Data from the US show that, in a mild economic contraction, default on bank loans to commercial property companies has generally been negligible in recent decades, whereas in a deep financial crisis, default has been widespread. In addition, the story of the Swedish financial crisis in the 1990s offers clear examples of the need for resilient real estate firms (see, for instance, Englund (2015). The Swedish 1990s banking crisis. A revisit in the light of recent experience).

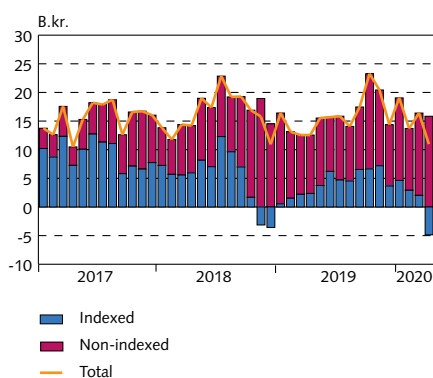
17. It is noteworthy, though, how dissimilarly the companies treated the impact of the pandemic within their valuation models when they calculated investment asset value changes for their Q1 financial statements.

Chart I-26
Private sector credit growth¹



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

Chart I-27
Net new lending to households¹



1. Net new household loans from banks, pension funds and the Housing and Construction Authority, at fixed prices.
Sources: Statistics Iceland, Central Bank of Iceland.

Risk linked to private sector debt

Private sector debt still growing

Annual growth in private sector debt measured 3% in real terms in Q1/2020.¹⁸ Household debt grew by 4.1% over the period and corporate debt by 2.1%. The private sector debt-to-GDP ratio was 167% at the end of the quarter, a 6 percentage point increase from the beginning of the year. The rise is attributable to a contraction in GDP, continued growth in household debt, and the depreciation of the króna, which has increased corporate debt in krónur terms. Some of the pandemic response measures – the bridge loans, support loans, and policy rate cuts adopted by the authorities, plus the commercial banks' willingness to defer customers' loan payments – could foster increased indebtedness. In all likelihood, the private sector debt ratio will rise in the coming term, with growing debt and shrinking GDP.

Households seek out non-indexed loans

Growth in household debt appears to have lost pace in April, due to increased uncertainty and public health measures. Net new lending to households totalled just under 11 b.kr. during the month, about one-third below the average for the previous twelve months. New loans from pension funds contracted markedly, whereas the banks have stepped up their lending somewhat. It would be premature to draw sweeping conclusions from the data for a single month, but it appears as though households are refinancing older pension fund loans with new loans from the commercial banks, which are now offering lower interest rates on non-indexed loans than virtually all of the pension funds. Demand for residential mortgages is brisk, both for refinancing and for new home purchase loans. Historically low mortgage lending rates fuel this demand and encourage households both to undertake new investment and construction and to refinance less favourable loans. It is also relatively common for individuals to take advantage of the collateral capacity they have gained in recent years from rising house prices or deleveraging, and use it to boost their liquidity position or to refinance unfavourable debt.

It is interesting to note that households are turning in greater measure to non-indexed variable-rate loans. Interest rate risk is greater on such loans, as small nominal interest rate movements can push debt service up quickly and by large proportions in a low-interest environment.

Corporate debt on the wane if exchange rate effects are ignored

Data on corporate debt to domestic financial institutions suggest that, on the whole, new capital flows to companies are limited. Net new corporate loans from the domestic systemically important banks (D-SIB) totalled a negative 3,6 bn.kr. in May, and the D-SIBs' credit stock shrank somewhat if exchange rate effects are ignored. This trend had begun before the pandemic started to make its presence felt in Iceland, however. Companies' debt to the D-SIBs has been

18. Debt owed by households and non-financial companies to domestic and foreign financial institutions, and issued marketable bonds.

declining in real terms since Q2/2019. Currently, most of the growth in total corporate debt is due to exchange rate effects. Just over a third of corporate debt is in foreign currencies, and exchange rate movements therefore have a strong impact on companies' debt position in krónur terms. Total price- and exchange rate-adjusted corporate debt contracted by 0.3% at the end of Q1/2020 from the same period last year.¹⁹

There is some uncertainty about how corporate debt will develop in the coming term. Interest rates have fallen steeply, which should strengthen firms' position and lower their debt service, all else being equal. On the other hand, reductions in the Central Bank's key interest rate have not resulted in lower effective corporate lending rates across the board; instead, they have tended to push against lending rate hikes due to revaluation of risk in the current unfavourable economic environment. There appears to be limited demand for credit financing for projects deemed sufficiently profitable. Other things being equal, the bridge loans and support loans introduced by the Government will lead to stronger growth in bank lending, provided that the Government guarantees the loans, partly or in full, and thereby takes on at least some of the credit risk.

Risk in the private sector

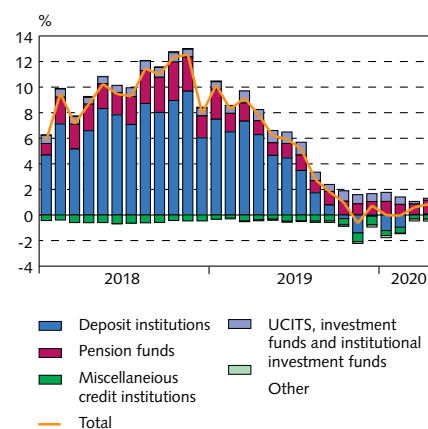
Surge in unemployment

The COVID-19 pandemic and its implications have had a profound impact on Icelandic households. The most serious is the impact on the labour market, with many companies scaling down or even halting operations. As a result, large numbers of employees have either had their working hours reduced or have lost their jobs entirely. Unemployment has soared and, according to the Bank's most recent macroeconomic forecast, is expected to approach 12% in Q3 and measure 9% for the year as a whole, as compared with 3.6% in 2019 and the post-crisis peak of 7.6% in 2010.

The authorities have responded with a range of measures to support households. Included in them are the part-time employment option, payment of wages during workers' termination notice period, supplemental child benefit payments, and third-pillar pension savings withdrawals. Financial institutions and pension funds have offered borrowers moratoria on loan payments. Interest rate reductions have also boosted many households' disposable income. Further discussion of the Government measures and their impact on financial stability can be found in the Box entitled *Pandemic response measures*.

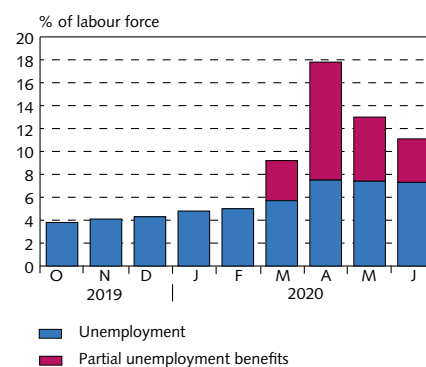
The part-time option has cushioned against the blow to the labour market, guaranteeing that workers receive wages up to a specified maximum. It can be assumed that the number of people receiving part-time unemployment benefits peaked at over 32,000, or around 17% of the labour force. The part-time benefits measure has been extended until the end of August, but the eligibility requirements have been tightened. The tighter requirements and the relaxation of

Chart I-28
Corporate debt, by lender¹



1. Yearly real change. Debt to domestic financial institutions.
Sources: Statistics Iceland, Central Bank of Iceland.

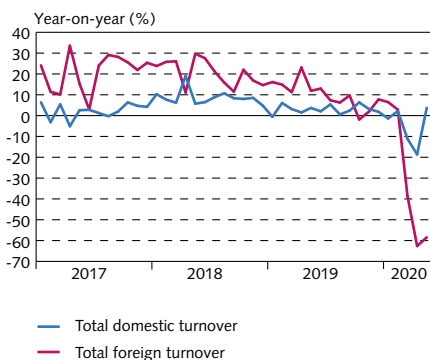
Chart I-29
Registered unemployment¹
October 2019 - June 2020



1. Directorate of Labour forecast for June.
Source: Directorate of Labour.

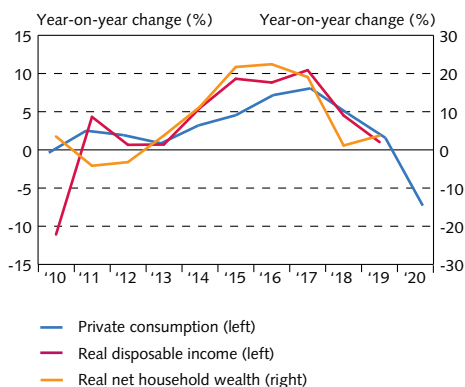
19. Foreign-denominated debt at constant exchange rates and indexed debt at constant prices.

Chart I-30
Payment card turnover, domestic cards
January 2017 - May 2020



Source: Central Bank of Iceland.

Chart I-31
Private consumption, disposable income,
and household wealth¹



1. Central Bank baseline forecast for 2020, published in Monetary Bulletin 2020/2. Net household wealth is net financial wealth, including housing wealth and excluding household debt.
Sources: Statistics Iceland, Central Bank of Iceland.

the ban on gatherings have somewhat reduced the use of the part-time option. In May, about 17,000 people, or 8% of the labour force, were receiving part-time unemployment benefits.

Most of those whose working hours have been reduced are employed in parts of the country where tourism is prominent, such as greater Reykjavík and the Suðurnes peninsula. Data from the Directorate of Labour also show that most of those registered as unemployed in May were in the 25-29 age group; furthermore, unemployment was high among individuals who had been employed in retail stores, restaurants, and hotels/guesthouses. It is likely, though, that these groups have fewer obligations vis-à-vis the financial system than many others do.

Have interest rate cuts stimulated investment plans?

The Central Bank's most recent macroeconomic forecast assumes that private consumption will contract sharply this year. High unemployment, reduced real disposable income, and increased uncertainty are likely to discourage household consumption. Domestic payment card turnover declined steeply after the pandemic started to spread, because of public health measures and changes in consumption patterns. It picked up when the public health measures were eased in May, and for the year as a whole, it is expected to be robust. Households' overseas spending has virtually dried up, and at least some of the consumption that would ordinarily take place abroad will show in domestic card turnover figures.

Household arrears have increased somewhat in the past few months. The non-performing loan ratio on the domestic systemically important banks' (D-SIB) household loans was 2% at the end of February but had risen to 2.5% by the end of April.²⁰ The rise is due almost entirely to an increase in frozen loans to individuals. Furthermore, at the beginning of June, 9.4% of the D-SIBs' household loans and 5% of loans to fund members issued by the largest pension funds were in moratorium as a result of the pandemic. These loans are not considered non-performing. The number of individuals on the default register has held broadly unchanged in the past few months. The measures offered by financial institutions and pension funds result in a delay in default classification. Further ahead, payment difficulties and default can be expected to increase in line with rising unemployment. Households' balance sheets are stronger than they have been for years, however. Many households have deleveraged significantly since the 2008 financial crisis. Their disposable income has risen markedly and is historically high, and their net wealth is at an all-time high. Therefore, households should be well prepared to face the repercussions of the pandemic, particularly if unemployment does not become entrenched.

In recent months, households have taken the opportunity afforded by lower interest rates and refinanced existing mortgage debt.

20. This refers to non-performing loans according to the cross-default method, according to which all of a borrower's loans are considered non-performing if one loan is frozen or in arrears by 90 days or more, or if the borrower is deemed unlikely to pay their obligations when due.

Declining average loan-to-value (LTV) ratios on new loans give a clear indication of the rising proportion of refinancing. Households' capacity to purchase real estate has also increased, as debt service burdens have declined with falling interest rates. Low deposit interest rates combined with low lending rates may well provide an incentive to invest, prompting households to put their savings into other assets. The temporary authorisation for third-pillar pension savings withdrawals has the same effect.

The pandemic has a broad-based impact on businesses

Many companies have suffered revenue losses due to travel restrictions, the ban on gatherings, and effects deriving from them. The ensuing contraction extends to virtually the entire economy but has dealt the heaviest blow to tourism and related sectors, and sectors which are directly affected by the travel restrictions and ban on gatherings. Companies in most sectors of the economy have built up significant resilience in recent years, as can be seen, for instance, in historically high equity ratios. Although last year's shocks took their toll, companies are by and large better prepared to face the current crisis than they have generally been in the past.

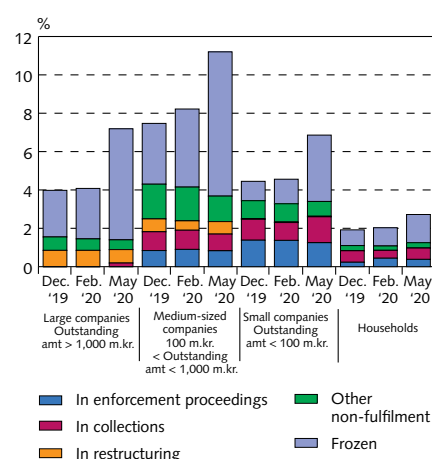
The impact of the pandemic has only begun to show to a limited extent in available data on firms' position. What perhaps describes their position best at this point in time is the streamlining they have undertaken and their use of the measures offered by financial institutions and the Government. Those measures are discussed in detail in a Box at the end of this report. Directorate of Labour figures indicate an increase in layoffs across all sectors. At the end of May, about 4,200 companies were using the part-time option, representing the sectors of the economy more or less equally. That number peaked in April at just over 6,300. Roughly estimated, this includes about 14% of all companies engaged in commercial activities. Just over 1,800 companies had applied for moratoria on payment of loans from the domestic systemically important banks (D-SIB) by mid-June, and the amount of the loans protected by these moratoria totalled about 17% of the D-SIBs' corporate loans. The vast majority of the loans in moratorium are to tourism and real estate companies. There has also been a marked increase in D-SIB loans that are recorded as frozen, but these are considered non-performing.²¹ The D-SIBs' non-performing corporate loan ratio had risen from 5% in February to 8% by the end of May.²² The increase is due for the most part to companies in the services sector. Firms' deteriorating position, the poorer overall outlook, and dramatically increased uncertainty can be seen in increased impairment of the D-SIBs' corporate loans in Q1. This trend is likely

21. On 23 March, credit institutions formally agreed among themselves to grant special temporary moratoria on loan payments due to the pandemic. The moratoria in question are subject to conditions listed in the agreement. If a borrower satisfies the specified requirements, that borrower's loans are considered protected by moratorium and are not classified as non-performing. The loans of those who do not satisfy the requirements but nevertheless receive a moratorium are recorded as frozen and classified as non-performing.

22. This refers to non-performing loans according to the cross-default method, according to which all of a borrower's loans are considered non-performing if one loan is frozen or in arrears by 90 days or more, or if the borrower is deemed unlikely to pay their obligations when due.

Chart I-32

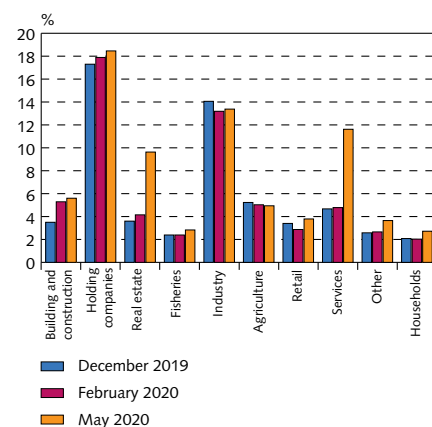
D-SIB: Status of non-performing loans, by claim amount¹



1. Parent companies, book value.
Source: Central Bank of Iceland.

Chart I-33

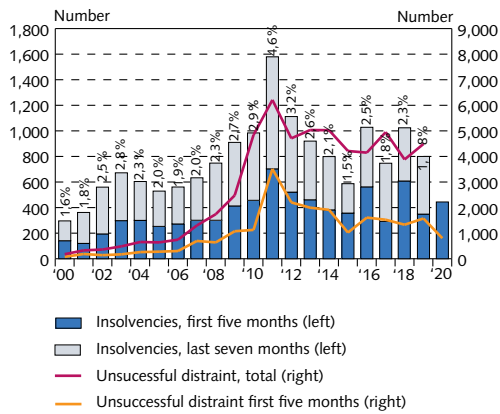
D-SIB: non-performing loan ratios¹



1. Parent companies, book value. Non-performing loans according to the cross-default method, according to which all of a borrower's loans are considered non-performing if one loan is frozen or in arrears by 90 days or more, or if the borrower is deemed unlikely to pay their obligations when due.

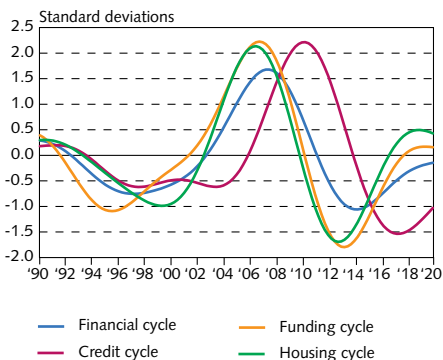
Source: Central bank of Iceland.

Chart I-34
Companies insolvencies and unsuccessful
distrain actions¹



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

Chart I-35
Financial cycle and subcycles¹



1. The financial cycle itself, the blue line, is the simple average of the subcycles. Each subcycle is the simple average of cyclical components from variables related to credit, housing and bank funding, respectively. Cyclical components are obtained with a Christiano-Fitzgerald band-pass filter with a frequency band of 8-30 years.
Sources: Registers Iceland, Statistics Iceland, Central Bank of Iceland.

to continue in the quarters to come. Impairment of the banks' loans is discussed further in Chapter II.

