



# MONETARY BULLETIN

2020 • 4

## Contents

- 3 Statement of the Monetary Policy Committee
- 4 Monetary Bulletin 2020/4
  - 5 Chapter I The global economy and terms of trade
  - 13 Chapter II Monetary policy and domestic financial markets
  - 17 Chapter III Demand and GDP growth
  - 25 Chapter IV Labour market and factor utilisation
  - 29 Chapter V Inflation
    - 32 Box 1 Alternative scenarios and uncertainties
    - 38 Box 2 COVID-19, inflation, and household consumption patterns
    - 43 Box 3 Fiscal budget proposal for 2021
    - 48 Box 4 The Central Bank's macroeconomic forecasts for 2019
  - 52 Appendix 1 Snapshots of domestic and foreign economic activity in the midst of a global pandemic
  - 54 Appendix 2 Forecast tables

The objective of the Central Bank of Iceland's monetary policy is to contribute to general economic well-being in Iceland. The Central Bank does so by promoting price stability, which is its main objective. In the joint declaration made by the Government of Iceland and Central Bank of Iceland on 27 March 2001, this is defined as aiming at an average rate of inflation, measured as the 12-month increase in the CPI, of as close to 2½% as possible. Professional analysis and transparency are prerequisites for credible monetary policy. In publishing *Monetary Bulletin* four times a year, the Central Bank aims to fulfil these principles.

*Monetary Bulletin* includes a detailed analysis of economic developments and prospects, on which the Monetary Policy Committee's interest rate decisions are based. It also represents a vehicle for the Bank's accountability towards Government authorities and the public.

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**Icelandic letters:**

ð/Ð (pronounced like th in English this)

þ/Þ (pronounced like th in English think)

In *Monetary Bulletin*, 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 Monetary Policy Committee 18 November 2020

The Monetary Policy Committee (MPC) of the Central Bank of Iceland has decided to lower the Bank's interest rates by 0.25 percentage points. The Bank's key interest rate – the rate on seven-day term deposits – will therefore be 0.75%.

The autumn surge in COVID-19 cases and the tightened public health measures have weakened the economic rebound that began in Q3, following a historically large contraction in Q2. The economic outlook has therefore deteriorated, and according to the forecast in the November *Monetary Bulletin*, GDP growth is set to contract by 8.5% this year, a full 1 percentage point more than was forecast in August. GDP growth is projected to be weaker in 2021 as well. The economic outlook is highly uncertain, and economic developments will depend to a considerable degree on the path the pandemic takes.

The króna depreciated after the pandemic reached Iceland but has been relatively stable in the recent term. Inflation has risen since the spring, measuring 3.6% in October; however, medium- and long-term inflation expectations are broadly unchanged. According to the Bank's forecast, the outlook is for inflation to average about 3.7% until early 2021 and then begin to ease, owing to the sizeable slack in the economy.

Although inflation has risen temporarily and appears set to be higher than was assumed in August, more firmly anchored inflation expectations provide the MPC the scope to respond decisively to the deteriorating economic outlook. Interest rate reductions and other measures taken by the Central Bank in the past few months have supported domestic demand and mitigated the adverse impact of the economic shock.

The MPC will continue to use the tools at its disposal, including Treasury bond purchases by the Central Bank, to support the domestic economy and ensure that the more accommodative monetary stance is transmitted normally to households and businesses.

## Monetary Bulletin 2020/4<sup>1</sup>

The COVID-19 pandemic profoundly affected the global economy in H1/2020. GDP in Iceland's main trading partner countries contracted by more than 12% year-on-year in Q2, the largest single-quarter contraction on record. As the summer passed, the pandemic appeared to be receding, but it has surged in the recent term, forcing a re-tightening of public health measures. Thus the outlook is for a renewed contraction in trading partners' GDP in Q4, followed by a weaker recovery in H1/2021 than was forecast in the August *Monetary Bulletin*.

The resurgence of the pandemic has also caused Iceland's recovery to falter. After declining steeply in Q2, private consumption appears to have picked up markedly in Q3 but is projected to contract again in Q4. GDP contracted by 5.7% year-on-year in H1/2020 and is expected to remain virtually flat in H2. As a result, GDP is set to contract by 8.5% in 2020 as a whole, more than was forecast in August but broadly as was projected in May. The outlook for 2021 has deteriorated as well, as the forecast assumes that bringing the pandemic under control will take longer than was projected in the last forecast. Fewer tourists are expected to visit Iceland; therefore, exports will take longer to recover and will grow more slowly. As a consequence, GDP growth will measure only 2.3% in 2021, as compared with the August forecast of 3.4%. Unemployment will therefore rise higher and persist longer. Although robust GDP growth is forecast for 2022-2023, output is not expected to return to its 2019 level until 2023.

The outlook is highly uncertain, however, and near-term economic developments will depend to a large degree on how successful efforts to control the pandemic prove to be. The pandemic is expected to have largely subsided in Iceland by the end of 2020, and widespread inoculation is expected in Iceland and its main trading partners by mid-2021. If the pandemic proves more intractable, however, the economic recovery will be even more sluggish. The same is true if households are slower to tap the savings they have built up during the pandemic. Conversely, if efforts to control the disease are more successful, or if households use more of their savings, the economic recovery will be correspondingly stronger.

Inflation was at the Bank's 2.5% inflation target in Q2/2020. The króna depreciated after the pandemic spread to Iceland, however, and inflation has risen since then. It measured 3.2% in Q3 and had reached 3.6% by October. Short-term inflation expectations have risen recently, but medium- and long-term expectations do not appear to have become unmoored from the target. The outlook is for inflation to average 3.7% until early 2021, and then, once the effects of the depreciation of the króna disappear from measurements, it is expected to begin to ease relatively quickly, owing to the sizeable slack that has developed in the economy. This is a somewhat higher rate of inflation than was forecast in August, mainly due to stronger imported inflationary pressures.

1. The analysis presented in this *Monetary Bulletin* is based on data available in mid-November. Owing to the high level of uncertainty about the effects of the COVID-19 pandemic on the economic outlook, the forecast appendix shows fewer economic variables than usual.

# I The global economy and terms of trade

## The global economy

### The pandemic has upended the global economy ...

The COVID-19 pandemic started spreading all over the globe early this year, causing turmoil the world over, with enormous health implications. Over 55 million people have now been diagnosed with the disease, and more than 1.3 million have died of it. Governmental authorities all over the world have put broad-based public health measures in place in a bid to slow the spread of the disease, thereby reducing strain on healthcare systems and limiting the health implications of the pandemic. The measures undertaken have included temporary closure of businesses and schools, social distancing requirements and strict bans on public gatherings, and significant limitations on individuals' freedom to travel domestically and internationally.

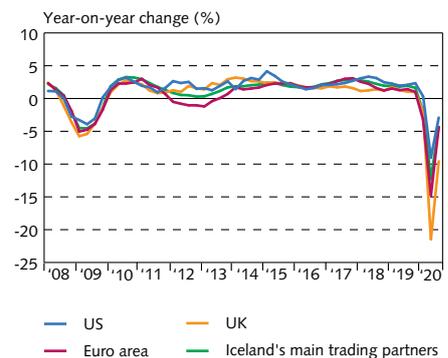
Both government-imposed public health measures and social distancing undertaken voluntarily by the public due to fear of contagion have had enormous economic repercussions, particularly in Q2/2020, when a sizeable share of the global economy came to a halt.<sup>1</sup> The abrupt contraction in private consumption and investment during the period led to the largest single-quarter contraction in the global economy in the history of quarterly national accounts data, and for 2020 as a whole, the outlook is for the largest contraction since World War II.

### ... causing a record contraction among Iceland's trading partners ...

GDP among Iceland's main trading partners contracted by an average of just over 12% year-on-year in Q2 (Chart I-1). This is nearly three times the size of the largest single-quarter contraction during the global financial crisis just over a decade ago. The contraction was most pronounced in the UK and core countries in the southern part of the eurozone, but less so in the US and the Nordic countries (Chart I-2). The variation from one country to another reflects in part the pace and assertiveness with which governmental authorities have implemented public health measures. The composition of the national economy in the countries concerned is also an important factor, as countries heavily reliant on tourism and other sectors requiring close contact between people suffered the most. In China, which recorded the first cases of the virus and was the first country to bring it under control, year-on-year GDP growth measured 3.2% in Q2, after a 6.8% contraction in Q1. Even though the Q2 contraction in trading partner countries was the largest on record, it was ½ a percentage point less than was assumed in the Bank's August forecast.

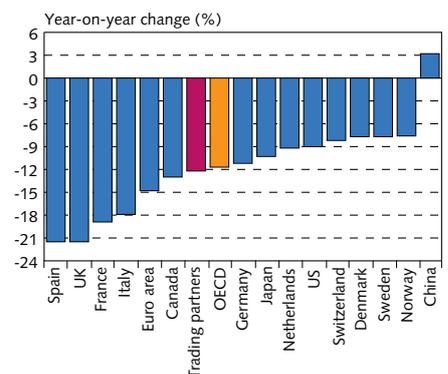
1. A recent analysis from the International Monetary Fund (*World Economic Outlook*, Chapter 2, October 2020) indicates that, during the first three months after the pandemic struck each country, voluntary social distancing and government-mandated measures affected travel behaviour in broadly equal measure. However, in advanced economies, where people are better equipped, on average, to work remotely and can better afford a temporary loss of income (by tapping into savings or relying on social welfare systems), voluntary social distancing has had a greater impact than mandated measures.

Chart I-1  
Global GDP growth<sup>1</sup>  
Q1/2008 - Q3/2020



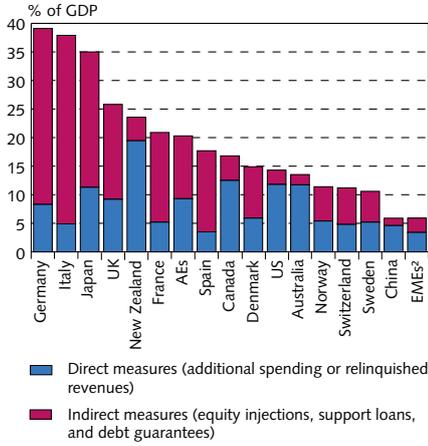
1. Seasonally adjusted data. Central Bank baseline forecast Q3/2020 for main trading partners.  
Sources: Refinitiv Datastream, Central Bank of Iceland.

Chart I-2  
Global GDP growth in Q2/2020<sup>1</sup>



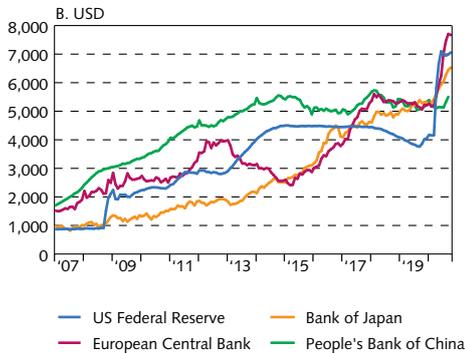
1. Seasonally adjusted data.  
Sources: Refinitiv Datastream, Central Bank of Iceland.

Chart I-3  
Fiscal policy responses to the COVID-19 pandemic<sup>1</sup>



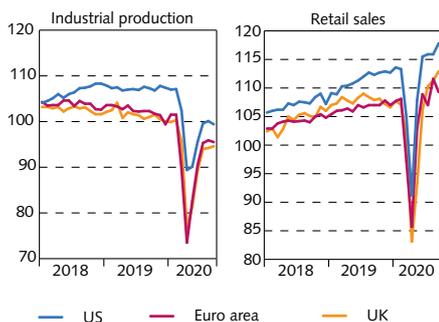
1. Announced measures as of mid-September 2020. The timeframe of the measures varies by country, but most will be implemented in 2020-2021. 2. Emerging market and middle-income economies. Source: International Monetary Fund.

Chart I-4  
Central bank balance sheets  
January 2007 - October 2020



Source: Refinitiv Datastream.

Chart I-5  
Industrial production and retail sales<sup>1</sup>  
January 2018 - September 2020



1. Seasonally adjusted volume indices (2016 = 100). Source: Refinitiv Datastream.

**... albeit mitigated by unprecedented policy measures from governments and central banks**

The global economic contraction would most likely have been even deeper if governmental authorities had not taken unprecedented mitigating action in order to support healthcare systems and cushion against the shock sustained by households and businesses. The discretionary fiscal measures announced by governments in connection with the pandemic are estimated at 11.7 trillion US dollars worldwide, or nearly 12% of global GDP. The percentage is even higher in advanced economies, at about 20% of their GDP, as they generally have more fiscal space to absorb increased debt (Chart I-3). Approximately half of announced measures have taken the form of increased expenditures or relinquished revenues, including temporary tax cuts or deferrals, direct monetary transfers, partial employee wage subsidies, and more generous unemployment benefits in order to mitigate temporary income losses. The other half entails measures including unprecedented equity injections for firms, support loans, and debt guarantees.

In addition to governmental support measures, central banks all over the world have applied measures unparalleled in both scope and speed, in an attempt to support demand, push inflation back up to target levels, and ensure that the financial system functions as normally as possible. Among other measures, interest rates have been lowered significantly, financial institutions' access to liquidity facilities has been expanded, and other actions have been taken to boost households' and businesses' access to liquidity. An ever-increasing number of central banks have bought Treasury bonds in order to prevent governments' pandemic-related borrowing needs from pushing long-term interest rates too high. Some of them have even bought corporate bonds or are lending money directly to companies. Central banks have also both tapped and expanded US dollar credit lines among themselves in response to surging worldwide market demand for dollars. In addition, the US Federal Reserve began offering other central banks access to US dollar liquidity through a temporary repurchase agreement facility. Central banks' large-scale asset purchases can be seen in the expansion of their balance sheets and a surge in money holdings (Chart I-4).

**Leading advanced economies recovered more strongly this summer than was forecast in August ...**

The wide-ranging public health measures imposed in most advanced economies appeared to bear fruit this spring, and in most of the countries concerned – particularly those that took the most aggressive action – the pandemic had receded by early summer. As the situation improved, governmental authorities began relaxing their public health measures, and leading indicators suggested that a strong turnaround would take hold as the summer progressed and economies began to normalise. A particular example of this could be seen in retail sales, which had risen above pre-pandemic levels by the summer (Chart I-5). The surge was due to strong pent-up demand and increased household saving prompted by the steep drop in private consumption in Q2,

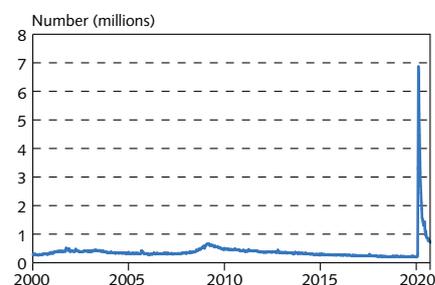
at the same time as disposable income more or less held steady due to government support measures. Industrial production and world trade have also increased since April, albeit not to the same extent as retail sales. This suggests that investment has not recovered, as uncertainty remains pronounced and business executives are probably exercising increased caution in their spending decisions. Furthermore, the labour market has recovered more strongly than generally expected, particularly in the US, where unemployment is now just under 7%, after peaking at slightly less than 15% this spring. But US unemployment is still high in historical terms, and the number of new applications for unemployment benefits exceeds the peak during the financial crisis a decade ago (Chart I-6).

Indications of a strong economic turnaround among leading industrialised economies this summer were confirmed recently, when preliminary GDP figures for Q3 were published. GDP grew by 7.4% quarter-on-quarter in the US, although it was still down 2.9% year-on-year (Chart I-1). A stronger quarter-on-quarter increase in the eurozone (12.6%) and the UK (15.5%) reflects an even steeper decline in the first half of the year. In Q3, there was still a contraction of 4.4% year-on-year in the eurozone and 9.6% in the UK. China's rapid recovery held its ground, with GDP growth measuring nearly 5% year-on-year during the quarter. GDP among Iceland's main trading partners is estimated to have been an average of 4.3% lower in Q3 than in the same quarter of 2019, which translates to a contraction over 3 percentage points smaller than was assumed in the August forecast.

### ... but the recovery slowed in the autumn, and a contraction is likely in Q4

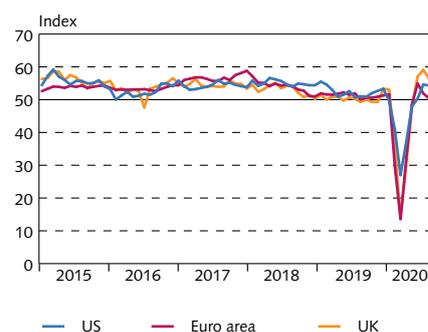
Despite a sharp turnaround in economic activity in advanced economies in Q3, leading indicators suggest that the recovery lost steam in some of them as the autumn progressed. Purchasing managers' indices (PMI) started to fall again following a strong rebound after April, particularly in the eurozone, owing to reduced activity in services sectors. On the other hand, manufacturing has held its ground (Chart I-7). In addition, high-frequency indicators suggested a steady decline in mobility: international travel slowed once again, and retail and recreational activity declined as well (Chart 1 in Appendix 1). This is probably due in large part to developments in the pandemic, which began to escalate among trading partner countries in the autumn, prompting governmental authorities to tighten public health measures. In almost all of these countries, new COVID cases exceeded the springtime peaks, possibly due in part to increased testing, which has improved detection rates and thus enabled healthcare authorities to implement less onerous disease prevention measures (Charts I-8 and I-9). On the other hand, the continued escalation of the pandemic in recent weeks has led to even more stringent government-mandated measures, including lockdowns, particularly in Europe. Some authorities have even resorted to measures similar to those imposed in the first wave of the pandemic, in response to increased strain on their healthcare systems. The GDP growth outlook for Q4 has therefore deteriorated in most

Chart I-6  
US unemployment claims<sup>1</sup>  
1 January 2000 - 7 November 2020



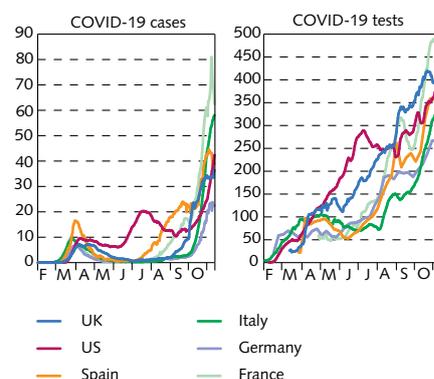
1. Number of initial claims for US unemployment insurance. Seasonally adjusted weekly data.  
Source: Federal Reserve Bank of St. Louis FRED-database.

Chart I-7  
Composite PMI<sup>1</sup>  
January 2015 - October 2020



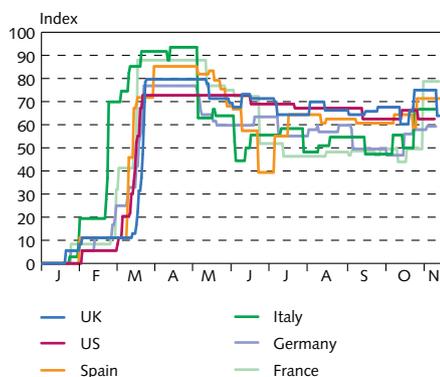
1. IHS Markit composite output purchasing managers' index. The index is published monthly and is seasonally adjusted. An index value above 50 indicates month-on-month growth in output, and a value below 50 indicates a contraction.  
Source: Refinitiv Datastream.

Chart I-8  
Daily new cases of COVID-19 and number of tests conducted<sup>1</sup>  
1 February - 13 November 2020



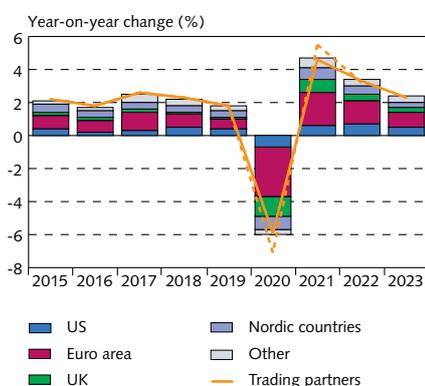
1. Daily number of tests conducted and diagnosed cases of COVID-19 per 100,000 inhabitants. Seven-day moving average.  
Sources: Johns Hopkins University, OECD, Our World in Data, WHO.

Chart I-9  
Scope of governments' public health measures<sup>1</sup>  
19 January - 13 November 2020



1. The scope of public health measures weights together nine measures of the extent of government restrictions in order to curb the spread of COVID-19, including the scope of school and workplace closures, bans on public gatherings, and travel restrictions.  
Sources: Oxford COVID-19 Government Response Tracker.