Overall, the number of firms on the default register has not risen in recent months, and tourism is the only sector to see an increase in the past few years. In general, firms are not entered to the default register until they have been in arrears for some time. The number of firms in default is likely to rise in the coming term. On the other hand, company insolvencies have increased year-on-year in 2020 to date. The rise is most pronounced in the tourism and construction sectors. In the first five months of this year, 444 firms were declared insolvent, as opposed to 349 over the same period in 2019. It should be noted that this increase is not limited to the months after the pandemic spread in Iceland, as a year-on-year rise was already evident in both January and February. This suggests that the rise in company failures is the result of economic developments in 2019, as insolvencies generally lag well behind economic contractions.²³ Figures on unsuccessful distrain measures have moved in the opposite direction, with a year-on-year decline of about half in the first four months of 2020.

The financial cycle

Reassessment of risk

Economic agents' perceptions of asset values and risk are the drivers of the financial cycle. Risk appetite and financial conditions can create strong cyclical movements that show in asset prices and debt levels.²⁴ Indicators imply that risk appetite has diminished. In mid-2019, interest rate spreads on the commercial banks' corporate loans began to rise and appetite for new corporate lending to fall; for instance, Arion Bank had plans to downsize its corporate loan portfolio by 20%. It is also conceivable that weaker lending growth and higher credit spreads stem from a shortage of profitable investments. Lending for new tourism projects contracted as early as 2018. The COVID-19 pandemic has accelerated this trend; for instance, corporate credit spreads in foreign markets have risen steeply, while corporate and sovereign credit ratings have fallen. This raises the cost of the banks' new foreign funding, although it might not have a strong direct impact as yet because the banks have ample foreign liquidity at present.

A composite measure of the financial cycle

A useful measure of the financial cycle can be obtained by identifying medium-term fluctuations in private sector debt, house prices, and commercial bank funding.²⁵ The financial cycle that lasted through the end of Q1/2020 is shown in Chart I-35 as a simple average of these.

23. Examining the correlation between the rate of company failures and other economic variables reveals a strong cross-correlation between private consumption growth and the insolvency rate. In Iceland, insolvencies have generally increased approximately 1-2 years after a slowdown in private consumption growth.

24. Borio, C. (2012). The financial cycle and macroeconomics: What have we learnt? BIS Working Papers no. 395.

25. See, for example, Drehmann, M. et al. (2012). Characterising the financial cycle: Don't lose sight of the medium term! BIS Working Papers no. 380. and Einarsson, B. et al. (2016). The long history of financial boom-bust cycles in Iceland. Part II: Financial cycles. Working Paper no. 72. Central Bank of Iceland.

The housing cycle showed strong signs of an upswing until 2018, with house prices rising steeply from 2014 well into H2/2017, although the annual growth rate was high for a somewhat longer period. Real house prices have been virtually flat since then, however, and have fallen as a share of construction costs and disposable income. Commercial property prices rose swiftly until mid-2019 but have fallen noticeably since, in terms of both market prices and real estate companies' own appraisals. The housing cycle reversed slightly beginning in H1/2019, but it is conceivable that lower interest rates and a dearth of investment opportunities might liven it up again. Such a boost could turn out fragile, however, if the shock to the tourism industry proves long-lasting.

The debt cycle has tracked the housing cycle with a significant lag. Twelve-month real growth in total debt peaked in H2/2018 and H1/2019, after a growth phase of roughly three years. Household debt is still rising, owing in part to lower interest rates and the fact that banks and pension funds consider households reliable borrowers. Growth in corporate debt has stalled, however, as is discussed in the section entitled Risk linked to private sector debt. The most recent measurement is also affected by the debt-to-GDP ratio, which has risen because of a contraction in GDP in Q1/2020. Increased debt accumulation is a normal response to the ongoing crisis, as firms must continue to pay expenses even though many of them have seen their revenues collapse with the contraction in demand. The authorities' responses have facilitated private sector access to credit, and without them the situation would probably have tightened significantly because of increased credit risk. As a result, the debt cycle will probably continue to rise, at least for the duration of the Government support measures.

The financing cycle has risen steeply in recent years, partly because the banks have had easier access to foreign funding. They have borrowed little from abroad this year, especially after interest premia started to rise. Instead, they have concentrated thus far on buying back their own bonds and increasing the weight of deposits in their funding. The financing cycle is therefore likely to plateau or trend downwards in the coming term.

The impact of the Government's response on the financial cycle

Because of the Government's response measures, the economic shock will be milder than it would have been if firms had been forced into restructuring. The Government guarantee of bridge loans and support loans and the lifting of capital buffers have created an incentive for lenders to maintain firms' access to credit. The decline in interest rates encourages companies themselves to remain in operation rather than scaling down their activities and paying off debt. These significant steps have helped prevent the financial cycle from reversing with the business cycle.

It is important to distinguish between the crisis management period and the crisis resolution period that comes afterwards.²⁶ When

26. See, for example, Borio, C. (2012). The financial cycle and macroeconomics: What have we learnt? *BIS Working Papers* no. 395.

the pandemic and the economic shock are verifiably over, it will be the role of the authorities to ensure that the financial system can support the next expansionary phase without leading to increased cyclical systemic risk, such as through excessive credit growth and unsustainable asset price hikes.

Among other things, responses to the pandemic must promote financial institutions' continued stability and resilience and must be consistent with long-term financial stability policy. This can be achieved by setting explicit validity periods for Government measures.²⁷ The Icelandic authorities' response measures do this to a degree: bridge loans are subject to a maximum term of 30 months, and support loans have a specified term of 30 months to four years. The same applies to deferred payments of public levies and the part-time option. Other measures will have to be terminated specifically.

27. See, for example, Borio, C. & Restoy, F. (2020). Reflections on regulatory responses to the Covid-19 pandemic. *FSI Briefs* no. 1.

II The financial system

Iceland's large commercial banks are well prepared for the operating difficulties brought on by the COVID-19 pandemic. The impact had already started to show in Q1/2020 earnings reports, with increased loan impairment and losses on financial activities. Additional loan impairment is clearly in the offing. The banks are quite resilient, thanks to a strong capital and liquidity position, which is well above Central Bank requirements. The Central Bank has released the countercyclical capital buffer, and all of the banks have shelved plans to pay dividends. This allows them scope for write-offs and new lending at the same time, thereby giving them the capacity to support households and businesses during the ongoing crisis. The Central Bank's interest rate cuts have counteracted the erosion in loan quality due to the pandemic, while at the same time putting pressure on net interest income. The banks' liquidity has strengthened year-to-date, both overall and in Icelandic krónur. The Central Bank has adopted measures that have strengthened both the banks' liquidity position and their access to liquidity. In addition, reduced lending and increased saving have bolstered their liquidity position for the present. In all likelihood, the banks will have to tap their liquidity buffers in the months to come, in response to an increase in both non-performing loans and lending growth, among other things. Their domestic funding has been successful, but premia on foreign debt issues have risen sharply. The banks have no need for foreign-denominated refinancing in the next few months, however.

Financial system assets totalled 420% of GDP at the end of Q1/2020. Deposit institutions' assets now account for about a third of total financial system assets, with some 97% of them held by systemically important banks. The pension funds hold roughly 41% of total assets, and their share has grown steadily in recent years. The share held by other financial system entities has shrunk in the recent term.

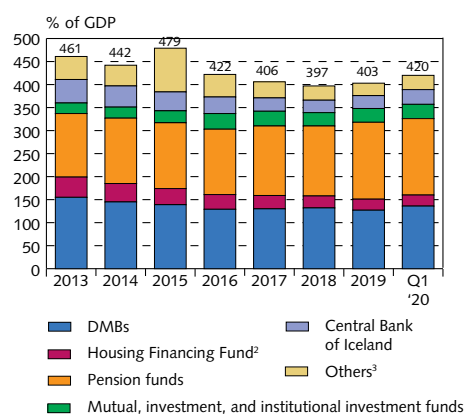
Statutory amendments passed at the end of 2019 provided for the merger of the Housing Financing Fund (HFF) and the Iceland Construction Authority into a single new institution, the Housing and Construction Authority. With this change, the financial administration of previous HFF activities was segregated from the new merged agency. The Housing and Construction Authority will oversee social lending and initial contributions for rental apartment construction, for example, as well as administering other housing support. The Minister of Finance and Economic Affairs will then process the assets and liabilities remaining after the division of the HFF, referred to as the ÍL Fund.

Pension fund assets were virtually unchanged quarter-on-quarter at the end of Q1/2020, measuring 166% of GDP. This ratio rose steeply in 2019, however, owing in particular to an increase in foreign assets and loans to fund members. Thus far in 2020, the pension funds have decided to curtail their foreign investments substantially. Furthermore, there has been a turnaround in lending to fund members, concurrent with growing demand for non-indexed variable-rate loans for further discussion, see *Risk linked to domestic assets markets* and *Risk linked to private sector debt*.¹ Their assets grew markedly in April, however, or by 223 b.kr., mostly as a result of price hikes in foreign markets.

The domestic systemically important banks (D-SIB) have substantial lending capacity in terms of both capital and liquidity. In this respect, then, they are well positioned to face the economic shock brought on by the pandemic and to support the economy by inter-

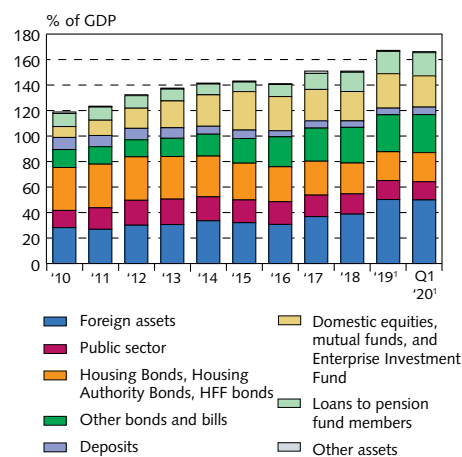
1. See, for example, <https://www.sedlabanki.is/utgefing-efni/frettir-og-tilkynningar/fret-tasafn/frett/2020/06/15/Yfirlysing-Sedlabanka-Islands-vegna-framlengds-hles-a-gjaldeyriskaupum-lifeyrissjoda/>.

Chart II-1
Financial system: Assets as % of GDP¹



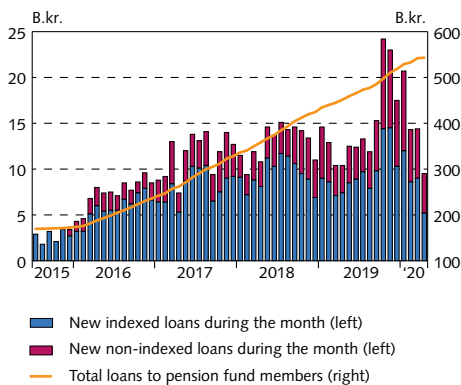
1. Parent companies. 2. HFF merged with the Iceland Construction Authority on 1 Jan. '20. HFF assets as of end-Q1/'20 are the assets of the ÍL Fund, which took over the processing of the HFF's assets and liabilities 1. Jan. '20. 3. Other: Failed financial institutions that have undergone composition are included with other financial institutions as of the time their composition agreements were approved. The Central Bank of Iceland Holding Company ehf. is also included with other financial institutions from its establishment in Dec. '09 until its dissolution in Feb. '19.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-2
Pension funds: Distribution of assets



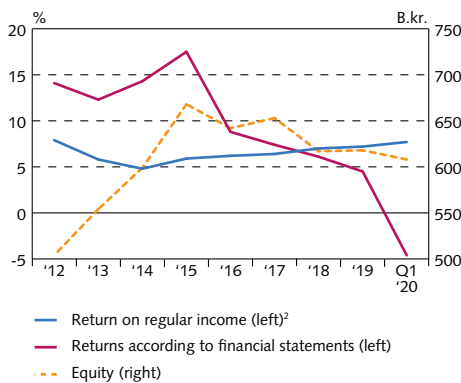
1. Based on preliminary figures.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-3

Loans to pension fund members¹

1. Figures are based on balance sheet summaries submitted to the Central Bank by the pension funds.
Source: Central Bank of Iceland.

Chart II-4

D-SIBs' returns¹

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

mediating credit. All of them will have to deal with loan impairment, however, signs of which were already emerging in Q1. The banks derive a large share of their income from net interest income, and the Central Bank's interest rate cuts have put pressure on interest rate spreads. The D-SIBs have maintained wide interest rate spreads despite Central Bank rate cuts, by lowering deposit rates in tandem with lending rates; however, their scope to do this has narrowed as the Bank's key rate has fallen. Lower interest rates adversely affect the banks' net interest income, posing an additional challenge in terms of cost control. Increased borrowing alongside default will also affect the banks' liquidity.

Profitability

The pandemic has had a profound impact on the banks' operations

The effects of the COVID-19 pandemic showed clearly in the operations of the domestic systemically important banks (D-SIB) in Q1/2020, with increased impairment and strong negative effects of financial activities leading to operating losses. The banks operated at a combined loss of 7.2 b.kr., as compared with a profit of 10.4 b.kr. in Q1/2019 and nearly 28 b.kr. in 2019 as a whole. Asset prices have risen somewhat in Q2, after declining in the previous quarter; therefore, some of the loss on financial activities will probably be recouped. The situation is highly uncertain, however, and it is clear that impairment will be much higher in 2020 and 2021 than in a normal operating environment.

The banks' return on equity was negative by 4.6% in Q1/2020, whereas it was positive by 4.5% in 2019 and 6% in 2018. The reduction in returns between 2018 and 2019 is due in large part to negative returns on discontinued operations in the amount of 13 b.kr. If this is excluded, the D-SIBs' year-2019 return on equity measures 6.6%. Despite negative returns in Q1/2020, the D-SIBs' core operations continue to improve, with returns on regular income measuring 7.7% during the quarter, an increase of more than 2 percentage points in the past two years.²

One of the Government's pandemic response measures was to lower levies on the banks by expediting the reduction of the bank tax, which was 0.376% at the end of 2019 and was set to decrease to 0.145% in equal increments between 2020 and 2023.³ With the new Government measures, the tax rate was immediately lowered to 0.145% in 2020. For 2019, the bank tax totalled 10.7 b.kr., but with the reduction between 2019 and 2020, the banks' tax payments for 2020 will decline by 7-8 b.kr. The reduction in the bank tax represents lost revenue for the Treasury but will strengthen the position of the banks and their customers.

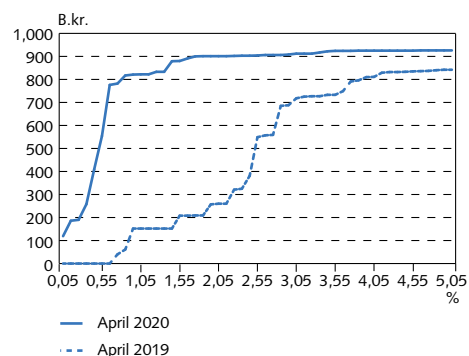
- Returns on regular income are based on net interest income and net fee and commission income, less regular expenses, which are defined as salaries and related expenses plus other operating expenses, apart from one-off cost items. The tax rate of 20% is based on the average balance of capital.
- The special tax on financial institutions (bank tax) was 0.376% of total liabilities in excess of 50 b.kr. as of end-2019, but the tax rate has been cut to 0.145% for 2020. See <https://www.althingi.is/altext/150/s/1206.html>.

Interest rate differential remains wide

With the change in economic outlook, the Central Bank has adopted a range of measures to support demand, keep liquidity in circulation, and preserve the stability of the financial system. Among other things, inflation expectations firmly anchored to the target have enabled the Bank to lower its key interest rate from 4.5% to 1% over the past 13 months. Changes in Central Bank rates have generally affected interest rates on short-term liabilities in the financial market first, but they have also surfaced quickly in rates on variable long-term obligations. Variable non-indexed deposit and lending rates have developed broadly in line with the Bank's key rate in recent years — at least until the current monetary easing cycle began in spring 2019. The current easing cycle has not been transmitted as effectively to the D-SIBs' deposit and lending rates. In particular, rates on new corporate loans have fallen only slightly.

Net interest income is one of the pillars of the banks' operations, providing 70% of their total income. The banks' overall profitability has been declining in recent years and is now below their long-term targets. If a further decline is to be prevented, the banks must try to protect the interest rate spreads on assets and liabilities, thereby keeping net interest income from falling. For some time, the banks have had limited room to transmit reductions in the Central Bank's key rate to deposit rates. At present, a large share of non-indexed sight deposits bear interest of 0.7% or less. Just over a fifth of non-indexed sight deposits bear 0% interest. As Chart II-6 indicates, rates on non-indexed sight deposits held by households and businesses have moved virtually in tandem with one another in the recent term. However, from the time the current easing cycle began through end-April 2020, these rates have fallen by 1.8 percentage points, while the Bank's key rate has fallen by 2.75 percentage points. The chart also shows that variable rates on non-indexed loans to households have fallen somewhat more than rates on comparable loans to businesses, or by 2.3 percentage points for household loans versus 1.5 percentage points for corporate loans.⁴ An examination of new loans reveals that interest rates have changed broadly in line with rates on older household loans. The same cannot be said of corporate loans, however, as rates on new non-indexed loans to companies fell by 0.8 percentage points between end-April 2019 and end-April 2020, while the Central Bank's key rate fell 2.75 percentage points. The transmission of the monetary stance to lending rates has thus been comparable for old and new household loans, but for corporate loans it has been more effective for older loans than for new ones. Central Bank data therefore imply that credit spreads on new corporate loans have been rising in comparison with the total non-indexed credit stock. This is due mainly to a reassessment by the banks of risk and pricing on corporate loans as a result of the deteriorating outlook for tourism and the rise in overall economic uncertainty. In some instances, this revaluation of risk compensates for underpricing in the past, when the banks were operating at sizeable profits and could not pay dividends. Finally, Arion Bank

Chart II-5
Interest rates on variable-rate
króna-denominated deposits¹

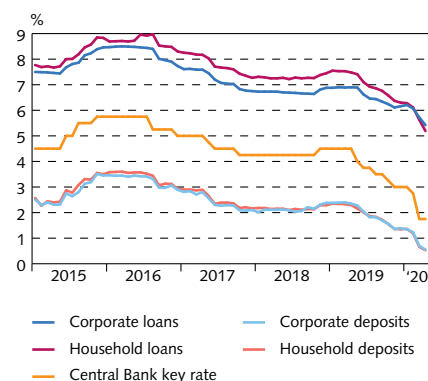


1. Total stock of private sector deposits. Weighted average interest rates.

Source: Central Bank of Iceland.