Chart I-10  
GDP growth in main trading partners and contribution from selected countries 2015-2023<sup>1</sup>



1. Central Bank baseline forecast 2020-2023. Broken line shows forecast from MB 2020/3. The Nordic countries is the average for Denmark, Norway, and Sweden.  
Source: Refinitiv Datastream, Central Bank of Iceland.

of Iceland's trading partner countries, especially in the eurozone, and trading partner GDP growth is expected to contract again quarter-on-quarter.

### Global economic contraction in 2020 set to be smaller than previously feared ...

According to the International Monetary Fund's (IMF) most recent forecast, the global economy will contract by 4.4% this year. This is 0.8 percentage points smaller than the contraction forecast by the Fund in June, but 1.1 percentage points larger than it projected in April. The revision since June is due to an improved outlook for advanced economies, which in turn is due primarily to a smaller Q2 contraction in the US and the eurozone than the Fund had anticipated. GDP growth in China has also rebounded more quickly than expected, but because of the poorer outlook for other emerging market economies (EME) – India in particular – a slight contraction is expected for EMEs as a whole. Even though the IMF considers global economic prospects to have improved this year, the outlook is still for the largest peacetime contraction since the Great Depression in the 1930s.

### ... and the outlook for Iceland's trading partners has improved

In line with the smaller economic contraction in Q2 and the prospect of a stronger recovery in Q3, GDP among Iceland's main trading partners is now expected to contract less in 2020 than the Bank assumed in August. The revision is due mainly to the improved outlook for the US and the eurozone, but also for the Nordic countries. Despite the weaker outlook for Q4, the contraction among trading partners is projected to average 5.9%, 1.2 percentage points smaller than in the August forecast (Chart I-10). Forecasts of trading partner imports have also improved in line with the brighter outlook for global GDP and world trade, and the contraction for this year is now forecast at 10.4%. Even though the GDP growth outlook has improved since August, it appears that the contraction among Iceland's main trading partners will be nearly twice as large in 2020 as in 2009, and the largest since World War II.

### Prospect of strong GDP growth in 2021, but the outlook is highly uncertain

The global economic situation for the coming term is highly uncertain, owing mainly to uncertainty about how successful efforts to control the pandemic will be. International forecasts assume that a COVID-19 vaccine will be available for general use early next year and that a significant share of the population in Iceland's main trading partner countries will have been vaccinated by mid-year. With the arrival of a vaccine and other successful medical treatment for the disease, it is expected that public health measures can gradually be scaled down and economic activity can start to normalise. If this assumption is borne out, economic activity could rebound strongly in 2021. According to the Bank's baseline forecast, GDP growth among Iceland's trading partners will average 4.6% in 2021, which nevertheless is slightly

weaker than was forecast in August. The outlook for the latter half of the forecast horizon is broadly unchanged, however. These assumptions are subject to considerable uncertainty, however, not least because it not known how successful efforts to quell the pandemic will prove to be (for further discussion, see Box 1).

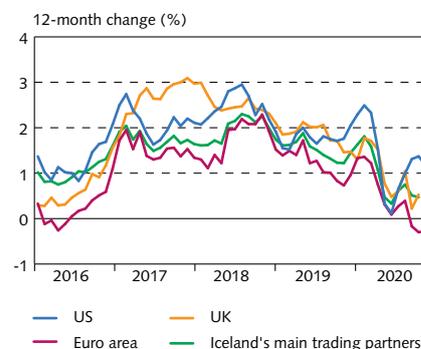
### Global inflation has eased, but the inflation outlook is broadly unchanged

Global inflation fell rapidly in the spring, in tandem with a steep drop in energy prices and the COVID-19-driven contraction in overall demand, although the price of some goods rose – food in particular – because of various production problems and shortages (for further discussion, see Box 2). Among Iceland's trading partners, year-on-year inflation averaged only 0.5% in Q2, after falling by more than 1 percentage point since the turn of the year (Chart I-11). This trend has reversed in part, however, and inflation has risen again in most trading partner countries, as economic activity picks up and oil and commodity prices rise. On the other hand, inflation sagged even further in the eurozone in late summer, and measurements now show slight deflation for the first time in four years. This is due to a decline in underlying inflation, which is at an all-time low in the region, partly because of lower services inflation as a result of the pandemic. Lower inflation in the eurozone is the main reason the inflation outlook for trading partner countries has remained more or less unchanged since August. Trading partner inflation is expected to average 0.8% this year but then rise to 1.7% by the latter half of the forecast horizon.

### Financial conditions have improved after significant turmoil early in the year, but considerable uncertainty remains

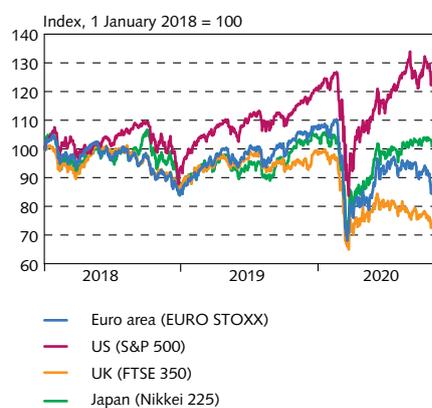
After being thrown into disarray by the COVID-19 outbreak in February and March, international financial markets have rallied in response to increased economic activity and greater optimism about the development of a COVID vaccine in the near future. Mitigating measures taken by central banks and governmental authorities have played a key role in supporting markets, facilitating government and corporate bond issues, boosting market agents' confidence in the economic outlook, and preventing the shock from having an even more profound impact on the global financial system. Share prices in leading advanced economies have therefore risen since the spring, and volatility has subsided (Chart I-12). This is particularly the case for share price indices in the US and Japan, which are now above pre-pandemic levels. The rise in risk premia and interest rate spreads on riskier financial assets has also reversed in large part. Capital flows to EMEs have stabilised after strong outflows earlier in the year, and inflows to some EMEs have begun to pick up again. Long-term interest rates in leading advanced economies have also risen somewhat but remain at or near historical lows. As a result, financial conditions have improved overall, but the situation remains fragile and highly uncertain.

Chart I-11  
Global inflation  
January 2016 - October 2020



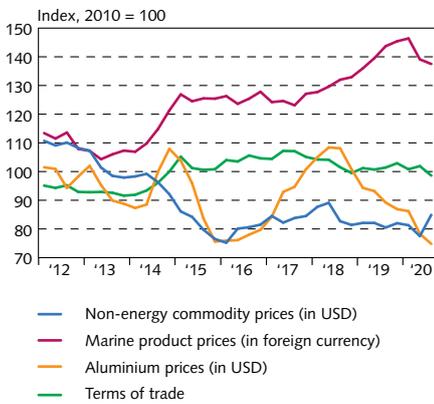
Sources: Refinitiv Datastream, Central Bank of Iceland.

Chart I-12  
Global share prices  
1 January 2018 - 13 November 2020



Source: Refinitiv Datastream.

Chart I-13  
Commodity prices and terms of trade<sup>1</sup>  
Q1/2012 - Q3/2020



1. Foreign currency prices of marine products are calculated by dividing marine product prices in Icelandic krónur by the trade-weighted exchange rate index. USD prices of aluminium products are calculated by dividing aluminium prices in Icelandic krónur by the exchange rate of the US dollar. Central Bank baseline forecast Q3/2020 for terms of trade.  
Sources: Statistics Iceland, World Bank, Central Bank of Iceland.

## Export prices and terms of trade

### Outlook for marine product prices to fall in 2020 after a two-year surge ...

The price of Icelandic marine products has been relatively stable in the recent term, after a significant pandemic-induced decline in H1 (Chart I-13). Market conditions for Icelandic products have remained difficult, however, due to reduced restaurant sector activity in trading partner countries. Marine product prices were down 4.3% year-on-year in foreign currency terms in Q3, and the outlook for H2/2020 has deteriorated since August. In 2020, marine product export prices are expected to fall by 0.6% year-on-year instead of rising by 3%, as was forecast in August. On the other hand, the rise in 2021 is projected to be larger than was assumed in August.

### ... and aluminium prices are expected to fall for the second year in a row

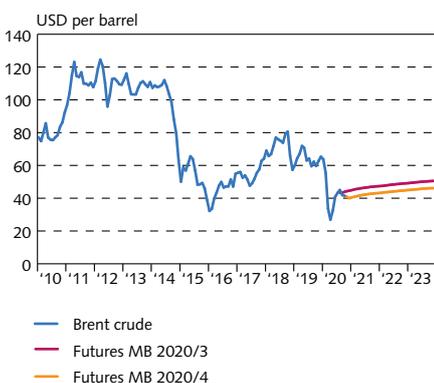
Global aluminium prices fell steeply in Q1/2020, owing mainly to weaker demand from China as a result of pandemic-related lockdowns there (Chart I-13). Furthermore, demand in the US and Europe began to slide towards the end of the quarter, when the resurgence of the pandemic in the West prompted governments to impose stricter public health measures. Aluminium prices have bounced back since then, however, in tandem with China's swift recovery, and are higher than at the turn of the year. In spite of this, the price of Iceland's aluminium exports is now expected to fall by just over 11% instead of the 8% forecast in August. As in August, aluminium prices overall are projected to continue rising throughout the forecast horizon.

### Oil prices have held relatively stable after righting themselves this spring ...

After plunging early in the year, global oil prices picked up in the spring and early summer. The increase reflected both reduced production among leading oil manufacturing countries and increased demand following the relaxation of public health measures and growing economic activity. Prices remained relatively stable during the summer but then fell in the autumn, primarily because of growing concerns that rising COVID-19 case numbers could cause a setback in the global economy and dampen demand for oil. In addition, increased production by OPEC countries and other non-OPEC producers may have contributed to lower prices, although production levels are still much lower than at the beginning of the year.

Brent crude prices averaged just under 42 US dollars per barrel in October, a full third lower than at the turn of the year, and the outlook is for prices to remain low in the next few years (Chart I-14). According to a recent forecast from the International Energy Agency (IEA), demand for oil is expected to average 8% lower this year than in 2019, which would represent a decline roughly twice the size of the largest single-year contraction in at least the last eight decades. Furthermore, demand is forecast to increase by 6% in 2021 but will not return to pre-pandemic levels until 2023. At the same time, rising

Chart I-14  
Global oil prices  
January 2010 - December 2023



Sources: Refinitiv, Central Bank of Iceland.

production and destocking of large inventories are expected to keep oil prices in check.

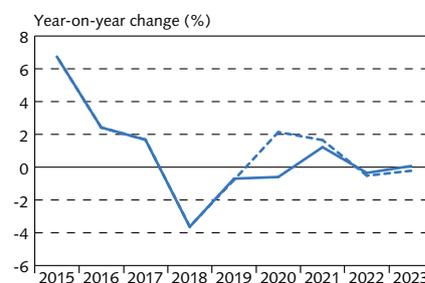
### ... while the price of other commodities has fallen still further

The price of non-energy commodities has risen steadily since the spring, after falling steeply in response to the pandemic, and is now higher than at the turn of the year (Chart I-13). Metals prices have risen the most, mainly because of increased demand from China, but also due to pandemic-related disruptions in mining, which affected supplies. Agricultural product prices have also recovered, driven mainly by rising food and beverage prices. Commodities are expected to rise in price by 1.1% year-on-year in 2020 instead of falling by 2.6%, as was assumed in August. On the other hand, the increase in 2021 is now expected to be smaller than was forecast in August.

### Terms of trade expected to deteriorate further in 2020

Terms of trade for goods and services improved by just over 1% quarter-on-quarter in Q2/2020 (Chart I-13). They appear to have deteriorated again in Q3, however, and will therefore worsen by 0.6% over the year as a whole, whereas the August forecast assumed an improvement of 2.1% (Chart I-15). The outlook for 2021 has deteriorated as well.

Chart I-15  
Terms of trade for goods and services  
2015-2023<sup>1</sup>



1. Central Bank baseline forecast 2020-2023. Broken line shows forecast from MB 2020/3.

Sources: Statistics Iceland, Central Bank of Iceland.



## II Monetary policy and domestic financial markets

### Monetary policy and market interest rates

#### Key rate unchanged since May ...

The Central Bank's key interest rate (the rate on seven-day term deposits) has been unchanged since May, when the Bank's Monetary Policy Committee (MPC) decided to lower it by 0.75 percentage points. Just before this *Monetary Bulletin* went to press, the key rate was 1% and had fallen by a total of 2 percentage points since the turn of the year (Chart II-1). The Central Bank has also adopted other measures in order to increase market liquidity, with the aim of improving access to credit and stimulating demand. According to the Central Bank survey carried out in early November, market agents expect rates to remain unchanged until the end of 2021 but to measure 1.25% in two years' time.

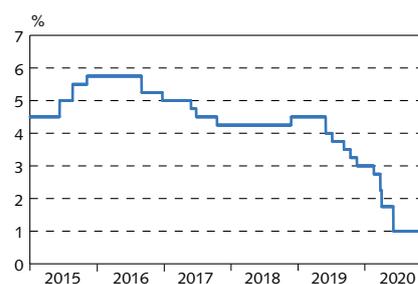
The Bank's real rate has fallen in line with the decline in the key rate. In terms of the average of various measures of inflation and one-year inflation expectations, the real rate is now -2.1%. It has fallen by 0.7 percentage points since the end of May and by 2.5 percentage points since November 2019. The interest rate differential with abroad has also narrowed during the year, and short-term real rates in Iceland are now 2 percentage points below the trading partner average.

#### ... but long-term rates have risen

The yield on ten-year nominal Treasury bonds began rising this summer, to 3.2% just before this *Monetary Bulletin* was published. This represents an increase of 0.5 percentage points since the end of February, when Iceland's first COVID-19 case was diagnosed. It is still 0.3 percentage points lower than it was a year ago, however (Chart II-2). Yields on shorter bonds have not risen as much, as increased liquidity and declining short-term rates have boosted demand for Treasury bills and short-term Treasury bonds. The yield on ten-year indexed Treasury bonds also started rising this summer, to 0.7% just before this *Monetary Bulletin* was published. The Treasury's financing need has grown as the pandemic has dragged on, and expectations of increased Treasury debt in coming years probably weigh heavily in the recent rise in long-term interest rates. Furthermore, non-residents have sold Treasury bonds in the amount of 45 b.kr. since the beginning of August. In addition, positive news in early November about the development of a vaccine have kindled investors' optimism about a speedier recovery from the economic shock. In March 2020, the Central Bank announced plans to begin buying Treasury bonds in the secondary market so as to ensure that the more accommodative monetary stance would be transmitted to households and businesses. The Bank's bond purchases to date come to 2 b.kr. market value but, according to the decision taken by the MPC, may range up to 150 b.kr.

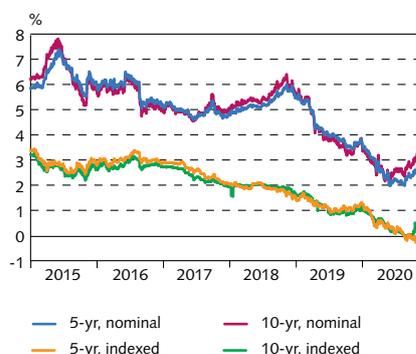
Despite the prospect of increased Treasury debt in coming years (see Box 3) and the turmoil in the global economy and financial markets, risk premia on the Treasury's foreign obligations have held rela-

Chart II-1  
Central Bank of Iceland key interest rate<sup>1</sup>  
1 January 2015 - 13 November 2020



1. The Central Bank's key interest rate is the rate on seven-day term deposits.  
Source: Central Bank of Iceland.

Chart II-2  
Government-guaranteed bond yields<sup>1</sup>  
2 January 2015 - 13 November 2020



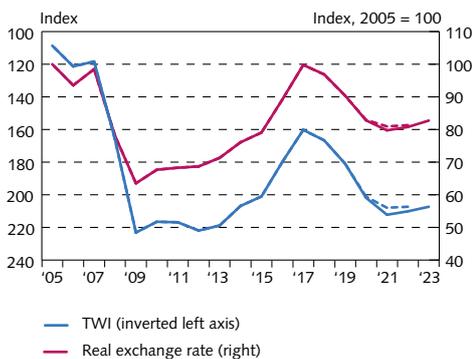
1. Based on the zero-coupon yield curve, estimated with the Nelson-Siegel method, using money market interest rates and government-guaranteed bonds.  
Source: Central Bank of Iceland.

Chart II-3  
Exchange rate of the króna<sup>1</sup>  
2 January 2015 - 13 November 2020



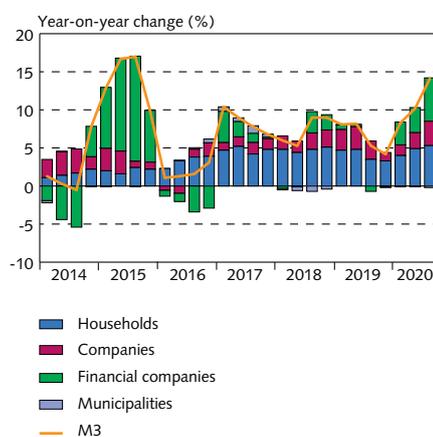
1. Price of foreign currency in krónur (narrow trade index).  
Source: Central Bank of Iceland.

Chart II-4  
Exchange rate of the króna 2005-2023<sup>1</sup>



1. The trade-weighted exchange rate index (TWI) is based on a narrow trade basket. Real exchange rate in terms of relative consumer prices. Central Bank baseline forecast 2020-2023. Broken lines show forecast from MB 2020/3.  
Source: Central Bank of Iceland.

Chart II-5  
Money holdings<sup>1</sup>  
Q1/2014 - Q3/2020



1. M3 is adjusted for deposits of failed financial institutions. Companies include non-financial companies and non-profit institutions serving households.  
Source: Central Bank of Iceland.

tively stable this year. Therefore, the foreign borrowing terms available to the Treasury appear generally good at present.

## Exchange rate of the króna

### The króna has depreciated recently, and the Bank has begun regular currency sales

The exchange rate of the króna fell markedly after the pandemic reached Iceland and its effects on the economy grew clearer. From end-February until early May, it fell by 12% relative to the trading partner average. The króna began appreciating again over the course of May, however, as optimism about increased tourist numbers took hold and efforts to control the first wave of the pandemic proved successful. But that appreciation quickly reversed. Since June, there has been downward pressure on the króna, with non-residents increasingly selling Treasury bonds and exporting the proceeds and, from August onwards, with the pension funds stepping up their foreign asset purchases. Foreign currency inflows have also been limited, although the current account is in surplus. The pressure on the króna eased temporarily in early September, when the Central Bank announced plans to begin regular foreign currency sales so as to deepen the foreign exchange market and improve price formation. The average exchange rate is currently about 2.2% higher than it was before that announcement, but 12% lower than at the time of the first domestic COVID case in late February (Chart II-3).

In addition to its regular currency sales, the Central Bank has intervened more in the foreign exchange market this year than in the previous two. The objective of the intervention is to reduce exchange rate volatility, but it also reflects the fact that the real exchange rate is probably below its equilibrium at present, at a time when inflation is above the target. Thus far in 2020, the Bank's net foreign currency sales total 105 b.kr., or 34% of total market turnover.

The exchange rate index was 207.8 points in Q3, which is well in line with the Bank's August forecast. However, the króna is weaker now than was projected in August, and the baseline forecast assumes that the index will average close to 212 points over the next two years, followed by a slight appreciation of the króna towards the end of the forecast horizon (Chart II-4). The real exchange rate will therefore fall even further this year but then rise gradually from 2022 onwards. By the end of the forecast horizon, it will still be almost 17% below its 2017 peak.

## Money holdings and lending

### Money holdings have increased rapidly in the recent term

Money holdings have increased considerably this year, and annual growth in M3 measured 14% in Q3, as compared with 5% in Q3/2019 (Chart II-5). The easing of the monetary stance and special Central Bank measures to increase market liquidity play a major role in this shift. Furthermore, households' bank deposits have grown significantly in the wake of the COVID-19 pandemic. Household deposits increased by 11% year-on-year in Q3, as opposed to 7.4% at the

same time in 2019. General wage rises, reduced consumption spending associated with public health measures, pandemic-related support measures for households, and increased lending due to lively real estate market activity all play a part in the increase. In addition, a high level of uncertainty has prompted households to observe more caution in their spending decisions, and because of the various Government support measures, the impact of the economic shock on those who have lost income has probably come to the fore only to a limited degree. Households' saving has therefore grown substantially in recent months, as can be seen in the increase in banking system deposits (for further discussion, see Box 1).