Chart II-6
Interest rates on variable-rate non-indexed
deposits and loans¹

January 2015 - April 2020

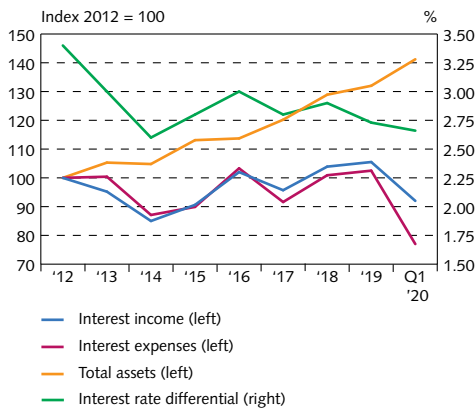


1. Total stock and weighted average interest rates.

Source: Central Bank of Iceland.

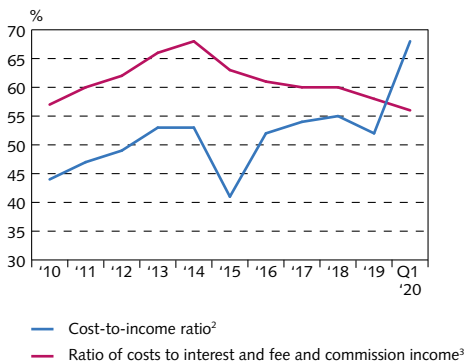
4. Variable non-indexed mortgage rates fell by 2.1 percentage points over the same period.

Chart II-7

D-SIB: Interest income, interest expense and interest rate differential¹

1. Domestic systemically important banks, consolidated figures.
2. Annualised Q1/2020 data.
Sources: Commercial banks' financial statements.

Chart II-8

D-SIB: Cost-to-income ratios¹

1. Domestic systemically important banks, consolidated figures. Valitor excluded in 2017 - 2020. 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.

has stated that its objective is to shrink its corporate loan portfolio by 20%. Arion's actions have resulted in higher credit spreads for some borrowers, while others have taken their business elsewhere and have probably had to accept higher lending rates than before.

Although the D-SIBs' deposit and lending rates have not moved in lock-step with changes in the Central Bank's key rate, the reduction in the key rate in Q1/2020 clearly affected the banks' interest income and expense, although interest expense fell proportionally more than interest income (Chart II-7). Because of the reduction in interest income, the interest rate spread in terms of the average balance of total assets was just under 2.7% during the quarter, slightly less than in 2019 despite an increase in total assets.

Abrupt reversal in net financial income

In Q1/2020, the banks' net income from financial activities was negative by 6.2 b.kr., whereas it was positive by 5 b.kr. in Q1/2019 and by 10.3 b.kr. in 2019 as a whole. The loss in Q1/2020 is due mainly to changes in the fair value of equity securities as a result of unfavourable developments in the markets. Some of this loss will presumably be recouped in Q2, however, as asset prices have risen during the quarter. Uncertainty remains high, though, and a setback following border re-openings could have a negative impact on markets, and therefore on financial income. Net fee and commission income totalled 7.5 b.kr. in Q1/2020, slightly below the quarterly average in 2019 but an increase of 0.6 b.kr. relative to Q1/2019. The effects of reduced payment card use abroad did not begin to show until mid-March and will not emerge in full until Q2. Other operating income for Q1 totalled 0.5 b.kr., some 2.4 b.kr. less than in the same quarter of 2019.

Real costs decline

The D-SIBs' combined operating expenses for Q1/2020 totalled 18.4 b.kr., a decrease of 8% year-on-year in real terms. The banks have taken a number of cost-cutting steps, including laying off staff, merging branches and reducing their number, and merging service offerings.⁵ The results of these measures are coming to the fore. At the end of March 2020, the number of full-time positions equivalents at the banks was 2,680, a year-on-year reduction of 230, most of it at Arion Bank. The banks are planning to continue cutting staff. Their expense ratio rose sharply in Q1/2020, to 68%, owing to reduced income because of the pandemic. Relative to regular income, however, their costs have fallen.

Iceland's banks have been successful in cutting costs, but even so, their expenses remain high relative to their European counterparts (Chart II-9). In 2019, for example, the D-SIBs' wage costs came to 1.2% of their total assets, and total expenses were 2.2% of total assets, while the same ratios in the other Nordic countries were 0.4-0.5% and 0.7-0.9%, respectively. In Nordic banks similar in size to Iceland's banks, year-2019 wage costs amounted to 0.7% of total

5. In late 2017, for instance, the large banks received an exemption from the Competition Act in order to operate a joint banknote vault.

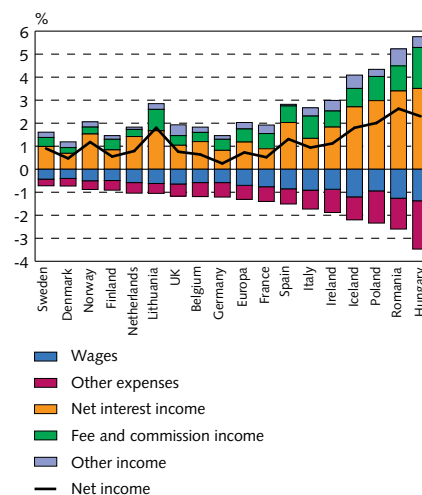
assets and total expenses 1.3%. The Icelandic D-SIBs' expenses are therefore 1-1.5 percentage points higher relative to total assets than the expenses of their Nordic peers. The D-SIBs cover these higher costs with wider interest rate differentials and higher commissions and fees (Chart II-9). The European Banking Authority is of the view that Nordic banks' strong cost-cutting performance is due mainly to their emphasis on automation and digital solutions and the small number of branches relative to the number of customers.⁶ Icelandic banks' greatest opportunity to boost profits lies in lowering costs.

Steep rise in impairment

The net change in the D-SIBs' loan values was negative by 11.6 b.kr. in Q1/2020, which represents four times higher impairment than in Q1/2019. The authorities and credit institutions have put a number of aggressive measures in place to support businesses and households and assist those who have suffered income losses. Some of the measures directly involve the banks: the bridge loans and support loans bearing large Government guarantees are issued through the banking system, and the banks themselves have offered moratoria on payment, loan freezing, debt restructuring, and refinancing.⁷ Moratoria and freezing are the measures most commonly used to help distressed customers. As of mid-June, 7% of household loans and 17% of corporate loans were frozen or protected by moratorium. At the end of Q1/2020, 2.9% of loans were in stage 3 default according to the IFRS9 standard. This represents no change from the turn of the year but an increase of 0.5 percentage points relative to Q1/2019.⁸ It should be noted that loans placed in moratorium due to the pandemic are not classified as non-performing.

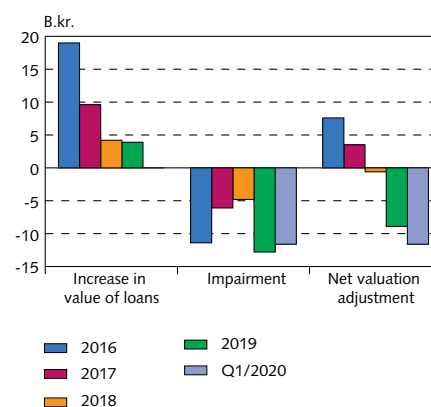
Economic developments further ahead are highly uncertain, and by the same token, there is considerable uncertainty about the position of many borrowers, the quality of loans, and possible impairment. A large share of loans to tourism companies were moved from IFRS9 Stage 1 to Stage 2, and the claim value of Stage 2 loans totalled 376 b.kr. at the end of Q1/2020, an increase of 76% quarter-on-quarter.⁹ The impairment account totalled 46 b.kr. at the end of Q1, after increasing by a third during the quarter, with most of the increase stemming from Stage 2 loans. The book value of impairment in Q1 totalled 0.4% of the loan portfolio, and although impairment according to IFRS9 is supposed to include expected credit losses based on realistic economic scenarios, it can be presumed that impairment for the remainder of the year will be at least equal to that in Q1, and around 1% of the loan portfolio for 2020 as a whole. There is consid-

Chart II-9
Ratio of annual income and expenses to total assets
Q3/2019



Source: European Banking Authority.

Chart II-10
D-SIB: Income and expenses due to revaluation of loans and receivables¹



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

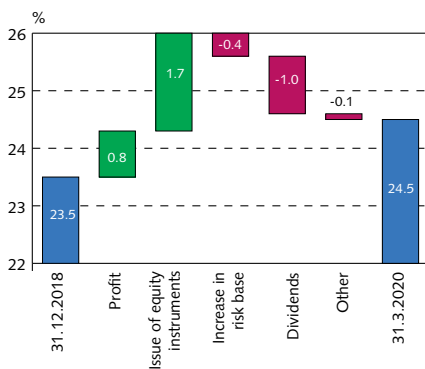
6. See the European Banking Authority's November 2019 risk report: <https://eba.europa.eu/risk-analysis-and-data/risk-assessment-reports>.

7. Further discussion of pandemic response measures taken by the authorities and the banks can be found in Box *Pandemic response measures*.

8. Stage 3 according to IFRS9 includes loans in serious default and those for which impairment can be expected.

9. The following applies to Stage 2 loans: There has been a significant increase in credit risk relative to the initial position. Impairment shall be based on expected credit losses over the lifetime of the loan.

Chart II-11
Change in D-SIBs' capital ratios in 2019
and Q1 2020¹



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

erable uncertainty about this, however.¹⁰ Chapter III contains a scenario analysis of the potential impact of the pandemic on the D-SIBs' position. The analysis is based on the Central Bank most recent macro-economic forecast as published in *Monetary Bulletin* in May. Based on the scenario, impairment will equal 1.8% of the D-SIBs' loan portfolio this year and 2.9% in 2021. By 2022, however, it will be aligned more closely with the banks' long-term targets. It should be noted that the assumptions underlying the scenario analysis do not include the impact of the measures taken by the banks to assist distressed customers. Impairment according to the scenario analysis will therefore be somewhat higher than it would be otherwise.

Capital position

The D-SIBs' capital totalled 608 b.kr. at the end of Q1/2020, a decrease of 10 b.kr. during the quarter. There was virtually no change in 2019. The banks' combined capital ratio at the end of Q1 was 24.5%, 0.2 percentage points lower than in the previous quarter but 1 percentage point higher than at the end of 2018.¹¹ The increase in the capital ratio since end-2018 is due to profit and issuance of equity instruments. On the other hand, dividends paid in 2019 and the increase in the risk base in Q1/2020 lowered the ratio. The banks use the standardised approach to assess risk-weighted assets, which amounted to 2,683 b.kr. at the end of Q1/2020. This represents an increase of 1.5% since end-2018, in spite of a 5.4% rise in lending over the period. Risk-weighted assets amounted to just under 68% of total assets at the end of Q1, as opposed to 73% at the beginning of 2019. The banks have been reviewing credit risk and loan pricing in the recent term, partly in view of reserve requirements.¹² Corporate loans, which have high reserve requirements, accounted for 55% of total lending at the end of Q1/2020. Excluding the Housing Financing Fund's purchase of 48 b.kr. in mortgage loans from Arion Bank in H2/2019, the share of corporate loans fell by more than three percentage points from the beginning of 2019. The ratio of risk-weighted assets to total assets could therefore continue to fall if the ratio of loans with high reserve requirements keeps declining.

The D-SIBs' leverage ratio lay in the 13.5-14.7% range at the end of Q1/2020, after falling by half a percentage point during the quarter as a result of operating losses and the depreciation of the króna. The Icelandic banks' leverage ratios are still the highest in the European Economic Area, where the average was 5.6% at the end of 2019.¹³

The minimum capital ratio required of the D-SIBs by the Central Bank ranges between 17% and 18.8%, based on the status of the

10. The banks' long-term target for annual impairment is 0.3-0.5% of the loan portfolio.

11. Foreseeable dividend payments by Arion Bank in 2019 and 2020, totalling 9.1 b.kr. and 14.2 b.kr., respectively, are not deducted from the capital base, as is done in the bank's annual accounts, because this is not done in Islandsbanki and Landsbankinn's annual accounts.

12. General corporate loans have a reserve requirement of 100%, while residential mortgages have a reserve requirement of 35%.

13. Other countries with high leverage ratios, apart from Iceland, are Hungary (11.8%), Estonia (11.7%), Greece (11.2%), and Bulgaria (10.8%).

banks at the end of 2018. Account has been taken of the suspension of the countercyclical capital buffer, which freed up 52 b.kr. in capital and gave the banks' considerably greater scope to cover loan impairment and support customers by issuing new loans. In accordance with the Central Bank's recommendation, the commercial banks abandoned their plans to issue dividends after the countercyclical capital buffer was released.

The large banks' capital ratios are about 5-9 percentage points above Central Bank requirements, and if adjustments are made for so-called management buffers, all three banks' capital ratios are above the benchmark by roughly 3-8 percentage points.¹⁴

The increase in capital ratios since the beginning of 2019 is due in large part to the issuance of subordinated bonds classified as Tier 2 capital. According to the capital requirements made by the Central Bank, such bonds may account for a maximum of 2.8% of Arion Bank and Landsbankinn's risk base and 2.4% of Íslandsbanki's risk base. As of end-Q1/2020, Landsbankinn had used 2/3 of its scope to issue subordinated Tier 2 bonds, and Arion and Íslandsbanki had fully utilised theirs. In mid-February, Arion Bank issued a bond classified as additional Tier 1 capital, the first Icelandic bank to do so since the financial crisis. The issue totals 100 million US dollars, or 2.1% of the risk base. With this bond, Arion has fully utilised its scope for such issuance.

The D-SIBs' possibilities for changing their funding structure have narrowed somewhat in the recent term. High capital ratios, the suspension of the countercyclical capital buffer, soft capital buffers that can be tapped on a temporary basis, that is the capital conservation buffer, and buffers for systemic importance all afford the D-SIBs considerable latitude to respond to increased arrears or maintain their lending capacity. The Central Bank's scenario analysis shows, for instance, that even in the event of a deep economic contraction involving 4.7% impairment of the D-SIBs' loan portfolio in 2020-2021, their average capital ratio would only fall by just over 3 percentage points. The situation is highly uncertain, however, and the effect may differ from one bank to another.

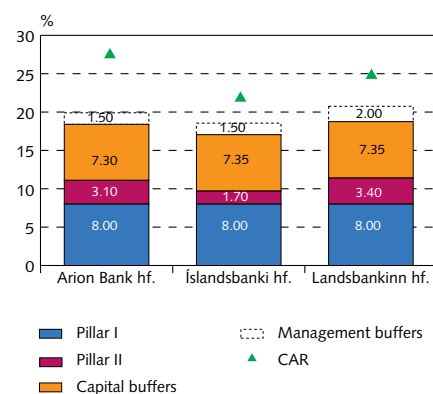
Liquidity and funding

Banks' liquidity strong despite high level of uncertainty

The large commercial banks' liquidity ratios are well above the Central Bank's required minimum. Credit institutions must satisfy a liquidity ratio of 100%, both in all currencies combined and in all foreign currencies combined. They must also satisfy a liquidity ratio of 50% in Icelandic krónur. The domestic systemically important banks' (D-SIB) liquidity ratio in all currencies combined was 199% at the end of May, after rising in March and April, partly because of reduced lending and the Central Bank's pandemic response measures. Furthermore, the banks have not paid dividends this year, which helps them to maintain high liquidity ratios. The liquidity ratio in foreign currencies was 373%

Chart II-12

D-SIB: Capital requirements and capital adequacy ratios at the end of Q1 2020¹

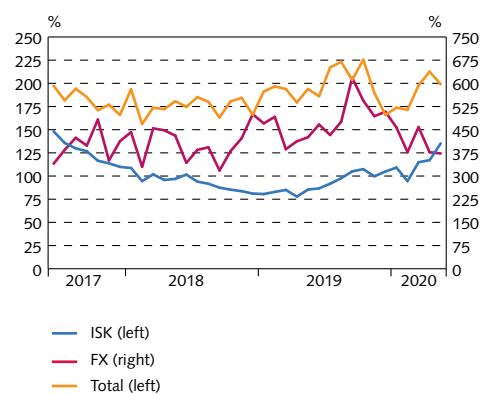


1. Domestic systemically important banks, consolidated figures.

Sources: Commercial banks' financial statements and other published materials.

Chart II-13

D-SIB: Liquidity coverage ratio¹

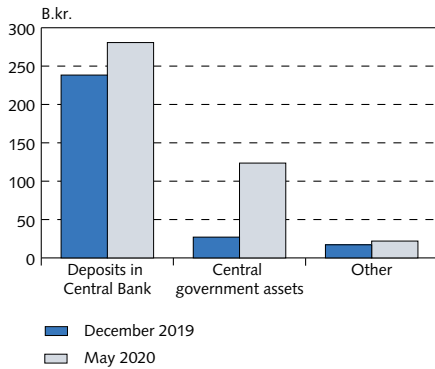


1. Domestic systemically important banks, consolidated figures.

Source: Central Bank of Iceland.

14. The management buffer is an internal prudential buffer. All of the D-SIBs specify such a buffer in their benchmarks and assume that it will be satisfied with common equity Tier 1 capital.

Chart II-14

D-SIB: Liquid assets in Icelandic krónur by type¹

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

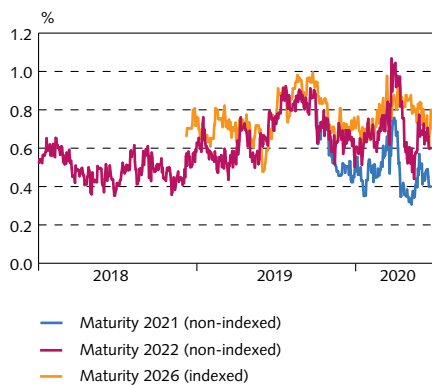
at the end of May, and the ratio in Icelandic krónur was 135%. The banks' internal benchmarks are at least 20 percentage points above the regulatory minimum. After adjusting for these, the banks have generous liquidity ratios.

Examining the liquidity ratios over a longer period than the 30 days on which the minimum is based shows that ratios taper off quickly thereafter, as a large share of the banks' wholesale funding is committed for a period of just over 30 days. If the commitment period is shortened, it will have a negative impact on their liquidity ratios.

The banks' liquid assets consist largely of deposits with the Central Bank and foreign government bonds. In order to support monetary policy transmission, the Central Bank stopped offering one-month term deposits this past May. The banks have responded by shifting their liquid krónur increasingly to Treasury bills and short Treasury bonds. The shortage of high-quality liquid assets denominated in krónur has made it difficult for the banks to diversify into other liquid asset classes. Increased issuance of Treasury bonds because of the foreseeable Treasury deficit following the pandemic should increase the supply of high-quality króna-denominated assets, however.

Downward pressure on the liquidity ratio could develop in the coming term as a result of the measures put in place by the banks and the authorities — such as moratoria on loan payments; frozen loans; and increased lending, including support loans and bridge loans — which will have a negative impact on the liquidity position. Pulling in the opposite direction are the Central Bank's decisions to reduce the average reserve maintenance requirement to 0% and the change the treatment of the fixed reserve requirement according to liquidity rules. The Bank has developed a special temporary collateralised framework for support loans, at the seven-day term deposit rate, so as to ensure the funding of those loans. The Bank has also opened up the possibility of additional collateralised lending facilities by temporarily expanding the list of instruments eligible as collateral. Under the current conditions, the banks must have access to enough liquidity to enable them to assist viable businesses. To this end, the Central Bank has significantly increased their access to liquid assets, thereby giving them greater scope for action.

Chart II-15

D-SIB: Spread on covered bonds¹

1. Difference between yield for covered bond and government bond with similar maturity.
Source: Nasdaq Iceland.

Increased domestic market funding would be favourable

The vast majority of the banks' funding is in the form of deposits and marketable bonds. Deposits increased by 6% in 2019, and by the end of April they accounted for about half of the banks' funding. At the same time, the banks' balance sheets grew more slowly, causing the share of deposits in total funding to rise. Just over half of all deposits are owned by individuals and small and medium enterprises (SME), and another fifth are owned by large companies. There has been little movement in the banks' deposits in recent weeks. Declining deposit rates in line with Central Bank rate cuts increase depositors' incentive to invest their savings elsewhere. Such a shift would have a negative impact on the banks' liquidity.

The banks have had difficulty finding other domestic funding sources apart from covered bonds. The main buyers of covered bonds

have been the Housing Financing Fund (HFF) and the pension funds. With the recent changes in the HFF's operations, there is increased uncertainty about potential buyers of these bonds. Furthermore, increased demand for non-indexed loans from the banks has increased their need for funding through nominal bond issues. But the pension funds have preferred indexed bonds, and this has affected the banks' funding terms. In 2019, the stock of outstanding covered bonds issued by the banks contracted by about 10 b.kr., mainly because Arion Bank paid off its Arion CB2 bond in the amount of 80 b.kr. The bond was owned by the HFF, and the retirement of the debt mainly entailed the delivery of the underlying assets. The banks' plans include covered bond issues in the amount of 60-80 b.kr. this year.

In 2019, their net new mortgage lending was in line with their covered bond issuance. Landsbankinn stood out from the crowd, however, with lending somewhat outpacing issuance, which weakened its liquidity position in H1/2019.¹⁵ The banks have reduced their issuance of bills, and all of them plan only limited issues this year.

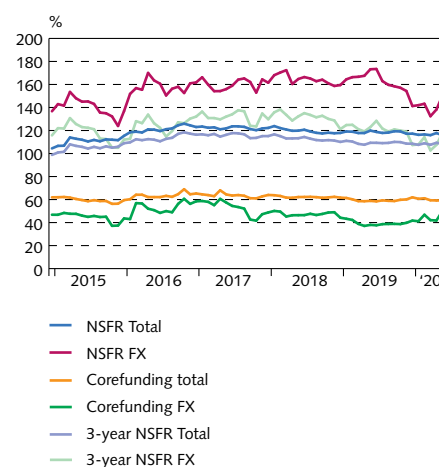
In May 2019, the Central Bank amended its rules on securities eligible as collateral for Central Bank facilities. Covered bonds are now accepted as collateral, upon satisfaction of specified requirements. Around the same time, the first covered bond series satisfied the requirements for classification as high-quality liquid assets under liquidity rules. In spite of this, turnover with these bonds has not increased very much, and at the same time the interest premium on the risk-free return on the bonds has increased while interest rates have fallen. This indicates less favourable funding terms in the domestic market. The banks all issued their first króna-denominated nominal bonds in 2019, all of them small issues. It would be favourable if they continued to increase the weight of domestic market funding so as to reduce concentration risk on the funding side, including issuing additional nominal bonds.

In the future, the banks' market-based funding may need to take into account that marketable bonds must be provided for a bail-in tool in connection with resolution authorities' authorisations to recapitalise credit institutions. In June, a bill of legislation implementing the second half of the EU Bank Recovery and Resolution Directive (BRRD) was passed by Parliament. The new act will take effect on September 1st. Among other things, the new Act provides for minimum requirements for own funds and eligible liabilities (MREL). The MREL is designed to enhance financial institutions' loss absorbency and ensure that a portion of financial institutions' liabilities will be eligible for bail-in. According to the Act, a new resolution authority to be established within the Central Bank will determine the MREL, with reference to resolution plans made for each credit institution.

Interest premia on foreign bonds have risen steeply

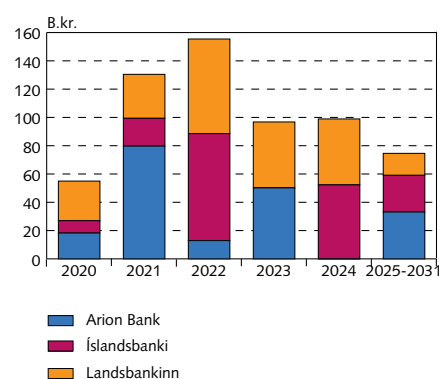
Key measures of the banks' funding risk have remained relatively stable in the recent term, as can be seen in Chart II-16. Their net

Chart II-16
D-SIB: Funding ratios¹



1. Consolidated figures. Data from NSFR reports.
Source: Central Bank of Iceland.

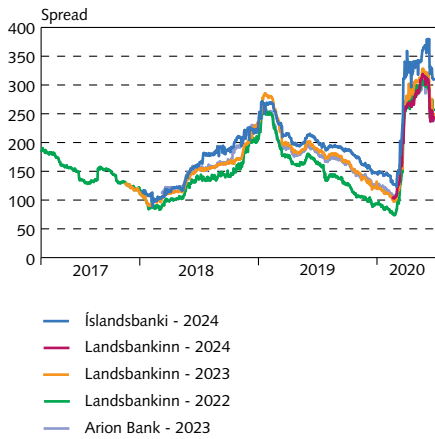
Chart II-17
D-SIB: Foreign bonds by maturity¹



1. At 29.6 2020 exchange rate.
Source: Nasdaq Iceland.

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

Chart II-18

D-SIB: Spread on listed foreign bonds, EUR¹

1. Spread on Euro benchmark curve.
Source: Refinitiv Datastream.

stable funding ratio in foreign currency (NSFR) was 136% at the end of May, after falling somewhat during the months beforehand. The residual maturity of foreign bonds has grown shorter, as the banks' outstanding foreign market funding contracted by 12 b.kr. last year because a sizeable amount of bonds maturing in 2020 were paid up at the end of 2019.

Foreign bonds issued by the D-SIBs that are scheduled to mature later this year amount to 55 b.kr., or 9% of their foreign market funding and 2% of total funding as of end-May. Contractual payments scheduled for 2021 are higher, or 131 b.kr. The banks' ample foreign liquidity gives them the flexibility to retire all of this year's maturities without refinancing. As of end-May, the banks do not all have enough liquidity to retire debt maturing in 2021 and maintain satisfactory liquidity ratios for foreign obligations without refinancing.

By increasing foreign market funding in recent years, the banks have grown more dependent on foreign market conditions. Risk premia on the banks' foreign issues have risen rapidly as risk appetite has dried up in response to the pandemic. There are also indications that premia have risen more on the Icelandic banks' bonds than on comparable bonds issued by foreign banks. This could be due to investor flight to safe assets, as many consider Iceland comparable to emerging market economies in terms of investment risk. If the banks' foreign funding terms do not improve in the coming term, they may have to raise their foreign-denominated corporate lending rates when the time comes to refinance their foreign bond issues in 2021.

III Central Bank scenario analysis

The Central Bank has analysed the potential impact of the COVID-19 pandemic on the position of Iceland's systemically important banks, based on the Bank's most recent macroeconomic forecast and alternative scenarios published in *Monetary Bulletin 2020/2*. The scenario analysis entails an assessment of the potential impact on the banks' capital position and lending capacity at a time when they are faced with increased arrears and impairment as a result of the economic shock. The results of the scenario analysis suggest that the banks' common equity Tier 1 (CET1) capital ratio could fall by 1.5-5.7 percentage points from end-2019 through end-2021, and that they could need to write down 100-210 b.kr. in loans over the next two years. These findings are highly uncertain, however. Measures taken by the banks themselves — such as moratoria on payments and other mitigating actions — should soften the blow considerably in comparison with the scenario analysis. A strong capital position and the suspension of the counter-cyclical capital buffer gives the banks considerable latitude in responding to the current situation.

Scenario analysis

The economy will suffer a severe shock

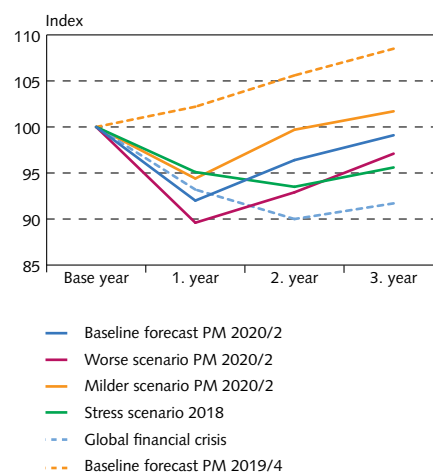
In *Monetary Bulletin 2020/2*, the Bank published its macroeconomic forecast, together with two alternative scenarios. The Bank has now conducted a scenario analysis in order to assess the effects of these scenarios on the domestic systemically important banks (D-SIB). It should be noted that this is not a forecast but an assessment of the possible effect of the current macroeconomic forecast on the banks' capital position, lending capacity, and scope to absorb arrears. The findings from the scenario analysis are subject to considerable uncertainty.

In view of current conditions, the Bank has decided not to conduct this year's annual stress test. Many foreign central banks have done the same. There are two main reasons for this. First, the banks are under considerable strain as they respond to the current situation, and second, the scenario prepared for the 2020 stress test was designed in autumn 2019 and is now obsolete.

The baseline forecast published in *Monetary Bulletin 2020/2* provides for an 8% contraction in GDP this year, and the alternative scenarios provide for a contraction ranging from just under 6% to just over 10%. The cumulative effect on GDP from end-2019 through end-2022 ranges from being positive by 1.7% in the more favourable scenario to being negative by 2.6% in the less favourable one. Unemployment will peak this year and range from 7.4% to 10%. By way of comparison, the harshest stress scenario in previous Central Bank stress tests was in the 2018 test. That scenario provided for a cumulative economic contraction of 6.5% in the first two years and 4.4% over the three-year period. Unemployment peaked at 8.5%. The decline in the banks' capital ratios was estimated at 4.7 percentage points. Using previous stress tests for comparison has limited value, however, as many of the variables develop differently from one scenario to another. To give an example, for the first time, the current scenario includes low inflation and low interest rates, which put additional pressure on the banks' performance because of the impact on their net interest income.

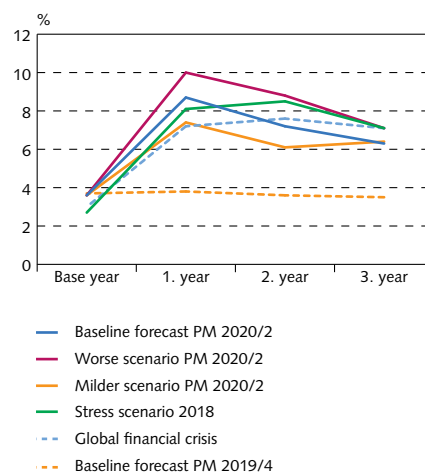
The Central Bank forecast used as a baseline for the scenario analysis takes into account the measures introduced by the authorities in response to the economic impact of the pandemic. On the

Chart III-1
GDP developments in scenarios¹



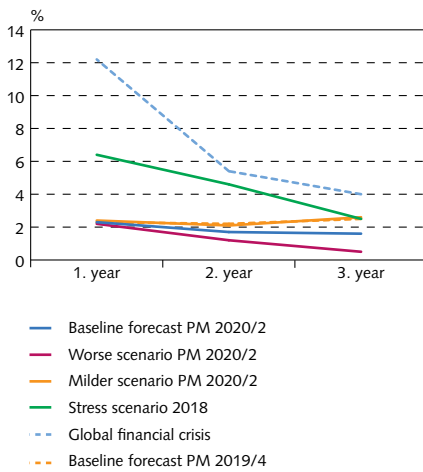
1. Index for GDP, starting at 100 points.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-2
Unemployment developments in scenarios¹



1. Unemployed as a share of workforce, annual average.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-3
Inflation developments in scenarios¹



1. Annual average of 12 month CPI growth.
Sources: Statistics Iceland, Central Bank of Iceland.

other hand, it does not take into account the actions implemented by the banks themselves, such as granting moratoria on loan payments. Those measures will presumably have a significant positive impact; therefore, it is likely that the actual outcome will be more positive than the scenario analysis suggests. Further discussion of pandemic response measures taken by the authorities and the banks can be found in Box 1.

Key assumptions

The initial position in the scenario analysis is based on the banks' consolidated year-end 2019 annual accounts, adjusted for their decision not to pay dividends this year because of the pandemic. The impact of the scenarios on their profit and loss accounts and balance sheets is estimated using statistical models that link economic variables with various aspects of their operations. This is supplemented by the Bank's expert assessment.

Account is taken of the impact of bridge loans and support loans on the commercial banks' risk-weighted assets. The Treasury will guarantee up to 70% of the amount of bridge loans and up to 100% of support loans. The ultimate scope of the banks' special measures (moratoria on payments and freezing of loans) is so uncertain that it is impossible to estimate the impact on arrears and interest income. As a result, these measures are not included here. Based on the guidance from the European Banking Authority (EBA)¹ on classification of loans in measures taken due to the pandemic, loans protected by moratorium are not classified as non-performing past-due obligations. Unpaid interest is recognised in the profit and loss account, and the same amount is added to the loan principal. Because there is limited experience of the IFRS9 financial reporting standard, particularly in times of stress, it is somewhat unclear when impairment will be recognised.

No dividend payments are assumed for the next three years. The suspension of dividend payments is one of the more aggressive management measures that can be taken at short notice. Further mitigating actions by the banks could lean further against the impact of the shock. No such actions are included in the scenario analysis.

The results of the scenario analysis 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. There is considerable uncertainty about how economic activity will develop, and the outlook could change radically from what is presented here. If actual economic developments diverge from this analysis, the banks' performance and capital ratio will differ from the results indicated here.

Scenario 1

Scenario 1 is based on the Central Bank forecast published in *Monetary Bulletin* 2020/2. The main assumptions concerning economic developments entail the following:

1. For further information, see the EBA website: <https://eba.europa.eu/eba-provides-further-guidance-use-flexibility-relation-covid-19-and-calls-heightened-attention-risks>

- Total exports contract by nearly one-third in 2020, and the number of foreign tourists visiting Iceland falls by 80% year-on-year. A recovery is assumed to start in 2021, when the effects of the pandemic begin to recede, with total exports growing by just over one-fifth.
- Private consumption contracts by 7.3% and investment by 6.2% in 2020, followed by a turnaround in 2021.
- Unemployment averages 8.7% in 2020 and then declines to 6.3% by 2022.
- The real exchange rate falls by nearly 10% in 2020 and 2.6% in 2021.
- Inflation is assumed to measure 2.3% in 2020 and then fall below 2% in the two years thereafter.
- GDP contracts by 8% in 2020 and then grows by 4.8% and 2.8%, respectively, in 2021 and 2022.