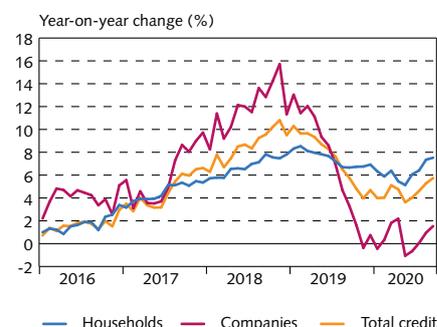
Growth in money holdings also reflects an increase in other financial institutions' banking system deposits. This is due largely to an increase in pension fund deposits, which in turn stems in part from their reduced foreign currency purchases and from households' having shifted their mortgage financing from the pension funds to the commercial banks. Furthermore, HF Fund (formerly the Housing Financing Fund) moved its deposits from the Central Bank to the commercial banks after the autumn 2019 announcement reducing the number of parties eligible to hold deposits with the Bank.

### Household lending up strongly, while corporate lending has stalled

Lending growth lost pace last year, but thus far in 2020, annual growth in credit system lending has held steady at around 5% (Chart II-6). As the year has passed, lending to households has increased, due almost entirely to mortgage loans, as lending rates fell sharply in the wake of Central Bank rate cuts and housing market turnover has been brisk. Rising house prices, increased saving, and lower interest rates also give households the option of refinancing, thereby lowering their debt service burden and perhaps affording them the scope to withdraw equity to finance home improvements or other consumption spending. The banks' share in the mortgage lending market has been on the rise this year, as pension fund lending has slowed and the banks generally offer more favourable rates at present. Furthermore, the share of non-indexed mortgage loans has risen in recent months, as has the share of variable-rate loans.

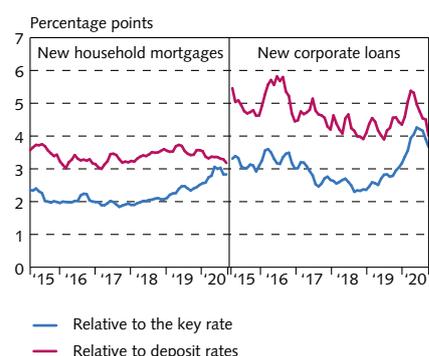
On the other hand, corporate loans have virtually stood still this year. The growth rate began to slow as early as 2019, with declining economic activity and higher returns required by commercial banks on corporate loans. Support loans, bridge loans, and other measures have supported growth in lending to the companies affected most severely by the pandemic, however. Credit spreads on new corporate loans also started to rise in 2019, but they have fallen again in the recent term (Chart II-7). Although low-interest Government-guaranteed support loans have some downward impact on average lending rates, they do not appear to weigh heavily in the trend; therefore, firms' borrowing terms appear to have improved overall.

Chart II-6  
Credit system lending<sup>1</sup>  
January 2016 - September 2020



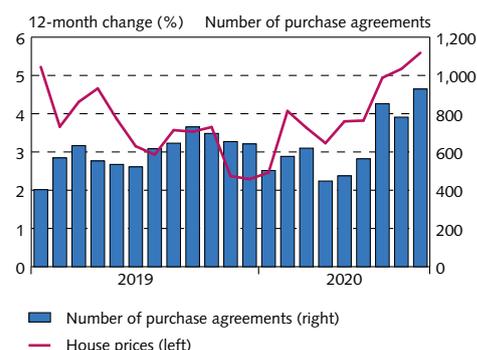
1. Credit stock adjusted for reclassification and effects of Government debt relief measures. Excluding loans to deposit institutions, failed financial institutions, and the Government. Companies include non-financial companies and non-profit institutions serving households.  
Source: Central Bank of Iceland.

Chart II-7  
Credit spreads<sup>1</sup>  
March 2015 - September 2020



1. The difference between a weighted average of the large commercial banks' non-indexed lending rates and the Central Bank's key rate, on one hand and a weighted average of their deposit rates on the other. Three-month moving average.  
Source: Central Bank of Iceland.

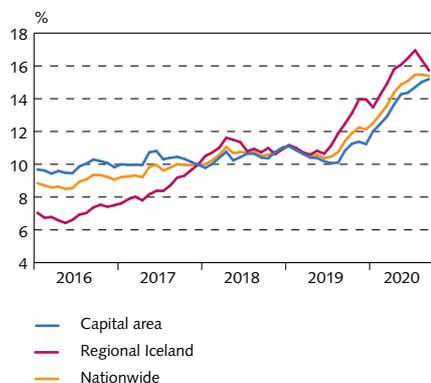
Chart II-8  
Capital area house prices and number of purchase agreements<sup>1</sup>  
January 2019 - September 2020



1. Number of purchase agreements on date of purchase.  
Sources: Registers Iceland, Central Bank of Iceland.

Chart II-9  
House purchase agreements: share due to newly built flats<sup>1</sup>

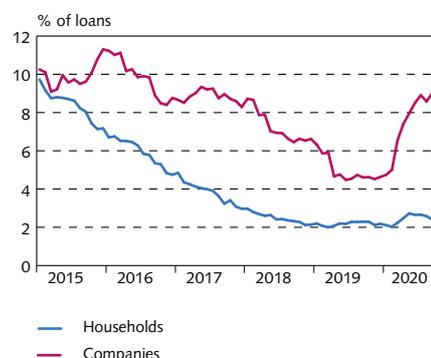
January 2016 - September 2020



1. Number of purchase agreements on date of purchase. Twelve-month moving average.  
Source: Registers Iceland.

Chart II-10  
Non-performing loan ratios<sup>1</sup>

January 2015 - September 2020



1. Loans granted by systemically important financial institutions. This includes Landsbankinn, Arion Bank, Íslandsbanki and, until end-2019, the Housing Financing Fund. Non-performing loans are defined as loans that are frozen, in arrears by more than 90 days or those for which payment is deemed unlikely. If one loan taken by a customer is in arrears by 90 days or more, all of that party's loans are considered non-performing (cross-default). Parent companies, book value.  
Source: Central Bank of Iceland.

## Asset prices and financial conditions

### House prices buoyant in a busy market

House prices in greater Reykjavík rose by 5.6% year-on-year in September and have risen by 4% since the pandemic struck Iceland in late February (Chart II-8). Housing market turnover has been strong in the recent past, with Central Bank rate cuts stimulating demand and partly offsetting the adverse economic impact of the pandemic. The number of registered purchase agreements in greater Reykjavík rose by roughly 10% year-on-year in the first nine months of 2020, while contracts for new construction rose far more, or by nearly 59%. Newly constructed homes therefore account for a much larger share of purchase agreements than in 2019 (Chart II-9). The change in the proportion of newly built versus older flats may exaggerate the increase in house prices, as new flats generally sell at a higher price per square metre than older ones. Furthermore, the share of first-time buyers in the capital area has risen in recent years, to a record high of 29% in H1/2020.

The OMXI10 share price index has risen by 10.2% since the August *Monetary Bulletin*, with all listed companies' shares rising in price in the interim. The OMXI10 is now higher than it was before the pandemic arrived in Iceland. Stock market turnover has declined, however, and was down 7% year-on-year over the first ten months of 2020.

### Corporate arrears are rising rapidly, while household arrears are broadly unchanged

The non-performing household loan ratio is marginally higher now than at the turn of the year, but it remains relatively low in historical context (Chart II-10). As of end-October, less than 2% of loans to households were in moratorium, which means they are not classified as non-performing, but this percentage has fallen steadily from its late May peak. The small increase in household arrears is a sign that households' debt position is good overall; however, arrears can be expected to rise as unemployment increases and special labour market measures start to expire.

Non-performing corporate loan ratios have risen steeply, however, nearly doubling year-to-date. This increase in business arrears is one manifestation of the difficulties firms are facing at present. Furthermore, as of end-October, 4% of corporate loans were protected by special pandemic-related deferral measures and are therefore not classified as non-performing. A third of companies with loans currently in moratorium were in the tourism industry, and another third were in other services sectors. Presumably, the measures enacted by the Government and financial institutions have mitigated the effect of the pandemic on firms' debt service capacity and helped many companies to remain solvent for a longer period. Even so, corporate insolvencies are up by about a fifth year-on-year in 2020 to date, although they are only slightly above the ten-year average.

## III Demand and GDP growth

### Domestic private sector demand

#### Private consumption contracted strongly in Q2 ...

Broad-based public health measures aimed at curbing the spread of COVID-19 in March and April had a strong impact on households' willingness and opportunity to spend. Private consumption declined by 9% quarter-on-quarter in Q2, the largest single-quarter contraction since Q4/2008 (Chart III-1). It contracted by 8.3% from Q2/2019, slightly less than had been forecast in the August *Monetary Bulletin*.

#### ... but rebounded in Q3 ...

Private consumption appeared to recover strongly at the end of Q2 and into the summer, when the pandemic had receded and public health measures were relaxed (Chart 2 in Appendix 1). Traffic increased markedly from the level seen in March and April. The same pattern could be seen in households' domestic payment card use for purchases of groceries and specialty goods, as well as miscellaneous services requiring close physical proximity to others (Chart III-2). Private consumption is estimated to have increased by just over 2% between Q2 and Q3, somewhat more than was forecast in August (Chart III-1).

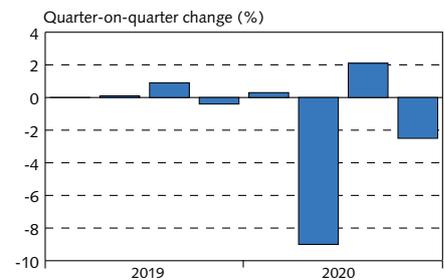
#### ... only to sag again in Q4

The resurgence of the pandemic in late September prompted a further tightening of public health measures and a renewed contraction in economic activity. As Chart 2 in Appendix 1 indicates, traffic declined in the greater Reykjavík area, and payment card turnover lost pace, particularly to include spending on activities requiring close physical proximity to other people (see also Chart III-2). Because of this setback in the battle with the pandemic, private consumption is now expected to contract once again in Q4 (Chart III-1). If this forecast materialises, the contraction for the year as a whole will measure 5.5%. Even so, this is a smaller contraction than was forecast in August, owing to stronger-than-projected private consumption in H1 (Chart III-3).

#### Private consumption forecast to rebound in 2021 – depending on developments in the pandemic

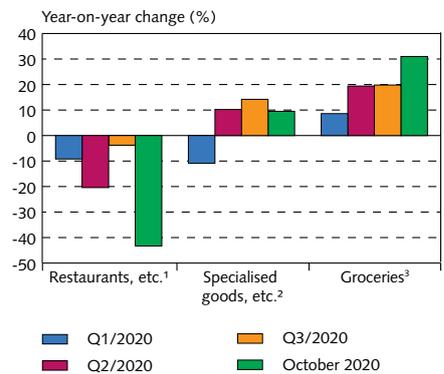
Near-term developments in household demand depend in large part on how successful efforts to contain the pandemic prove to be, as public health measures restrict the supply of various services and affect households' income and expectations. The current baseline forecast assumes that the battle with the pandemic will take longer than was projected in August, as the situation deteriorated again this fall. It is now assumed that the worst of the pandemic will be over in Iceland by the end of this year, although continued isolated outbreaks cannot be ruled out. It is also assumed that a vaccine will be available early in 2021 and mass-produced thereafter, and that much of the population in Iceland and its key trading partners will have been inoculated by

Chart III-1  
Quarterly growth in private consumption<sup>1</sup>  
Q1/2019 - Q4/2020



1. Seasonally adjusted data. Central Bank baseline forecast for Q3 and Q4/2020.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-2  
Payment card turnover by main categories



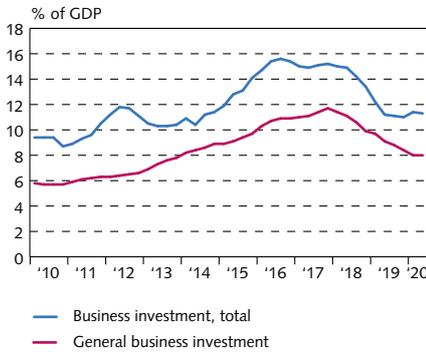
1. Restaurants, accommodation, transport, package tours, duty-free shopping, culture and recreation, and personal care and services.  
2. Electronics, household appliances, furniture, clothing, and other specialised retail goods and services. 3. Grocery stores and supermarkets.  
Source: Centre for Retail Studies.

Chart III-3  
Private consumption 2005-2023<sup>1</sup>



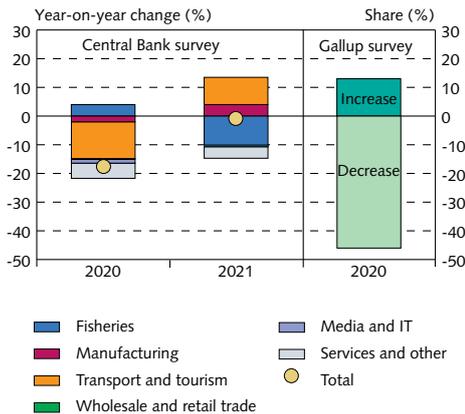
1. Central Bank baseline forecast 2020-2023. Broken line shows forecast from MB 2020/3.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-4  
Business investment<sup>1</sup>  
Q1/2010 - Q2/2020



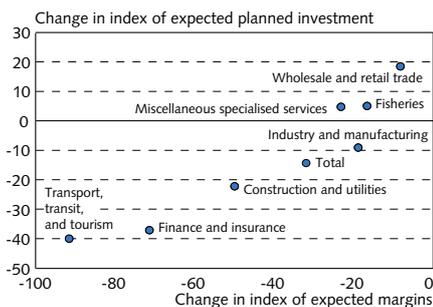
1. Four-quarter moving average. General business investment excludes ships, aircraft, and energy-intensive industry. Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-5  
Indicators of investment plans<sup>1</sup>



1. Central Bank survey of 96 firms' investment plans (excluding investments in hotels, ships, and aircraft). Gallup survey of Iceland's 400 largest companies' investment plans. The chart shows the share of firms intending to increase investment and the share intending to decrease it. Sources: Gallup, Central Bank of Iceland.

Chart III-6  
Business executives' expectations concerning margins and investment expense<sup>1</sup>



1. Change between surveys carried out in March and September 2020. Respondents were asked about their expectations concerning their margins in the next six months and whether their 2020 investment spending would be greater than or less than in 2019. Source: Gallup.

mid-year. Widespread inoculation and improvements in treatment will reduce the need for social distancing over the course of the year and make it possible for daily life to normalise gradually.

Until then, it is assumed that households will use a portion of the savings they accumulated earlier this year to finance consumption spending. A majority of households have a strong asset and debt position, and lower interest rates have eased their expense burden. Government measures to protect jobs and household incomes are also important, and many households have taken advantage of the authorisation to withdraw third-pillar pension savings to cover current expenses. These measures have partially offset income losses stemming from declining employment levels.

The Bank's baseline forecast assumes that private consumption will rise again in Q1/2021 and grow by nearly 3% in 2021 as a whole. It is expected to continue rising over the forecast horizon and grow by just under 4% per year in 2022-2023. Box 1 examines alternative scenarios that provide for differing levels of success in the battle with the pandemic. It also shows alternative scenarios based on different assumptions concerning how quickly households tap the savings they have accumulated recently.

**Business investment contracted in H1/2020 ...**

Business investment contracted in H1/2020 by 4.7% year-on-year, less than was forecast in August. The contraction in Q2 measured nearly 18% year-on-year but was offset in part by positive base effects from the previous quarter, due to the sale of aircraft from WOW Air's fleet in Q1/2019. The contraction in general business investment in H1 (i.e., investment excluding energy-intensive industry, ships, and aircraft) was even larger, or nearly 18% between years, and investment in energy-intensive industry shrank by around 30%. The business investment-to-GDP ratio has therefore fallen rapidly in the recent term and is now below its twenty-five-year average (Chart III-4).

**... and firms expect to cut investment spending this year**

The results of the Central Bank survey of businesses' investment plans suggest that their investment spending will be nearly 18% less this year than in 2019 (Chart III-5). Businesses are therefore considerably more pessimistic about their investment plans than in a comparable survey taken in March, which presumably did not reflect the full impact of the pandemic on investment decisions. Over half of the firms surveyed estimate that they will invest less this year than in 2019, and those that have been hit hardest by reduced tourist numbers have scaled their plans down the most. These results are in line with Gallup's September survey among Iceland's 400 largest firms, where 46% of respondents expect to invest less this year than last (Chart III-5). According to that survey, only 13% of executives expect to invest more this year than in 2019. The balance of opinion has not been as negative since September 2009. According to Gallup, executives' expectations concerning demand and margins in the next six months, which correlate relatively strongly with investment plans, have deteriorated since the spring (Chart III-6).

### Business investment set to contract more in 2020 than previously projected

In addition to these survey results, it appears that hotel construction activity will decline more in 2020 and 2021 than was assumed in the Bank's last forecast. The same is true of commercial property construction in 2020. General business investment is expected to contract by a full 22% this year, in addition to the downturn in energy-intensive industry, where investment is set to contract by one-fourth. If the Bank's forecast materialises, business investment will decline by nearly a fifth between 2019 and 2020, a full 6 percentage points more than previously forecast.

### Residential investment to contract strongly this year

A new tally taken by the Federation of Icelandic Industries in September indicates that the number of flats under construction has fallen considerably, and the Bank's baseline forecast assumes that residential investment will contract by nearly a fifth in 2020. This is due partly to a reduced number of housing starts, which in turn stems partly from increased difficulty in financing new projects and from a limited supply of lots. Added to this is uncertainty relating to the pandemic, although it is offset to a degree by the Government support measures from the spring and the decision to extend value-added tax reimbursements on new construction through the end of 2021.

### Total investment to contract markedly in 2020 and turn around slowly in 2021

Total investment is assumed to contract by 15½% this year, somewhat more than was forecast in August (Chart III-7). The Bank's survey of businesses' year-2021 investment plans suggests that firms will hold back on investment spending until the pandemic has started to recede (Chart III-5). The baseline forecast therefore assumes that business investment will virtually stand still next year, while total investment will increase by just over 3% year-on-year and then by 6% per year, on average, in 2022-2023.

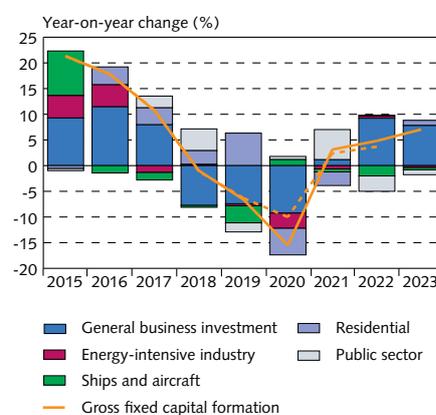
## Public sector

### Public consumption and investment stimulated with special measures

Public sector demand is expected to increase by 3.9% this year, a slower rate than was assumed in the Bank's August forecast. The weightiest factor here is Government investment, which turned out a fifth lower in H1/2020 than in a typical season. Public consumption spending was stronger, however, and looks set to increase by nearly 4% in 2020 as a whole, owing to discretionary measures to mitigate the impact of the pandemic. The Bank's baseline forecast assumes that a portion of the Government investment initiative planned for this year will be shifted to 2021. As a result, public sector demand will grow somewhat more in 2021 than was forecast in August, or just over 4%. For the forecast horizon as a whole, the outlook is therefore broadly unchanged from the August forecast.

Chart III-7

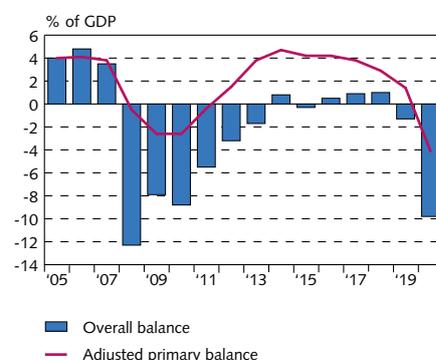
Gross fixed capital formation and contribution of main components 2015-2023<sup>1</sup>



1. General business investment excludes ships, aircraft, and energy-intensive industry. Central Bank baseline forecast 2020-2023. Broken line shows forecast from MB 2020/3.  
Sources: Statistics Iceland, Central Bank of Iceland.