Estimated impact of the scenario on the banks

The banks will record operating losses in the first and second years of the scenario, primarily because of loan impairment amounting to just over 4.7% of the D-SIBs' loan portfolios in the first two years combined, plus a contraction in net interest income. They will return to profit in the third year, when impairment has normalised and net interest income begins to rise again, with improved loan portfolio quality and increased lending growth.

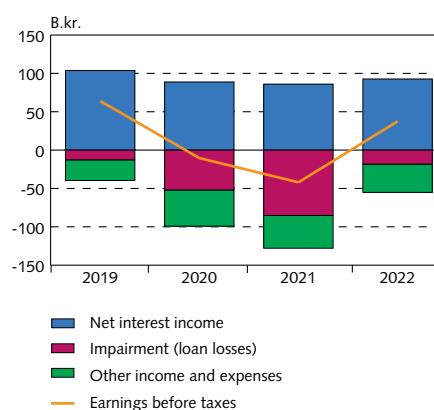
Net interest income contracts in the first two years because of inflation, lower interest rates, and interest arrears, but then rises in the third year, partly due to increased economic activity. Other income – i.e., net commission and fee income and net income from financial activities – contracts as a result of reduced activity and falling market prices. The banks' losses due to securities is small in comparison with loan impairment, however, as the weight of marketable securities in their balance sheets is limited.

Loan impairment for the first two years combined will be just under 140 b.kr. Moratoria and freezing of loans should help some borrowers through the most difficult period, however, and cushion against the blow. This is a relatively pessimistic assessment, as the models on which stress tests are based do not cover such measures, owing to a shortage of historical data. Unemployment will have a profound impact on household arrears, although developments in house prices also explain impairment of household loans, as most residential mortgages are secured by real estate. Future developments in house prices are highly uncertain at present, but the scenario assumes small fluctuations in prices over the next few years. Arrears and impairment of corporate loans will increase due to reduced activity and demand, although the lower real exchange rate will tend to offset this in export sectors such as the fishing industry.

Because the scenario analysis does not assume dividend payments or other changes in capital, the banks' after-tax profit or loss will depend on how CET1 develops. The three banks' combined CET1 capital, adjusted for the suspension of previously planned dividend

Chart III-4

Scenario 1: Earnings before taxes and contribution of various components, Central Bank estimates¹

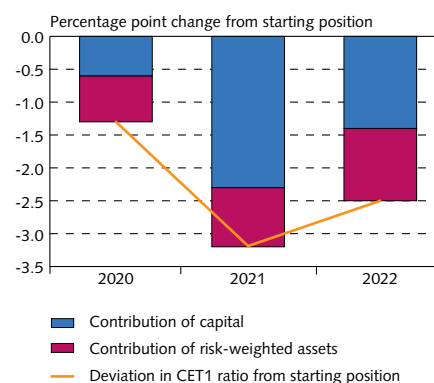


1. Before bank tax.

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

Chart III-5

Scenario 1: Deviation in CET1 ratio from year-end 2019, cumulative contribution of components, Central Bank estimates



Source: Central Bank of Iceland.

payments, amounted to 587 b.kr. at the beginning of the scenario but is assumed to contract by just over 60 b.kr. in the first two years.

The risk-weighted assets increase as well, by 4% in the first two years, primarily due to lending growth. Lending growth is assumed to be mainly due to bridge loans and support loans in the first year, although price and exchange rate movements will have an effect as well. Because of the Treasury guarantees, the risk-weighted assets will rise less than it would otherwise. In the latter years, increased demand will fuel lending growth. It should be noted that the Icelandic banks use the standardised approach in calculating their risk-weighted assets, and their risk weights are therefore standardised.

The CET1 capital ratio is assumed to bottom out at 19.2% at the end of 2021. This is 3.1 percentage points lower than at the beginning of the scenario, when it was 22.3%. In comparison, the CET1 capital requirement for the three banks ranges from 12.9% to 13.8%, and the total capital requirement ranges from 17% to 18.8%. The leverage ratio, which is very high in global comparison, could fall over the same period by 2 percentage points, from an average of 14.7% to 12.7%, but it is difficult to assess how off-balance sheet risk will develop; therefore, estimated developments in the leverage ratio should be interpreted with caution. It is worth noting, however, that the required minimum is 3%.

Because future economic developments are highly uncertain, an assessment was also made of developments in the banking system according to the two alternative scenarios presented in *Monetary Bulletin 2020/2*.

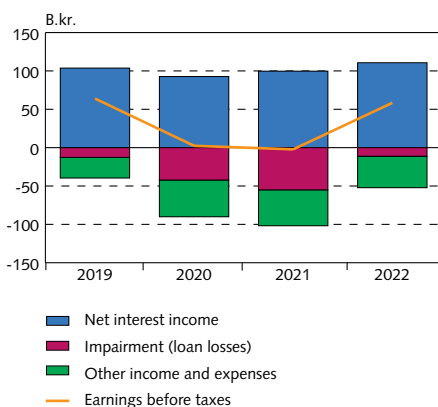
Scenario 2

Scenario 2 is based on the more favourable alternative scenario presented in *Monetary Bulletin 2020/2*. The main assumptions concerning economic developments entail the following:

- Total exports contract by just over one-fourth in the first year; among other things, tourist visits in H2/2020 are assumed to increase more than in Scenario 1. A stronger recovery is assumed for 2021 as well, when the impact of the pandemic has begun to subside. Total exports are assumed to increase by nearly a fourth.
- Private consumption contracts by 4.4% and investment by 4.7% in the first year, followed by a strong turnaround in 2021.
- Unemployment averages 7.4% in 2020 as a whole and then declines to 6.4% by 2022.
- The real exchange rate falls by 9% in the first year and then rises by 0.5% next year.
- Inflation is assumed to measure 2.4% this year and 2.1-2.6% in the two years thereafter.
- GDP is assumed to contract by 5.6% in the first year and then grow by 5.6% and 2.0%, respectively, in the second and third years.

Chart III-6

Scenario 2: Earnings before taxes and contribution of various components, Central Bank estimates¹



1. Before bank tax.

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

Estimated impact of the scenario on the banks

The contraction in net interest income will be considerably less severe than in Scenario 1, and growth will resume in the second year. In the

third year, it will have risen back above the 2019 level. Despite significant impairment amounting to 100 b.kr., or a combined 3.3% of the banks' loan portfolio over the first two years, their pre-tax earnings will be close to zero.

In the first two years, the banks' capital base will therefore contract considerably less than in Scenario 1. The risk-weighted assets will continue to rise, however, due to increased activity and lending growth, and the CET1 capital ratio will fall by 1.5 percentage points from the outset to its trough of 20.9% in the second year of the scenario. Because of the banks' strong capital position, this scenario will have limited impact on them. Their leverage ratio could fall by just under 1 percentage point.

Scenario 3

Scenario 3 is based on the less favourable alternative scenario presented in *Monetary Bulletin 2020/2*. The main assumptions concerning economic developments include the following:

- Total exports contract by about one-third in the first year; among other things, tourist visits in 2020 are assumed to contract more than in Scenario 1. Total exports are assumed to increase by 17% in 2021, when the effects of the pandemic begin to recede.
- Private consumption contracts by 12.4% and investment by 7.6% in the first year. Private consumption will turn around in 2021, but investment will remain unchanged.
- Unemployment averages 10% in 2020 and then declines to 7.1% by 2022.
- The real exchange rate falls by nearly 11% in the first year and another 6.4% next year.
- Inflation is assumed to measure 2.2% this year and 0.5-1.2% in the two years thereafter.
- GDP is assumed to contract by 10.4% in the first year, then grow by 3.7% and 4.5%, respectively, in the second and third years.

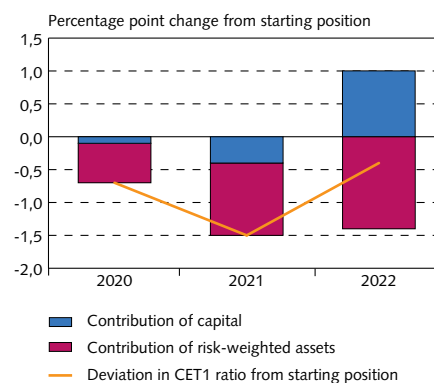
Estimated impact of the scenario on the banks

Net interest income will contract much more than in the other scenarios, as it will fall continuously for the first two years. Impairment will also be considerably higher, at 210 b.kr., or a combined 7.3% of the banks' loan portfolio, for the first two years. Their pre-tax earnings will therefore be negative for the first two years, and the aggregate loss for the two years combined will be 130 b.kr.

The banks' capital base will fall much more than in Scenarios 1 and 2. Their risk-weighted assets will rise only a little, however, as demand for credit will be very limited in such a severe shock, and lending growth will be virtually non-existent. The CET1 capital ratio will fall by 5.7 percentage points from the initial position to the trough in the second year, which is 16.6% for the three banks combined. The banks, however, satisfy CET1 capital requirements. Including additional CET1 capital and Tier2 capital, the banks' total capital ratio will fall to 18.9%, which is still above the required minimum of 17.05-

Chart III-7

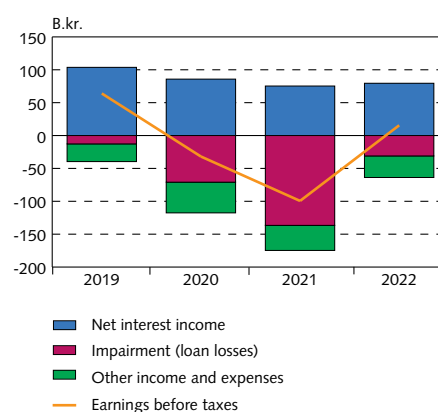
Scenario 2: Deviation in CET1 ratio from year-end 2019, cumulative contribution of components, Central Bank estimates



Source: Central Bank of Iceland.

Chart III-8

Scenario 3: Earnings before taxes and contribution of various components, Central Bank estimates¹

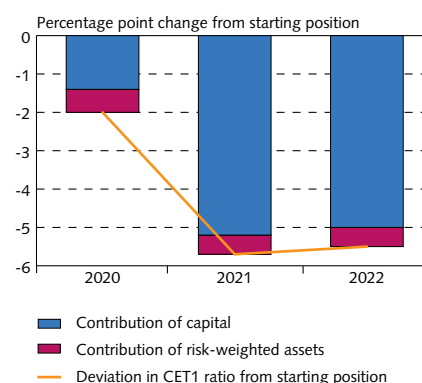


1. Before bank tax.

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

Chart III-9

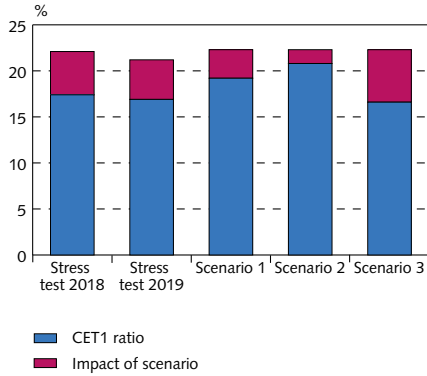
Scenario 3: Deviation in CET1 ratio from year-end 2019, cumulative contribution of components, Central Bank estimates



Source: Central Bank of Iceland.

Chart III-10

Three largest banks' combined CET1 ratio in different scenarios, Central Bank estimates



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

18.75%.² It should be borne in mind, though, that the banks can tap some of their capital buffers without overly onerous action on the part of financial supervisors — particularly the capital conservation buffer, which is designed to cushion against economic shocks. The leverage ratio falls to a minimum of 11% in the scenario, but remains well above the required minimum of 3%.

The scenario analysis shows the banks' strength

Intermediating credit to households and businesses is vital in helping them to withstand a temporary shock and in ensuring that investment in infrastructure and innovation does not stop, with the associated negative impact on future value creation. The scenario analysis above shows the banks' strength. The capital that the banks have held in excess of requirements, together with the suspension of the countercyclical capital buffer, will give them the scope they need to maintain their lending capacity while simultaneously absorbing increased arrears and impairment during the economic shock.

2. Based on additional CET1 capital and Tier2 capital at the end of 2019.

The COVID-19 pandemic and the aggressive public health measures put in place by governments all over the world in an attempt to curtail the spread of the disease have had a profoundly negative impact on economic and financial stability. In order to counteract this negative impact, governments, central banks, and financial supervisors have taken a variety of measures. A summary of the measures adopted by the Icelandic authorities can be found in Monetary Bulletin 2020/2, issued in May. Information on policy measures in other countries is taken from a database compiled by the European Systemic Risk Board (ESRB).¹ This Box focuses on those measures that are considered to affect financial stability.

Reduction of capital requirements

The regulatory framework on banks' capital requirements was strengthened significantly after the 2008 financial crisis. As a result, the capital position of European banks today is vastly different from that a decade ago. The introduction of capital buffers and changes to the supervisory review and evaluation process have enabled supervisory entities to increase the banks' capital requirements substantially, thereby boosting their resilience. Iceland has activated all of the capital buffers introduced with the Basel III regulatory framework. Before the countercyclical capital buffer was released in March, the combined buffer requirement on systemically important banks amounted to 9.5% of their risk-weighted assets, and 7.5% for smaller deposit institutions. In addition, the execution of the supervisory review and evaluation process has changed significantly since the financial crisis, resulting in increased required reserves, albeit in line with each financial institution's risk profile. This substantial resilience that has been built up in recent years makes the banking system better equipped to absorb shocks in the real economy than it would be otherwise. Releasing the countercyclical capital buffer enables the banks to cover loan losses caused by the economic shock — losses that otherwise could overly restrict households' and businesses' access to credit. Lowering capital requirements therefore contributes to financial stability by helping to counteract the procyclicality of loan losses and credit supply during a crisis.

The countercyclical capital buffer has been lowered or released entirely in most of the European countries that have introduced it. Part of the decision to lower the buffer involves specifying a period during which the buffer will not be raised again, which means that the economies in question have also nullified past decisions to increase the buffer that had not yet taken effect. Some of the countries that have not introduced the countercyclical capital buffer have used other buffers as a means of lowering financial institutions' capital requirements. The Finnish Financial Supervisory Authority, for instance, lowered both the capital buffer for systemic importance and the systemic risk buffer in order to achieve a 1% reduction in capital requirements for all domestic banks. The Bank of Italy has encouraged banks to tap their capital conservation buffer on a temporary basis, as well as their Pillar 2-G requirement. Consequently, Italy has not expressly lowered capital requirements, as the capital conservation buffer is mandated by law; instead, the financial supervisor has allowed banks to tap the buffers they have built up in recent years in order to support the real economy. It should be noted that under stressed conditions, European banks — including those in Iceland — can tap their capital conservation buffer, but it affects their maximum distributable amount (MDA) as laid down in the European regulatory framework.²

1. See <https://www.esrb.europa.eu/home/coronavirus/html/index.en.html>.

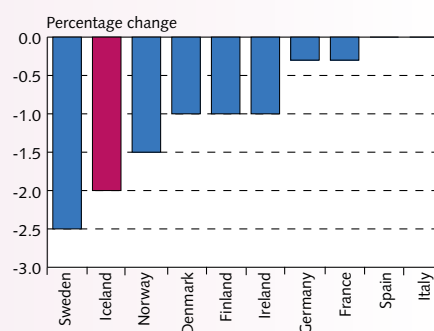
2. In Europe, the maximum distributable amount is defined in Article 141 of Directive 2013/36/EU of the European Parliament and of the Council. In Iceland it is defined in

Box 1

Pandemic response measures

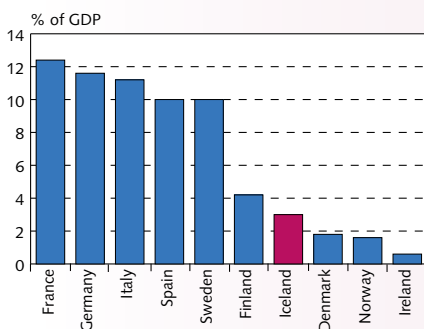
Chart 1

Change in capital requirements following COVID-19



Sources: ESRB, Central Bank of Iceland.

Chart 2
Government loan guarantees¹



1. Maximum government loan guarantees to companies as a percentage of GDP. GDP for the year 2019.
Sources: Eurostat, ESRB, Statistics Iceland, Statistics Denmark, Statistics Norway, Statistics Sweden, Central Bank of Iceland.

Dividend payments

Concurrent with the reduction in capital requirements, financial supervisors in Europe and elsewhere instructed banks to cancel or limit dividend payments due to 2019 profits, and to use their retained earnings to strengthen their capital base. This would put banks in a better position to provide support to the real economy, as well as equipping them to cover loan losses. The European Banking Authority (EBA) and the European Central Bank (ECB) have recommended that banks refrain from paying distributions such as dividends, stock buybacks, and variable remuneration.³ In Iceland, the Central Bank urged the boards of financial institutions to postpone such distributions while the economic impact of the pandemic remains uncertain.⁴ The Boards of Arion Bank hf., Íslandsbanki hf., and Landsbankinn hf. have announced that they will not pay dividends on 2019 profits.