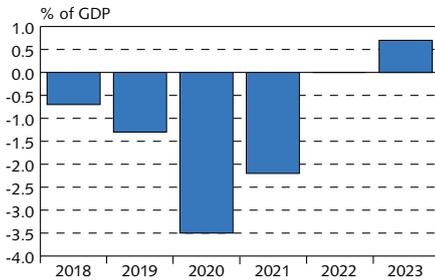
Chart III-8

Treasury outcome 2005-2020<sup>1</sup>



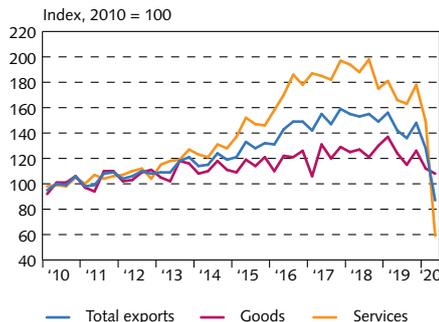
1. The primary balance is adjusted for one-off items. For 2016 through 2020, both the overall balance and the primary balance are adjusted for stability contributions, accelerated write-downs of indexed mortgage loans, a special payment to LSR A-division, dividends in excess of the National Budget, and other discretionary measures. Central Bank baseline forecast 2020.  
Sources: Ministry of Finance and Economic Affairs, Statistics Iceland, Central Bank of Iceland.

Chart III-9  
Change in central government cyclically adjusted primary balance 2018-2023<sup>1</sup>



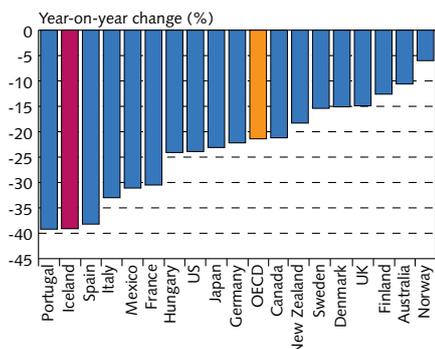
1. The primary balance is adjusted for one-off items. Central Bank baseline forecast 2020-2023.  
Sources: Ministry of Finance and Economic Affairs, Statistics Iceland, Central Bank of Iceland.

Chart III-10  
Exports of goods and services<sup>1</sup>  
Q1/2010 - Q2/2020



1. Seasonally adjusted volume indices.  
Source: Statistics Iceland.

Chart III-11  
Q2 exports in selected OECD countries<sup>1</sup>



1. Seasonally adjusted volume indices for exports of goods and services.  
Sources: OECD, Central Bank of Iceland.

### Large Treasury deficit expected in coming years

The abrupt economic turnaround will severely affect the Treasury outcome in 2020 and throughout the forecast horizon, due both to automatic fiscal stabilisers and to the discretionary measures taken by the Government to mitigate the economic repercussions of the pandemic (for further discussion, see Box 3). The Bank's baseline forecast assumes that the deficit on the overall balance will increase from 1.3% of GDP in 2019 to 9.8% in 2020. By the same token, the primary balance will reverse to a deficit of 4% of GDP, overtaking the post-financial crisis peak in 2009, as the Treasury loss at that time showed more in the capital account (Chart III-8).

### Fiscal easing counteracts the economic contraction

It is assumed that the cyclically adjusted primary balance will deteriorate by 3.5% of GDP this year (Chart III-9). The easing of the fiscal stance this year reflects the discretionary pandemic response measures introduced in the spring and autumn, which entail both spending increases and relinquished tax revenues. Further fiscal easing of more than 2% of GDP is expected next year. However, the Government's fiscal plan assumes that unspecified consolidation measures will be introduced in 2023-2025 in order to halt the rise in the debt-to-GDP ratio.

### External trade and the current account balance

#### Exports contract strongly in Q2

Goods and services exports contracted by 38.8% year-on-year in Q2/2020, the largest single-quarter contraction on record. The virtual halt in international air travel to and from Iceland resulted in a 91% year-on-year contraction in tourism-related exports. Services exports shrank by over 64%, to the level last seen in 2003 (Chart III-10). The contraction in goods exports in the wake of the pandemic was much smaller, or 12.9%, with an 11.7% decline in marine product exports playing a major role.

The fall in exports in Q2 was nearly twice the OECD average (Chart III-11). A similar contraction in exports could be seen only in Portugal and Spain, both of which rely heavily on tourism.

Indicators point to a slight improvement in Q3/2020. The year-on-year contraction in tourism eased (Chart 2 in Appendix 1), and a further increase is expected in other services exports (i.e., pharmaceuticals companies' intellectual property exports, high-tech research, and services from various computer and software firms). The contraction in exports of marine product and other goods appears to have eased as well, and aluminium exports have flipped from a contraction to an increase between years.

#### The outlook for goods exports has deteriorated

The outlook for goods exports in 2020 has worsened somewhat since August. A contraction of nearly 10% is now expected, or 5.5% if exports of ships and aircraft are excluded. As in August, marine products exports are projected to contract by 8% year-on-year, while aluminium exports are forecast to contract more than was assumed in

August. The outlook for 2021 has deteriorated as well, mostly because the Marine Research Institute measurements indicated that the capelin stock was too small to issue an initial quota. The Bank's forecast therefore assumes that marine product exports will increase by 2.5% in 2021, less than half the increase projected in August. However, marine exports are expected to grow more strongly in 2022 and, coupled with increased exports of pharmaceuticals and farmed fish, are projected to contribute to robust growth in goods exports for that year.

### Surging COVID-19 case numbers have exacerbated uncertainty about tourism, and the outlook for 2021 has worsened

Developments in tourism in H2 are set to be less favourable than was assumed in August. Domestic airlines scaled down their operations more rapidly and foreign tourists' payment card turnover declined more steeply when infection rates started to rise in Iceland and trading partner countries (Charts 1 and 2 in Appendix 1). The outlook for tourism is highly uncertain and depends in part on when intercontinental travel restrictions are lifted, particularly on travel between Europe and North America. Before the pandemic struck, about a fifth of all tourists who visited Iceland came from the US. Travel is not projected to resume in earnest until Q2/2021, when tourism is expected to start recovering as the pandemic subsides and international travel restrictions are eased. Just over 750,000 tourists are projected to visit Iceland next year, well below the August forecast of over 1 million. It is assumed that capacity in the tourism sector will be largely preserved and that the recovery could be a swift one when overseas travel resumes. Tourist numbers in 2022 are projected at about 1.5 million. Services exports are forecast to increase by a fourth in 2021, after contracting by half this year. For 2022, growth is expected to be even stronger, or 45%.

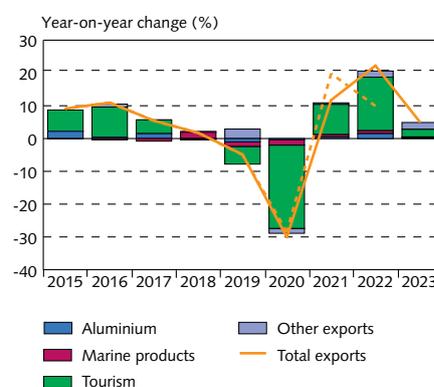
### 2020 set to see record contraction in exports

Goods and services exports are expected to contract by 30% this year, which would be 2 percentage points more than was forecast in August and the largest decline in exports in the history of Icelandic national accounts data (Chart III-12). With a weaker recovery in the tourism sector, exports of goods and services are now expected to grow by 12% in 2021 instead of nearly 20%, as was forecast in August. The growth rate in 2022 should be considerably stronger, however. If the forecast materialises, the combined volume of goods and services exports will return to the 2019 level by the end of the forecast horizon in 2023. Services exports will still be slightly below the 2019 level, however.

### Imports to contract strongly this year and recover more slowly in 2021

Goods and services imports contracted by nearly 35% year-on-year in Q2/2020, with goods imports down 25.7% and services imports by more than half. Icelanders' spending while travelling abroad plunged 85%, and the contraction in goods imports by one-fourth stemmed largely from categories such as fuel and transport equipment. The decline in imports of consumer products and investment goods was

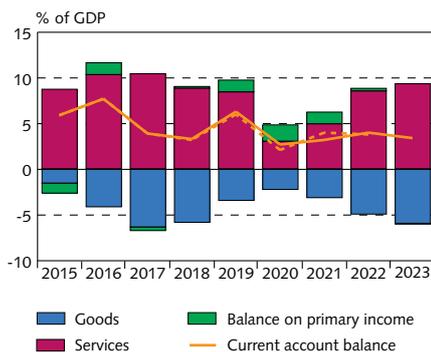
Chart III-12  
Exports and contribution of subcomponents  
2015-2023<sup>1</sup>



1. Because of chain-volume linking, the sum of components may not equal total exports. Aluminium exports as defined in the national accounts. Tourism is the sum of "travel" and "passenger transport by air". Central Bank baseline forecast 2020-2023. Broken line shows forecast from MB 2020/3.

Sources: Statistics Iceland, Central Bank of Iceland.

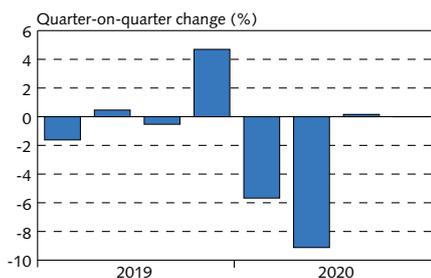
Chart III-13  
Current account balance 2015-2023<sup>1</sup>



1. Balance on secondary income included in the balance on primary income. Central Bank baseline forecast 2020-2023. Broken line shows forecast from MB 2020/3.

Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-14  
Quarterly GDP growth<sup>1</sup>  
Q1/2019 - Q4/2020



1. Seasonally adjusted data. Central Bank baseline forecast for Q3 and Q4/2020.

Sources: Statistics Iceland, Central Bank of Iceland.

smaller, at around 10%. The contraction appears to have eased in Q3, owing mainly to an uptick in household purchases of imported consumer goods during the summer. Combined goods and services imports are projected to shrink by nearly one-fourth this year, which is broadly consistent with the August forecast. Year-2021 imports are expected to be weaker than previously forecast, however. A key factor in this is the expectation that the pandemic will subside more slowly than was projected in August, cutting into overseas travel and imported goods purchases.

### Current account shows a surplus in H1 despite a record contraction in exports ...

The current account balance was positive by 1.7% of GDP in H1/2020. This is a smaller surplus than in H1/2019 but roughly equal to or larger than in the two years beforehand. The composition of the surplus has changed, however. For the first time since 2008, the balance on goods and services trade was negative. The services account surplus shrank markedly, although it was partially offset by a smaller goods account deficit. On the other hand, the balance on primary income showed the largest half-year surplus on record, owing to historically low domestic interest rates, favourable terms on foreign loans, and Iceland's positive external position.