This action has the same impact on financial stability as a reduction in capital requirements, as banks' common equity Tier 1 capital is increased by the amount of the planned dividend payment. In addition, it strengthens the banks' liquidity, all else being equal. The banks' resilience — and their ability to support the real economy — is therefore greater than it would be otherwise.

Government-guaranteed bridging loans and support loans

As is mentioned above, the purpose of lowering capital requirements and limiting dividend payments is to strengthen the banks' resilience. But it is not a given that this will suffice to boost their appetite for lending in order to provide the real economy with the support it needs. It is to be expected that the banks' risk appetite should diminish when the economy weakens, particularly during times of uncertainty like the present.⁵ As a result, many European governments have decided to guarantee banking system loans to companies, subject to specified requirements, thereby shifting a portion of the credit risk from the banks' balance sheets to the national treasury of the country concerned.

In Iceland, a Treasury guarantee of bridging loans and support loans has been approved by Parliament. The Central Bank acts as intermediary in the administration of the guarantees, and agreements to this effect between the Bank and all four commercial banks have been signed. The Treasury undertakes to guarantee up to 70% of the amount of bridging loans to companies, subject to specified conditions, and the total amount of the guarantee may range up to 50 b.kr. The support loans are intended for smaller companies to cover operating expenses during a period when they have suffered a severe loss of revenue. The Treasury guarantee of these loans ranges between 85% and 100%, depending on the loan amount. The Bank has implemented a special temporary collateralised framework for support loans, at the seven-day term deposit rate. Distributions such as dividend payments, stock buybacks, and the like are prohibited while Treasury guarantees on bridging loans or support loans remain in effect.⁶

the Act on Financial Undertakings, no. 161/2002, and provided for more fully in Central Bank Rules no. 1270/2015, on the maximum distributable amount and restrictions on financial undertakings' distributions in connection with capital buffers.

- See the EBA statement from 31 March and ECB recommendation no. ECB/2020/19.
- See the 18 March 2020 statement of the Financial Stability Committee.
- Ivashina, V. and Scharfstein, D. (2010), "Bank lending during the financial crisis of 2008", *Journal of Financial Economics*, 97(3), 319-338.
- In order to qualify for a bridging loan (support loan), a company must have suffered a severe and unforeseen loss of revenue, and its wage costs must account for at least 25% (10%) of its total year-2019 operating expenses. A severe loss of revenue is defined as a year-on-year contraction of at least 40%.

Providing a Treasury guarantee is an attempt to give the banks an incentive to provide loan facilities to companies that have suffered temporary revenue losses. The objective is to prevent viable businesses from possible insolvency and thereby ensure that they can resume and rebuild their operations quickly once the pandemic is over. This measure therefore supports the objective of lifting the countercyclical capital buffer and reducing overall capital requirements.

Monetary policy decisions

Since the pandemic struck, the Central Bank's Monetary Policy Committee (MPC) has lowered the Bank's key interest rate by 1.75 percentage points in a short space of time, from 2.75% to 1%. In addition, the Bank has taken a variety of actions in order to ease the monetary stance and increase liquidity in circulation. Among other measures, the Bank has begun buying Treasury bonds in the secondary market and has stopped offering one-month term deposits to financial institutions.

Other countries have also used what scope they had to lower interest rates. In Norway, the policy rate has been lowered to 0%, a decline of one-and-a-half percentage points since the beginning of March. In the eurozone, where the policy rate has long been unchanged at 0%, the ECB has significantly expanded its quantitative easing programme instead. In Sweden, interest rates have not changed except for the overnight lending rate, which was lowered from 0.75% to 0.2% on 18 March, in order to ease banks' access to liquidity.

The main objective of the Central Bank of Iceland's monetary policy actions, like those taken elsewhere in Europe, is to support the economy and lay the groundwork for a swift economic recovery once the pandemic is over.

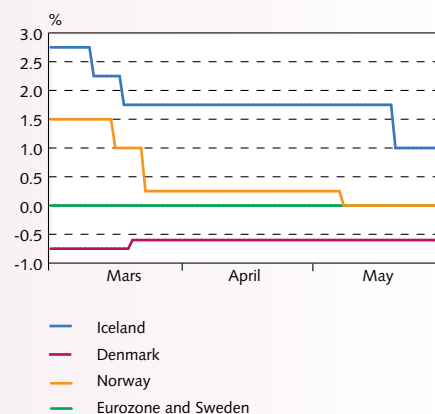
The part-time option and wage payments during termination notice period

The part-time option is probably the most important measure adopted in Iceland to protect households from income losses. It is important for companies as well, as public health measures and restrictions on travel have had a severe dampening effect on their activities, particularly in the tourism sector. Some European countries have adopted similar measures in order to protect workers, but they have orchestrated them in various ways. The governments of France, Ireland, Sweden, and Germany have introduced a system similar to Iceland's, where workers can be employed part-time and complement their earned income with partial unemployment benefits. In Denmark, firms can apply for government support to pay 75-90% of wage costs if their revenues have fallen because of the pandemic. Italy has taken a similar approach. It is noteworthy that Norway has not introduced a part-time option but has made it easier for firms to lay off workers and has shortened the waiting period for unemployment benefits.

Icelandic firms that have suffered severe revenue losses because of the pandemic have also been enabled to apply for financial support in order to pay workers' wages during the termination notice period. This measure ensures that workers who have lost their jobs will receive wages during the notice period and will not be forced to apply for such payments from the Wage Guarantee Fund, with the associated uncertainty and delays. It also enables liquidity constrained companies to make the staffing changes that are necessary because of the pandemic.

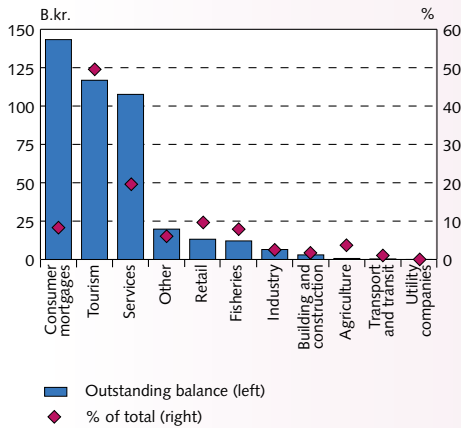
Both of these measures should lead to reduced arrears in the financial system or spread them out over a longer period. They pro-

Chart 3
Central bank policy interest rates



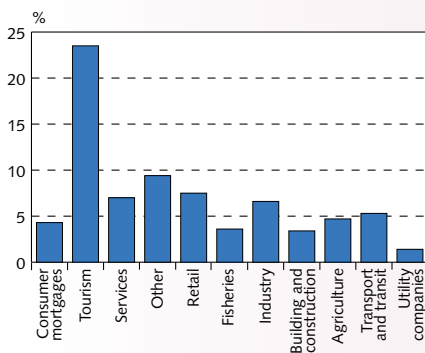
Sources: Danmarks Nationalbank, ECB, Norges Bank, Sveriges Riksbank, Central Bank of Iceland.

Chart 4

Outstanding balance of loans in moratorium¹

1. Data from 3-10 June 2020. The data includes D-SIBs, the largest pension funds, and the HCA. Pension funds' corporate loans are classified as other. Source: Central Bank of Iceland.

Chart 5

Percentage of borrowers in moratorium¹

1. Number of borrowers in moratorium as a percentage of the total number of borrowers in each group. Data from 3-10 June 2020. The data includes D-SIBs, the largest pension funds, and the HCA. Pension funds' corporate loans are classified as other. Source: Central Bank of Iceland.

vide both households and businesses some room for manoeuvre so that they can restructure their finances to reflect the new situation and thereby mitigate the uncertainty caused by the pandemic.

Moratorium on payments of loans and public levies

In many cases, lenders have granted moratoria on loan payments to both households and businesses. In addition, the authorities have authorised companies to defer payments of public levies. Both of these measures should help individuals and firms to weather the temporary loss of income. They do not represent loan forgiveness, however, and the debts of those who take advantage of these measures will increase. In all likelihood, these measures will result in reduced arrears and fewer insolvencies as well — or at least postpone them for several months, or perhaps well into 2021. Many European countries have put comparable measures in place.

Nearly half of outstanding loans in the tourism sector were in moratorium during the week of 3-10 June 2020, up from 35% on 13 May.⁷ In the services sector, the share of loans in moratorium was close to one-fifth, while in retail it was 10% and in the fishing industry it was 8%. The percentage in moratorium was much lower in other sectors. On the whole, 15% of corporate loans, or 280 b.kr., are in moratorium. In addition just over 8% of household mortgages are protected by moratorium.

The percentage of borrowers with loans in moratorium is considerably lower than the percentage of the outstanding loan balance. This is unsurprising because it can be assumed that heavily leveraged households and businesses will be likelier than others to need the shelter a moratorium can provide.⁸

Liquidity requirements and liquidity facilities

In general, European banks can tap their liquidity buffers under stressed conditions, even if their liquidity ratio falls temporarily below the regulatory minimum. The same applies in Iceland.⁹ Some countries, including Denmark, Norway, Sweden, and Germany, have declared or reiterated that banks are authorised to fall below their minimum liquidity ratio during the pandemic.

The Central Bank of Iceland has taken a number of actions to ease access to liquidity. The most important of them are the reduction in minimum reserve requirements, the change in treatment of reserve requirements, and the expansion of the list of securities eligible as collateral for Central Bank loan facilities. These measures aim to ensure that Icelandic banks have access to liquidity in order to support households and businesses.

Impact on financial stability

In many respects, the Icelandic authorities' actions and pandemic response measures have been consistent with those put in place elsewhere in Europe. The world is facing a severe and unexpected economic crisis. It is vital that policy actions be designed to mitigate the conditions currently existing. As regards financial stability, Europe — and Iceland in particular — benefits from having made broad-based changes to its financial system architecture after the 2008 financial crisis. As a result of these changes, Iceland's banks

7. Tourism is defined according to ISAT classifications that are descriptive for operations in the sector according to the Central Bank.

8. Information on moratorium represents data on credit granted by D-SIB, six largest pension funds and the Housing and Construction Authority (HCA).

9. According to Article 3(3) of the Central Bank of Iceland Rules on Credit Institutions' Liquidity Ratios, no. 266/2017.

are strong in terms of capital and liquidity, both historically and in comparison with other countries. If the pandemic does not last too long, the financial system is resilient enough to help households and businesses withstand the economic hardship without jeopardising financial stability. That said, the low-interest environment accompanying the pandemic response measures exacerbates the risk of debt bubble formation, either in individual sectors or in the real economy as a whole, at a time when the macroprudential stance has been eased. This could give rise to systemic risk and undermine financial stability. As a consequence, it is important to monitor developments in private sector debt closely in the coming term and take appropriate action if increased risk appetite leads to excessive credit growth once the economic impact of the pandemic subsides.

Box 2 Liquidity

Liquidity and the financial system liquidity position

In the recent past, liquidity position has not been a limiting factor in Icelandic credit institutions' operations. The balance of commercial banks' and savings banks' deposits with the Central Bank — 340 b.kr. at the end of March — gives an indication of the ample liquidity position of the banking system. That said, reserves at the Central Bank do not give a complete picture of the banks' lending capacity, which is limited by the minimum liquidity requirements imposed on the banks. A broader view is needed in order to assess lending capacity.

The banks have maintained a generous liquidity position despite the decline in deposits with the Central Bank since the Bank stopped offering one-month term deposits, as they have increasingly invested liquid assets in Treasury bills and short-term Treasury bonds.

The banks' liquidity position

All credit institutions must comply with liquidity rules, which are intended to ensure that the institutions concerned will be able to honour their obligations under stressed conditions. Credit institutions must have enough liquidity to remit payments due in the upcoming 30 days and simultaneously cover substantial capital outflows — i.e., a liquidity shock — without having to borrow additional funds.

The designation of assets as high-quality liquid assets (HQLA) is subject to stringent requirements according to liquidity rules. In Iceland, HQLA primarily include deposits with the Central Bank, Treasury bonds, and other Treasury-guaranteed bonds that satisfy set quality criteria.

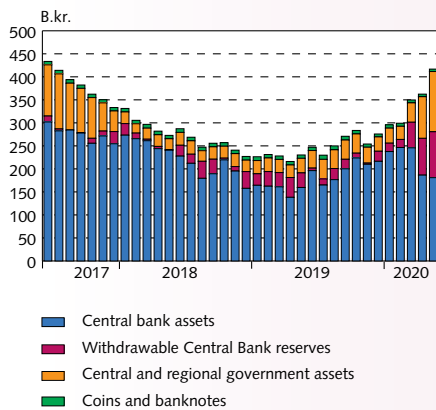
A predetermined liquidity shock determines to a large extent how much liquidity the banks must be able to access. The shock assumes that the banks' short-term funding in the form of deposits will decline significantly; i.e., that depositors will withdraw large amounts of liquid assets. The banks must be able to withstand such a shock.

It is therefore important to consider how much liquidity the banks hold in excess of regulatory requirements. At the end of May, this excess liquidity totalled 286 b.kr. Risk appetite, governance practices, and fluctuations in the banks' activities place further restrictions on how much of these excess liquid assets are actually available for lending.

In order to limit exchange rate risk, the banks' liquidity must generally be in the same currencies as expected outflows. However, the banks are authorised to hold 50% in Icelandic krónur but must have an overall ratio of 100%, which includes all currencies, and 100% for all foreign currencies combined. There are no specified minimum ratios for other currencies.¹ A lower minimum ratio for krónur is permitted in part because the Central Bank is a lender of krónur, in the form of collateralised loans and loans of last resort. Furthermore, satisfactory liquid assets are in short supply in Iceland, and foreign currencies are deemed more likely to be liquid during stress.

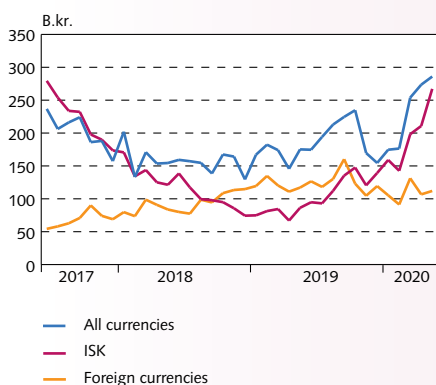
The banks must be able to tolerate day-to-day fluctuations in their liquidity ratio and must therefore maintain an average ratio above the regulatory minimum. If it is assumed that the banks' liquidity ratio must be able to fluctuate by 20 percentage points from

Chart 1
D-SIB: ISK HQLA



Source: Central Bank of Iceland.

Chart 2
D-SIB: HQLA in excess of requirements



Source: Central Bank of Iceland.

1. Amended Central Bank liquidity rules took effect at the turn of the year. Under the amendments, credit institutions are now required to satisfy at least 50% of their liquidity requirement in Icelandic krónur. Requirements on minimum liquidity ratios in domestic currency can be seen elsewhere in Europe, including in Norway and Sweden.

one day to another without falling below the regulatory minimum, the banks' liquidity is more than 200 b.kr. above the required level.

Determinants of banks' liquidity position

Various factors affect the banks' liquidity position, including measures adopted by the Government and the Central Bank, regulatory provisions, day-to-day operations, and actions taken by the banks themselves, not least in interaction with other agents in the same market.

It is well to bear in mind that references to the banks' liquidity generally mean the position as defined in liquidity rules. The rules specify which assets are generally considered liquid, which obligations could mature, and which claims could be made against a given bank based on existing contractual agreements. Banks' liquidity is therefore measured based on given definitions and scenarios.

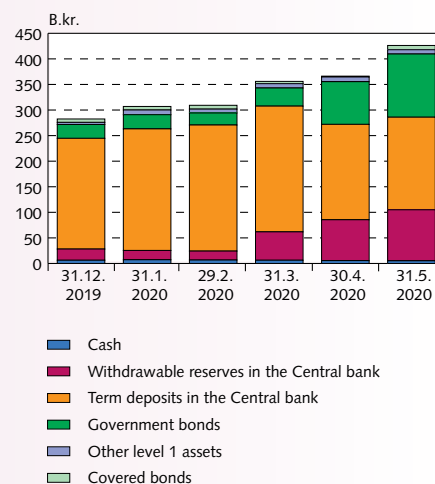
Table 1 gives an example of the impact various factors have on the banks' liquidity. For instance, the banks' liquidity position

Table 1 Examples of impact on the banks' liquidity

	Increase	Decrease
<i>Central Bank measures</i>		
Foreign exchange market intervention	Inflows of foreign currency increase the liquidity position. Central Bank purchases of foreign currency increase the ISK position but do not affect the banks' total liquidity coverage ratio (LCR).	Outflows of foreign currency reduce the liquidity position. Central Bank sales of foreign currency reduce the ISK position but do not affect the banks' total liquidity coverage ratio (LCR).
Reserve requirements	Reduction in reserve requirements (deposits held in reserve are not available liquid assets) The Central Bank assumes it will allow deposits held in reserve to be used to cover liquidity outflows under certain conditions.	Increase in reserve requirements. Deposits held in reserve are always unavailable.
Central Bank loan facilities	Banks' use of liquidity facilities in regular transactions and of the expanded list of collateral increases access to liquidity but does not increase the liquidity position without borrowing.	The limited list of collateral restricts the banks' ability to increase liquidity buffers.
<i>Banks' measures</i>		
New funding	Bond issuance and borrowing increase liquidity.	Funding maturities reduce the liquidity ratio when 30 days remain to maturity.
Lending	Limited new lending (for instance, if a bank loans less money than it receives in loan payments, it will build up a strong liquidity position).	Substantial lending — lending in excess of loan portfolio inflows and increase in deposits or other funding.
Dividend payments	Deferral of dividend payments	Dividend payments always reduce the liquidity position.
<i>Other factors</i>		
Loan quality	Performing loans generate increased inflows of liquid assets.	Increased arrears lower the liquidity ratio — inflows of liquidity cannot be assumed when loans are non-performing.
Credit lines	Reduction in lending authorisations.	Drawdowns of credit lines.
Capital flows	Inflows of foreign currency increase liquidity ratios.	Outflows of foreign currency lower liquidity ratios.

Chart 3

D-SIB: High quality liquid assets (HQLA), ISK



Source: Central Bank of Iceland.

in krónur rose steeply during the years 2014-2018 with active interventions of the Central Bank in the domestic foreign exchange market. More recent example includes the reduction in minimum reserve requirement increasing the banks' liquidity ratios. The scope afforded to the banks' liquidity position was increased with the expansion of collateral eligible for Central Bank facilities, although this does not affect a bank's liquidity position unless a loan is actually taken. In addition, new lending and decisions on dividend payments affect banks' liquidity.

The banks' liquidity is strong at present. This is due in part to measures taken by the Central Bank, which has emphasised that access to liquidity should not be subject to uncertainty. But improved liquidity position is also a sign that the banks are loaning less money. Deferred payments are still in effect, and households and businesses have not yet needed to use overdraft privileges and credit lines to a significant degree.

The banks' scope for lending is limited, among other things, by the liquidity requirements imposed upon them. As deposits increase, so do liquidity requirements. All else being equal, then, the banks' liquidity ratio will fall as they issue more loans, even though the loans remain in the bank. The impact depends on the composition and term of the bank's deposits. Increased lending in the amount of 10 b.kr. per bank will lower the liquidity ratio by 2-7 percentage points if it is assumed that new deposits established to offset the loans are distributed among depositors and the term is in line with the composition of the banks' deposits at the end of May. For all of the banks combined, the effect is around 4 percentage points. It is very sensitive to changed assumptions, however. For example, the liquidity ratio will fall more if there is a net outflow of deposits relative to new loans. Furthermore, the larger the share of sight deposits and the larger the share of deposits owned by companies and institutional investors, the stronger the impact will be.

The banks need to be able to obtain funding from more sources than just deposits. They have had success with covered bond issues, which they have used to fund most of their mortgage lending. Funding efforts are complicated by increased demand for non-indexed loans, though, because demand for non-indexed bonds has been tepid. The banks' unsecured issuance is still limited, but it could conceivably increase and add variety to the banks' funding sources.

Central Bank measures in recent months have strengthened the banks' liquidity, as it is clear that conditions could weaken their liquidity position further ahead. If these difficulties persist, the banks could be forced to tap their liquid assets to some extent.

The pandemic has had considerable effect on financial market development recently. Market uncertainty has grown since the turn of the year, and the VIX implied volatility index rose to an all-time high in March. In times of great uncertainty, investors typically abandon risky assets and flee to the relative shelter of stable currencies, government bonds with strong credit ratings, or gold. Global capital movements followed this pattern in March, with the exodus from emerging market economies' (EME) securities, unprecedented in its rapidity. Since the onset of the pandemic, some 100 bn US dollars have flowed out of emerging market economies (see Chart 2).¹

The wave of capital flight from EMEs in March is not only a shift towards safe assets, however; it also reflects uncertainty about how well prepared EMEs are structurally to address the pandemic. Risk premia on EMEs' bond issues have risen, as have their CDS spreads, and the flood of outflows has weakened many currencies, particularly in commodity-exporting countries and those that were already vulnerable before the virus began to spread. Many of these countries have sizeable current account deficits and are heavily leveraged in foreign currency. In order to respond to the situation, central banks in many EMEs have intervened in foreign exchange markets and eased minimum reserve requirements in foreign currencies. In addition, some countries have relaxed restrictions on capital inflows in a bid to ease outflow pressures.

In the past two months, market uncertainty has receded somewhat, and there are signs that investors' risk appetite is returning. High-frequency data suggest as well that EMEs could see a resumption of capital inflows in Q2/2020.² Uncertainty is still pronounced, however.

As in many EMEs, interest rates in Iceland have been high in international context over the past decade, giving rise to the possibility for carry trade, with the associated risk of a sudden stop in capital flows. Iceland is unlike EMEs, however, and outflows of foreign-owned capital have been limited in recent months. Actually, Iceland recorded capital inflows amounting to 22 b.kr. in Q2, including 33 b.kr. in inflows for investment in securities.³ Furthermore, registered net new investment was positive in the amount of 2 b.kr. from the beginning of March through the end of May (see the section entitled *Risk linked to international developments and capital flows*).

This is doubtless due in part to Iceland's strong institutional framework and favourable economic position after several years of robust GDP growth and a sizeable current account surplus, which has yielded a positive net international international position of 23% of GDP, the best the country has seen since World War II. In addition, favourable external conditions enabled the Central Bank to build up ample international reserves, which has surely helped boost investor confidence. Moreover, at the start of the pandemic, the Treasury debt position was favourable compared to other countries, and risk premia on Iceland's bond issues have been relatively stable in recent months, as has its CDS spread. Inflows for non-residents' investment in domestic securities have also been moderate in recent years, and foreign ownership of Icelandic securities is historically low

1. See, for instance, the analysis of high-frequency data from The Institute of International Finance: https://www.iif.com/Portals/0/Files/content/1_IIF_Capital%20Flows%20Tracker_April.pdf and IMF (April 2020). *Global financial stability report: Markets in the time of COVID-19*.

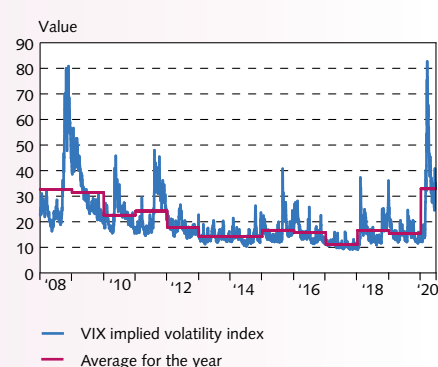
2. Based on high-frequency data on securities flows from *The Institute of International Finance*. See https://www.iif.com/Portals/0/Files/content/IIF050720_GMV.pdf.

3. A large share of securities inflows are due to non-resident investors' purchases of shares in domestic companies listed on foreign stock exchanges.

Box 3

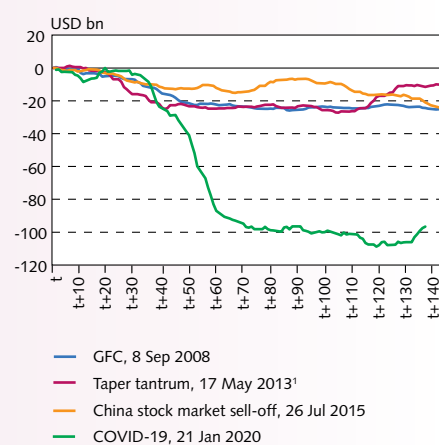
Capital flows in the time of COVID-19: Emerging market economies face large-scale capital flight, but Iceland is stable

Chart 1
Market uncertainty: VIX implied volatility index



Sources: Federal Reserve Bank of St. Louis, Central Bank of Iceland.

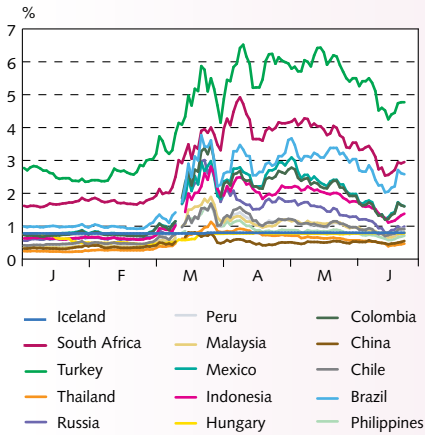
Chart 2
Cumulative non-resident portfolio flows to EMEs following recent shocks



1. The US Federal Reserve announced that it would scale down its quantitative easing programme, giving rise to a spike in bond yields generally referred to as the taper tantrum of 2013.

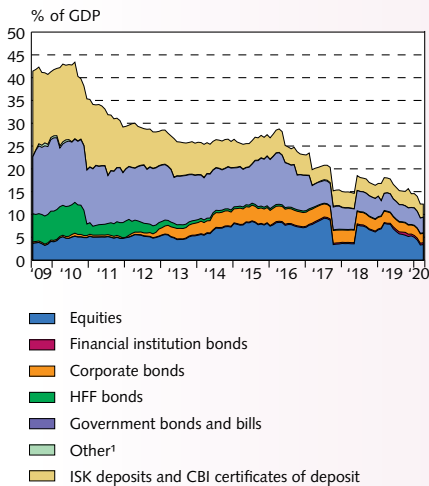
Source: Daily capital flows tracker. Fortin, J © 2020 Institute of International Finance, Inc. All rights reserved.

Chart 3
CDS spreads: Iceland and various EMEs



Sources: Refinitiv Datastream, Central Bank of Iceland.

Chart 4
Foreign-owned ISK deposits and Icelandic securities



1. Equity holdings include foreign direct investment in shares listed on the Nasdaq Iceland exchange.

Sources: Nasdaq Iceland, Central Bank of Iceland.

as a result. This is due in part to the special reserve requirement on capital inflows for investment in bonds and high-yielding deposits, which was in effect from June 2016 until March 2019, and to the restriction on trading in derivatives involving the Icelandic króna, which has been in place for the past decade, preventing speculative bond trading.

In evaluating potential capital flight, observers often consider the potential sale of highly liquid assets. Non-residents hold about 50 b.kr. in shares listed in Iceland (excluding foreign direct investment) and just under 200 b.kr. in other highly liquid króna-denominated assets, primarily bank deposits, CBI2016 certificates of deposit, and Treasury bonds (see Table 1). About one-fifth of these assets are classified as offshore krónur. The Central Bank's ample international reserves (see the section entitled *Risk linked to international development and capital flows*) can tolerate considerable outflows, however, and at present, the economy is highly resilient in this respect.

Table 1 Highly liquid assets owned by non-residents as of end-May

Ma.kr.	ISK	FX	Total	Total, % of GDP
Treasury bonds, nominal	101	0	101	3.4
Treasury bonds, index-linked	3	0	3	0.1
Treasury bills	0	0	0	0.0
Housing Financing Fund bonds	4	0	4	0.1
Deposits with deposit institutions	51	33	83	2.8
Deposits with the Central Bank	2	6	8	0.3
CBI2016 - certificates of deposit	37	0	37	1.2
	198	39	237	8.0

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

The Financial Action Task Force (FATF), an intergovernmental organisation whose aim is to combat money laundering and terrorist financing, placed Iceland on its grey list in October 2019. Iceland occupies this status together with other countries that are willing to cooperate with the task force but whose action plans are incomplete.

In 2018, a report was published on the FATF review carried out the previous year. The report specified 51 flaws in the framework and implementation of anti-money laundering and terrorist financing measures. Iceland was granted one year to take appropriate remedial action. The authorities responded with measures entailing legal and regulatory review and strengthening of key institutions in the fight against money laundering and terrorist financing. When FATF decided last autumn to put Iceland on its grey list, the conclusion was that Iceland should be monitored in connection with three areas still needing improvement. In February 2020, FATF concluded that two of these areas still needed remedial action: the registration of beneficial owners and the implementation of an information system for the police financial analysis office. These actions have now been taken. Effective 1 March 2020, all companies are required to list their beneficial owners, and by 1 June the beneficial owners of roughly 90% of registered companies had been so listed. An appropriate information system for the police financial analysis office has been installed and was launched in early May. At the same time, the office staff was expanded.

Iceland's second follow-up report was submitted to FATF at the end of May and considered at the organisation's plenary review meeting in June. It has been confirmed that Iceland has completed its remedial action satisfactorily. At that time, it was also decided that an on-site inspection would be conducted in order to confirm the progress made. This inspection is a prerequisite to Iceland's being removed from the grey list as planned this coming October.

Box 4

Status of the FATF appraisal of Iceland's anti-money laundering and terrorist financing measures

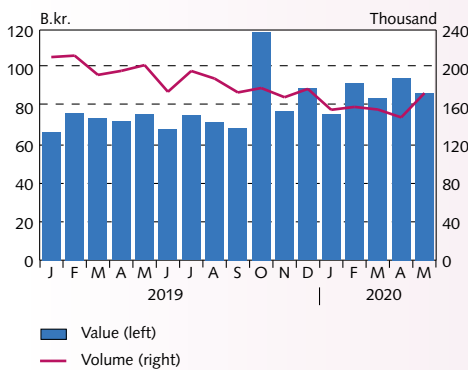
Payment intermediation and the COVID-19 pandemic

Box 5

Systemically important financial market infrastructure

The Central Bank of Iceland owns and operates Iceland's real-time gross settlement system (RTGS). In operating such systems, central banks play a key role in domestic payment intermediation, as gross settlement systems must ensure security and settlement finality of payment instructions in central bank money. Through the Bank-owned company Greiðsluveitan, the Central Bank also operates a deferred net settlement system (DNSS).¹ These systems, referred to jointly as interbank systems, facilitate movement of capital between financial institutions.² The Icelandic branch of Nasdaq CSD SE (formerly Nasdaq CSD Iceland) operates a securities settlement system (SSS) in Iceland. The securities settlement system transfers electronic securities each day between the securities deposit accounts of the purchaser and seller. The transfer takes place concurrent with the transfer in the RTGS system of monetary payment from the purchaser's financial institution to that of the seller. The interbank systems and the securities settlement system are defined as systemically important financial market infrastructure in Iceland and are recognised according to the Act on the Security of Transfer Orders in Payment Systems and Securities Settlement Systems, no. 90/1999. This recognition provides legal protection of the instructions delivered to the systems.

Chart 1
Transaction to settlement system¹



1. Daily average.

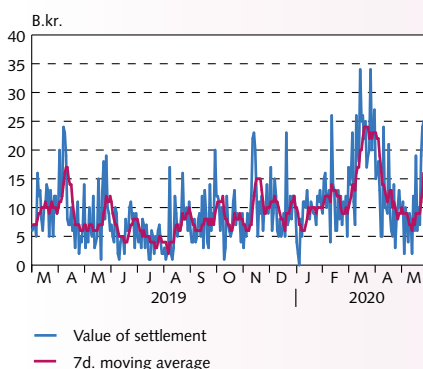
Sources: Greiðsluveitan ehf., Central Bank of Iceland.

Payment flows and operations

In the first five months of 2020, interbank system transfers totalled just under 9.9 trillion krónur (9,888 b.kr.), or an average of 87 b.kr. per business day. A total of 23.9 million transactions were made during that period, an average of 159,000 per day. Over this same period, interbank system turnover increased by 17% year-on-year, while the number of transactions declined by 22%. There are several probable explanations for this: a portion of transactions in late December 2019 shifted to the first business day in January 2020; securities transactions increased markedly in March, in terms of both value and volume, and there were more large investments and fewer retail transactions during the period. Final settlement of securities transactions takes place in the RTGS system. During the first five months of 2020, such transactions amounted to over 1.3 trillion krónur, or an average of 11 b.kr. per day, an increase of about 50% year-on-year. In the midst of the COVID-19 pandemic (March and April), RTGS system turnover between banks and savings banks increased by 11% year-on-year, whereas DNSS turnover declined by 7.5%.

In general, payment intermediation in the RTGS system involves limited liquidity risk, as banks and savings banks can defer payments and use their overdraft allowances with the Central Bank, provided that they have submitted collateral deemed eligible by the Bank. During the pandemic, the banks' and savings banks' intraday liquidity was generally good, and there was little risk of their being unable to settle obligations in payment and settlement system. The intraday distribution of payments was virtually unchanged from the prior year, and all payments were submitted before the system closed, and there was never a need to lengthen operating hours.

Chart 2
Securities settlement system: transaction to settlement¹



1. Daily data.

Sources: Nasdaq Iceland, Central Bank of Iceland.

1. The RTGS system transfers króna-denominated payments between financial institutions in amounts exceeding 10 m.kr., while the DNSS system handles payments below 10 m.kr. (netting for final settlement in the RTGS system).
2. Transfers within the same financial institution — between customers of the same bank, for instance — do not require the involvement of interbank systems. These payments are transferred using the internal system of the institution concerned. Interbank system participants include the systemically important commercial banks: Arion Bank, Íslandsbanki, and Landsbankinn.

Operation of the interbank systems and securities settlement system went smoothly during the pandemic. Around mid-March, the Central Bank activated its contingency plan, and a number of people who work in interbank system operation were required to work from home. Workspace within the Bank was also split up, but some back office employees worked in shifts so that financial transactions could be carried out. At the Icelandic Banks' Data Centre (RB), which hosts the interbank systems, employees worked in two separate shifts, and a number of employees worked from home. At the end of March, the Nasdaq securities depository decided to close its offices temporarily as a result of the pandemic. All of its employees worked from home during the peak of the pandemic, and operations proceeded normally.

Electronic retail payment intermediation and cash

Electronic retail payment intermediation entails the use of issued electronic payment instruments for goods and services purchases. In Iceland, debit and credit cards are the most commonly used electronic payment instruments.

Domestic payment card turnover totalled 293 b.kr. over the first four months of 2020, in just under 48 million transactions. Turnover and transaction volume with domestic cards contracted year-on-year during the pandemic, although there was an uptick in early April, just before Easter. As could be expected, turnover with foreign payment cards contracted during the pandemic.

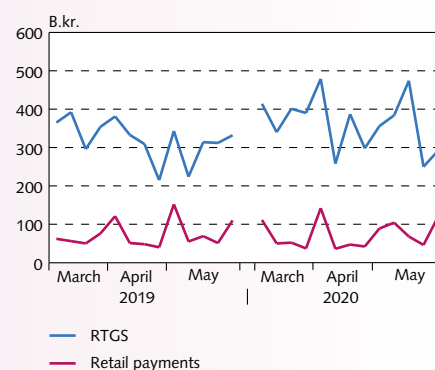
In order to control the spread of the pandemic, members of the public were encouraged to use contactless payments for goods and services purchases. Contactless payments are executed in two main ways: with contactless payment cards, which are placed in close physical proximity to a point-of-sale device, enabling payment to take place without additional authentication; and with contactless payment apps that are typically linked to the user's payment card. In March, the European Banking Authority (EBA) instructed European payment service providers to authorise increased maximum amounts for transactions carried out using contactless cards with no additional authentication. As a result, the upper limit on such contactless payments in Iceland was raised from 5,000 kr. to 7,500 kr. at the beginning of April.³ This required changes to point-of-sale software (POS), and grocery stores and drug stores were given priority to the upgrades. During the pandemic, consumers were encouraged to use contactless smartphone apps rather than contactless payment cards. One reason for this was that mobile phones have stringent authentication requirements, which enable users to make payments in excess of the aforementioned maximum amount, although they are not permitted to exceed the authorised limits on the credit cards to which the apps are linked. Use of contactless smartphone apps could however give rise to increased risk from the standpoint of payment intermediation, as payments made by apps are routed solely through international clearing systems.⁴

At the peak of the COVID-19 pandemic, the Central Bank Financial Supervisory Authority maintained a register of the number of infected employees working for key supervised entities and suppliers, as well as the number of employees in quarantine. This was done so that it would be possible to determine whether strain due

3. With this change, the maximum for aggregate contactless payments — i.e., the maximum that can be paid without entering the user's PIN number — was increased as well, from 10,500 kr. to 15,000 kr.

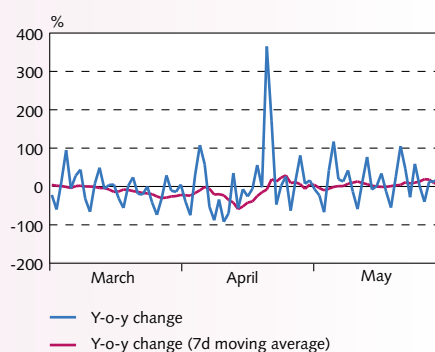
4. Further discussion of this and related topics can be found in the Central Bank of Iceland Special Publication no. 13 from 2018, *Retail payment intermediation from the standpoint of contingency and financial stability* (in Icelandic, with an abstract in English).

Chart 3
Transaction to settlement in COVID-19¹



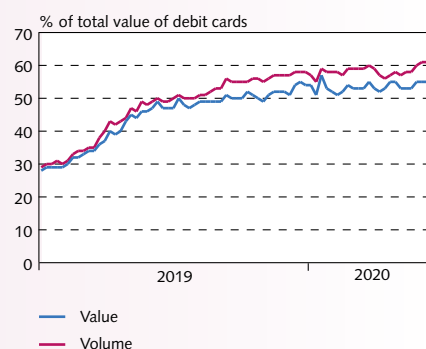
1. Weekly data from 2 March - 30 May 2019 and 2020.
Sources: RB IT service centre, Central Bank of Iceland.

Chart 4
Value of Icelandic payments cards¹



1. Daily data
Source: Central Bank of Iceland.

Chart 5
Share of debit card payments transferred to international clearing system



Source: RB IT service centre.

to staffing shortages might develop, which could naturally have had a negative impact in the event of interruptions in payment intermediation. Now that the pandemic has receded and employees have been able to return to their workplaces, it is vital to maintain strict hygiene practices insofar as is possible.

At the end of May 2020, banknotes and coin in circulation outside the Central Bank and the commercial banks totalled 67.5 b.kr., an increase of 0.8 b.kr. since the turn of the year. In a normal year featuring the usual seasonal fluctuations, cash in circulation generally declines by 1-2 b.kr. during the first five months of the year. This year's increase in outstanding cash is therefore somewhat surprising, given the reduction in economic activity during the peak of the pandemic and reports of reduced use of cash. It will be interesting to monitor the long-term impact of the pandemic on use of physical currency in cash transactions.

Appendix I

Tables

Table 1 Financial system assets¹

Assets, b.kr	31.12. 2016	31.12. 2017	31.12. 2018	31.12. 2019	31.3. 2020	Change from 31.12. 2019, %
Central Bank of Iceland	901	765	755	840	967	15
Deposit-taking corporations excluding the Central Bank	3,222	3,405	3,681	3,775	4,063	8
Commercial banks	3,199	3,381	3,656	3,748	4,037	8
Savings banks and other deposit-taking corporations	23	24	26	26	26	-1
Money market funds	177	158	147	144	149	3
Non-MMF investment funds ²	668	686	668	766	776	1
Other financial intermediaries ^{3,4}	1,773	1,426	1,338	1,233	1,329	8
Housing Financing Fund	787	761	731	718	718	0
Financial auxiliaries	18	20	25	25	46	84
Insurance corporations	206	220	232	259	280	8
Pension funds	3,540	3,943	4,245	4,967	4,950	0
Total assets	10,505	10,623	11,091	12,009	12,559	5

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

Source: Central Bank of Iceland.

Table 2 DMB assets

Assets, b.kr	31.12. 2016	31.12. 2017	31.12. 2018	31.12. 2019	31.3. 2020	Change from 31.12. 2019, %
Cash and cash balance with Central Bank	385,056	378,700	293,870	329,923	370,970	12
Deposits in domestic deposit-taking corporations	4,176	6,075	658	633	857	35
Deposits in foreign deposit-taking corporations	56,299	77,887	107,039	63,887	89,915	41
Domestic credit	2,187,741	2,407,764	2,708,062	2,784,748	2,852,979	2
Foreign credit	132,419	133,857	153,272	137,546	199,252	45
Domestic marketable bonds and bills	206,056	116,001	95,842	104,980	179,168	71
Foreign marketable bonds and bills	53,590	85,778	137,139	145,433	162,761	12
Domestic equities and unit shares	130,720	114,561	101,026	121,132	99,559	-18
Foreign equities and unit shares	2,197	14,276	3,077	2,622	2,219	-15
Other domestic assets	56,906	57,445	68,435	67,047	87,826	31
Other foreign assets	6,703	12,478	13,068	16,693	17,916	7
Total	3,221,861	3,404,821	3,681,488	3,774,645	4,063,421	8

Source: Central Bank of Iceland.

Table 3 Other financial corporations' assets

Assets, b.kr.	31.12. 2016	31.12. 2017	31.12. 2018	31.12. 2019	31.3. 2020	Change from 31.12. 2019, %
Cash and cash balance with Central Bank	116,026	93,566	99,432	61,466	68,705	12
Deposits in domestic deposit-taking corporations	76,342	55,036	53,234	91,090	100,004	10
Deposits in foreign deposit-taking corporations	60,762	37,924	36,088	28,597	22,046	-23
Domestic credit	876,738	801,463	755,422	744,432	743,720	0
Foreign credit	136,426	64,940	57,731	17,413	18,452	6
Domestic marketable bonds and bills	217,461	178,233	211,887	222,551	348,218	56
Foreign marketable bonds and bills	3,501	998	266	0	0	0
Domestic equities and unit shares	165,317	109,192	94,051	33,328	4,844	-85
Foreign equities and unit shares	68,507	46,380	3,680	6,763	7,233	7
Other domestic assets	39,833	31,776	19,612	23,529	13,166	-44
Other foreign assets	12,323	6,268	6,544	3,445	2,392	-31
Total	1,773,237	1,425,775	1,337,946	1,232,614	1,328,781	8

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

Source: Central Bank of Iceland.

Table 4 Pension fund assets

Assets, b.kr.	31.12. 2016	31.12. 2017	31.12. 2018	31.12. 2019	31.3. 2020	Change from 31.12. 2019, %
Deposits in domestic deposit-taking corporations	116,608	149,353	142,872	152,898	175,757	15
Deposits in foreign deposit-taking corporations	18,450	20,451	13,776	24,174	28,044	16
Domestic credit	237,973	332,007	428,474	522,126	545,538	4
Foreign credit	199	268	309	378	420	11
Domestic marketable bonds and bills	1,720,558	1,808,826	1,909,858	1,968,722	1,988,161	1
Foreign marketable bonds and bills	926	524	3,980	8,210	8,213	0
Domestic equities and unit shares	671,691	657,083	647,835	803,571	730,723	-9
Foreign equities and unit shares	748,503	925,416	1,071,412	1,462,886	1,448,415	-1
Domestic insurance and pension assets	17,155	19,227	21,003	21,111	21,048	0
Foreign insurance and pension assets	44	63	69	48	48	0
Other domestic assets	7,860	30,219	5,083	3,235	3,836	19
Other foreign assets	1	1	0	0	0	0
Total	3,539,967	3,943,438	4,244,671	4,967,359	4,950,202	0

Source: Central Bank of Iceland.

Table 5 Insurance company assets

Assets, b.kr.	31.12. 2016	31.12. 2017	31.12. 2018	31.12. 2019	31.3. 2020	Change from 31.12. 2019, %
Cash and cash balance with Central Bank	7,354	7,011	1,563	40	1	-97
Deposits in domestic deposit-taking corporations	4,586	4,861	6,589	10,571	6,242	-41
Deposits in foreign deposit-taking corporations	208	149	75	48	67	39
Domestic credit	1,487	3,449	3,523	2,490	2,424	-3
Foreign credit	0	0	0	0	0	0
Domestic marketable bonds and bills	89,989	94,177	98,628	109,161	114,835	5
Foreign marketable bonds and bills	3,740	4,467	16,801	20,378	21,251	4
Domestic equities and unit shares	60,664	65,696	61,159	65,790	71,583	9
Foreign equities and unit shares	5,945	8,182	8,821	10,200	11,150	9
Domestic insurance and pension assets	17,869	20,662	22,228	24,772	36,792	49
Foreign insurance and pension assets	7,451	5,815	6,310	6,997	6,659	-5
Other domestic assets	5,798	4,350	5,197	8,005	7,918	-1
Other foreign assets	1,312	1,546	1,542	750	846	13
Total	206,404	220,365	232,436	259,202	279,768	8

Source: Central Bank of Iceland.

Table 6 D-SIB: Income and expenses¹

<i>Income and expenses, b.kr</i>	31.12. 2016	31.12. 2017	31.12. 2018	31.12. 2019	31.3. 2020	<i>Change from 31.12. 2019, %</i>
<i>Arion Bank hf.</i>						
Operating income	12,090	11,404	10,810	11,708	8,976	-23
Net interest income	7,273	6,904	6,827	7,434	7,253	-2
Net fee and commission income	3,219	2,198	2,205	2,218	3,076	39
Other operating income	1,598	2,302	1,778	2,056	-1,353	-166
Operating expenses	7,198	6,478	6,520	6,862	6,207	-10
Change in loan values	503	-907	135	1,081	2,860	165
Income tax	1,505	2,202	1,933	1,528	1,191	-22
Net after-tax gain from discontinued operations	0	-278	-273	-1,219	-889	-27
Profit	2,883	3,353	1,949	1,018	-2,171	-313
<i>Íslandsbanki hf.</i>						
Operating income	11,450	11,040	10,238	12,046	9,407	-22
Net interest income	7,539	7,397	7,740	7,937	8,580	8
Net fee and commission income	3,144	3,270	2,778	2,647	2,491	-6
Other operating income	767	373	-280	1,462	-1,664	-214
Operating expenses	6,747	6,635	7,142	6,525	5,920	-9
Change in loan values	320	-240	-88	907	3,490	285
Income tax	1,588	1,886	1,800	2,076	1,128	-46
Net after-tax gain from discontinued operations	715	285	713	51	-245	-580
Profit	3,510	3,044	2,097	2,589	-1,376	-153
<i>Landsbankinn hf.</i>						
Operating income	11,210	13,934	15,808	16,027	8,644	-46
Net interest income	7,466	8,018	9,641	10,245	9,427	-8
Net fee and commission income	1,980	2,116	1,691	2,060	1,945	-6
Other operating income	1,764	3,800	4,476	3,722	-2,728	-173
Operating expenses	6,253	5,917	6,838	7,212	6,724	-7
Change in loan values	-311	-1,779	-1,024	994	5,244	428
Income tax	1,215	1,395	1,892	1,037	304	-71
Net after-tax gain from discontinued operations	0	0	0	0	0	-
Profit	3,315	7,576	8,102	6,784	-3,628	-153
<i>D-SIBs</i>						
Operating income	34,750	36,378	36,856	39,781	27,027	-32
Net interest income	22,278	22,319	24,208	25,616	25,260	-1
Net fee and commission income	8,343	7,584	6,674	6,925	7,512	8
Other operating income	4,129	6,475	5,974	7,240	-5,745	-179
Operating expenses	20,198	19,030	20,500	20,599	18,851	-8
Change in loan values	512	-2,926	-977	2,982	11,594	289
Income tax	4,308	5,483	5,625	4,641	2,623	-43
Net after-tax gain from discontinued operations	715	7	440	-1,168	-1,134	-3
Profit	9,708	13,973	12,148	10,391	-7,175	-169

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

Table 7 D-SIB: Key ratios

%	31.12.2016	31.12.2017	31.12.2018	31.12.2019	31.3.2020
Return on equity	8.9	7.4	6.1	4.5	-4.6
Return on assets	1.8	1.4	1.1	0.7	-0.7
Expenses as a share of net interest and commission income	62.0	59.0	60.0	59.1	56.1
Expenses as a share of total assets	2.6	2.3	2.3	2.2	1.9
Net interest and commission income as a share of total income	85.0	89.4	92.4	88.5	121.3
Net interest as a share of total assets	3.0	2.8	2.9	2.7	2.7
Capital ratio	27.7	25.1	23.2	24.2	24.5
Foreign exchange as a share of the capital base	-0.5	0.5	0.3	2.1	-0.4
Liquidity coverage ratio (LCR), total	163.0	165.9	166	163.0	198.0
Liquidity coverage ratio (LCR), FX	403.8	412.8	509.6	508	458
Net stable funding ratio (NSFR), total	123.0	122.2	117.9	117	116
Net stable funding ratio (NSFR), FX	161.8	161.5	159.8	142	132

Source: Central Bank of Iceland.

Table 8 Commercial banks' foreign bond issues, last 12 months (1 July 2019 - 30 June 2020)

Issuer	Date	Currency	Amount B.kr.	Maturity Years	Premium on interbank rate, ¹ %
Arion bank	July 2019	NOK	4.4	10.0	3,65
	December 2019	SEK	2.9	10.0	3.7
	February 2020	USD	12.8	10.0	6,25% fixed
Total			20.1		
Landsbankinn	February 2020	EUR	41.4	4.3	0,5% fixed
Total			41.4		

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 ¹	FME decision/ announcement	Value %	Applicable from
Systemic risk buffer, D-SIB	22.1.2016	1.3.2016	3	1.4.2016
Systemic risk buffer, other DMBs	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	18.3.2020	18.3.2020	0	18.3.2020
Capital conservation buffer			2.5	1.1.2017

1. Effective 1 January 2020, the Central Bank of Iceland sets rules on capital buffers, subject to prior approval from the Financial Stability Committee.

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

Table 10 Indicators pertaining to the international investment position

	<i>Unit</i>	<i>Frequency</i>	2014	2015	2016	2017	2018	2019	M5 or Q1 2020 ⁶
Net IIP ¹	% of GDP	Q	-41.6	-4.6	2.1	2.5	10.5	21.2	23.2
External debt ²	% of GDP	Q	151.2	116.0	102.7	82.3	78.9	77.2	85.7
Treasury FX debt as a share of total debt	%	M	27.9	23.0	18.1	12.8	14.9	21.1	19.6
Commercial banks' foreign-denominated bonds	% of GDP	Q	16.6	16.9	18.7	19.7	21.3	19.7	22.0
Current account balance ³	% of GDP	Q	5.3	5.8	6.6	3.8	3.1	5.9	4.8
International reserves	% of GDP	M	25.6	28.5	32.7	26.2	26.4	27.7	31.8
International reserves financed in krónur	% of GDP	M	1.0	13.2	23.8	21.1	21.2	20.6	23.7
International reserves/IMF RAM	%	Q	83.4	126.1	174.1	150.1	143.4	157.1	167.6
Terms of trade	Value	Q	89.5	90.2	93.6	94.1	89.1	92.1	90.2
Nominal exchange rate ⁴	Value	M	206.6	191.5	161.7	162.9	174.1	179.7	196.5
Real exchange rate ⁵	Value	M	76.8	83.1	99.4	99.2	90.4	91.4	81.1
Treasury's highest credit rating	Rating	-	Baa2/BBB	Baa1/BBB+	A3/A-	A2/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 2014-2016. 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 Q2/2019-Q1/2020.

Sources: Statistics Iceland, Central Bank of Iceland.

Appendix II

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 Central Bank upon approval from the Financial Stability Committee. 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).
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.