### ... and the surplus looks set to hold throughout the forecast horizon

The trade balance is expected to return to positive territory in H2, resulting in a surplus of nearly 1% of GDP for 2020 as a whole. This is a significantly smaller surplus than was forecast in August, owing to the bleaker outlook for export growth and the prospect of less favourable terms of trade. Pulling in the other direction is the larger surplus on primary income in H1, which stems in part from record returns on foreign direct investment. The current account surplus for 2020 will therefore be larger this year than was forecast in August, at about 2½% of GDP (Chart III-13).

The surplus is projected to increase somewhat in 2021, although it will be smaller than previously projected, or 3% of GDP instead of the nearly 4% forecast in August. This is due primarily to the prospect of more sluggish growth in tourism in 2021 and a weaker improvement in terms of trade. If the forecast materialises, the current account surplus will widen again in 2022, as tourism gains steam. It is projected to measure nearly 4% of GDP, as was forecast in August.

## GDP growth

### H1 contraction smaller than was forecast in August

Negative export shocks had already caused economic activity to falter at the beginning of this year (see Box 4). This was compounded by base effects from last year's intellectual property exports, much of which showed in Statistics Iceland figures for Q4/2019, significantly boosting GDP for the period and contributing to a 5.7% quarter-on-quarter contraction in GDP in Q1/2020 (Chart III-14). Furthermore, the effects of the COVID-19 pandemic, which could already be felt by

the end of Q1, came fully to the fore in Q2, when GDP contracted by 9.1% quarter-on-quarter, similar to the contraction in Q1/2009.

GDP shrank year-on-year by 9.3% in Q2/2020, less than was forecast in August but still the largest Iceland has ever recorded in a single quarter. Domestic demand contracted by over 7% year-on-year, with net trade shaving an additional 2.2 percentage points from output growth. On the whole, the contribution from net trade was in line with the Bank's forecast, but as is discussed above, domestic demand contracted less than projected.

### GDP contracted more in Iceland than in the other Nordic countries in H1, but private consumption contracted less

GDP contracted by 5.7% in H1/2020, more than the average in the other Nordic countries and in the US, although less than in the eurozone and the UK (Chart III-15). Private consumption contracted less in Iceland than in the comparison countries, however. This reflects the magnitude of the export shock in Iceland (Chart III-11), but it also shows that Iceland managed to control the pandemic more effectively in the spring and summer and thereby avoid the harsh lockdown measures imposed widely in Europe (see Chapter I and Chart 1 in Appendix 1).

### Pandemic to have a stronger-than-expected impact in H2

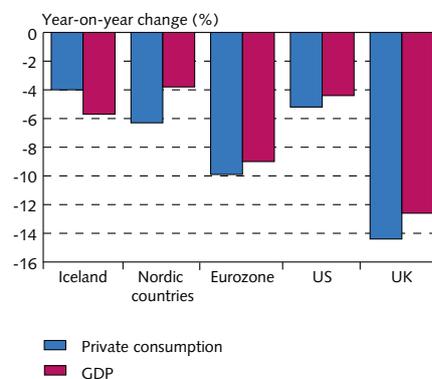
The contraction in H1/2020 was smaller than was assumed in August, but the outlook for H2 has worsened, not least because of the recent resurgence of the pandemic. Tightened public health restrictions have caused a reduction in various business activities in Iceland, and the impact on tourism is stronger than previously anticipated. As a result, GDP is projected to remain virtually flat in H2/2020 (Chart III-14), and the year-on-year contraction is expected to deepen to about 11% in H2.<sup>1</sup> This is a departure from the projection from August, when the year-on-year contraction was assumed to ease between Q3 and Q4. If this forecast materialises, the contraction for 2020 as a whole will measure 8.5%, which is 1.4 percentage points more than was projected in August but broadly in line with the forecast in the May *Monetary Bulletin*. The poorer outlook for exports weighs heaviest in this assessment, although it is compounded by the stronger contraction in business investment.

### The GDP growth outlook for 2021 has deteriorated as well

The slower decline in the pandemic and the poorer outlook for tourism also weigh heavily in the deterioration of the GDP growth outlook for 2021. GDP is not expected to grow year-on-year until H2/2021, a quarter later than in the August forecast. GDP growth for the year as a whole is projected at only 2.3%, some 1.1 percentage points less than previously forecast (Chart III-16). On the other hand, GDP growth is expected to be stronger in the latter half of the forecast horizon, when domestic demand and external trade will both make a positive contribution.

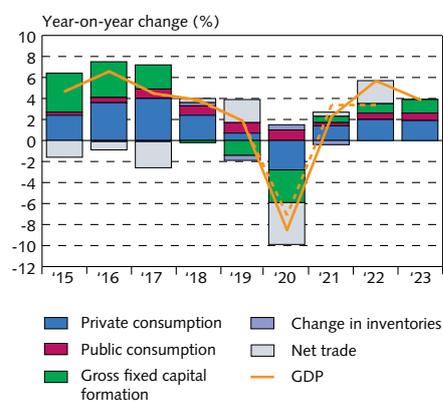
1. It should be noted that seasonally adjusted quarterly GDP data for Iceland often fluctuate widely; therefore, it can be difficult to separate out regular seasonal patterns. This is even more problematic in the current circumstances, when economic data are unusually volatile.

Chart III-15  
Comparison of private consumption and GDP in H1/2020<sup>1</sup>



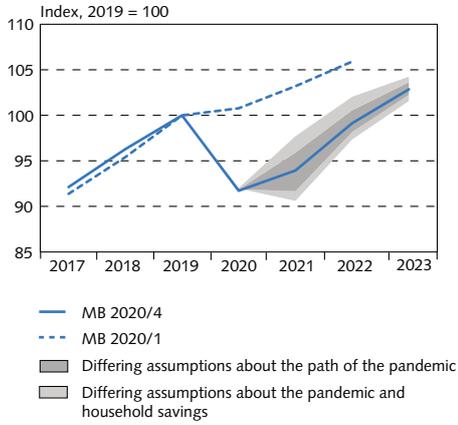
1. Figures for the Nordic countries are a simple average of Denmark, Finland, Norway, and Sweden. Norwegian GDP growth figures are for the Norwegian mainland economy.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-16  
GDP growth and contribution of underlying components 2015-2023<sup>1</sup>



1. Central Bank baseline forecast 2020-2023. Broken line shows forecast from MB 2020/3.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-17  
GDP 2017-2023<sup>1</sup>



1. GDP according to Central Bank baseline forecast 2020-2023 and different alternative scenarios in Box 1.

Sources: Statistics Iceland, Central Bank of Iceland.

tribution to growth. Output growth is forecast to measure 5.7% in 2022 and then ease to 3.9% in 2023.

### Restoring the pre-pandemic output level will be a lengthy process

If the forecast materialises, GDP will not return to its 2019 level until 2023, but nevertheless, it will remain nearly 6% below the pre-pandemic forecast from February 2020 (Chart III-17). The outlook is highly uncertain, though, and it is possible that the baseline forecast is overly optimistic. As is discussed in the alternative scenarios in Box 1, the economic recovery will be weaker if it proves more difficult to control the pandemic. The same is true if households are slower to tap the savings they have built up during the pandemic. In that case, GDP could contract further next year, which would put it more than 6% below the February 2020 forecast by 2023. By the same token, GDP growth could pick up more strongly than is assumed in the baseline forecast if efforts to control the pandemic bear fruit and households spend more of their savings. In that case, output growth could exceed 5% in 2021 and, by 2023, GDP could be about 4% below the February forecast.

## IV Labour market and factor utilisation

### Labour market

#### Job numbers declined year-on-year in Q3, but less than expected

According to the Statistics Iceland labour force survey (LFS), total hours worked declined by 3.7% year-on-year in Q3/2020, with the number of employed falling by 1.3% and average hours worked by 2.4%. The survey indicates, however, that total hours rose considerably between Q2 and Q3, after a steep decline between Q1 and Q2 (Chart 3 in Appendix 1). This recovery, which is much stronger than was assumed in the Bank's August forecast, is due entirely to job creation. Job numbers had been expected to fall, in line with indicators from both firms' recruitment plans and collective redundancies. According to the pay-as-you-earn (PAYE) register, job numbers also rose this summer, but much less than LFS figures suggest. The rebound was concentrated in the sectors servicing domestic demand that were particularly affected by the onerous public health measures imposed in H1, but also in real estate and in sectors that broadly consist of public services. However, no comparable uptick has been seen among foreign workers, whose numbers on the PAYE register have fallen by nearly 17% since February (Chart IV-1). Both the LFS and data from the PAYE register indicate that job numbers declined again in September, when economic activity started to slide once more (Chart IV-3).

#### Registered unemployment at a historical high

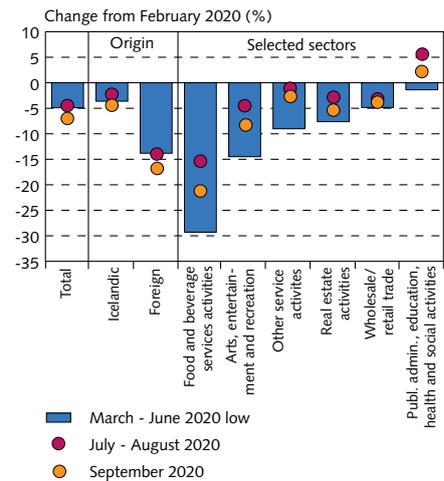
Seasonally adjusted LFS measurements indicate that labour participation rose markedly and that the employment rate rose as well in Q3, after a steep drop in Q2 (Chart 3 in Appendix 1). At the same time, the survey-based unemployment rate rose by 0.7 percentage points, to 5.8%. The seasonally adjusted registered unemployment rate excluding workers receiving part-time unemployment benefits has risen much more, however. It measured 10.1% in October, its highest since measurements were introduced in 1957 (Chart IV-2).

More than half of those on the unemployment register in October were from sectors relating to tourism and retail and wholesale trade. Imported workers and the regions of the country that rely on tourism have been hit hard: over a fifth of the foreign labour force and about the same share of workers living on the Suðurnes peninsula were unemployed during the month. The number of long-term unemployed – those who have been out of work for a year or longer – has risen as well, as economic activity was already slowing down after the recent boom by the time the pandemic struck.

#### Significant difference between LFS measurements and registry data

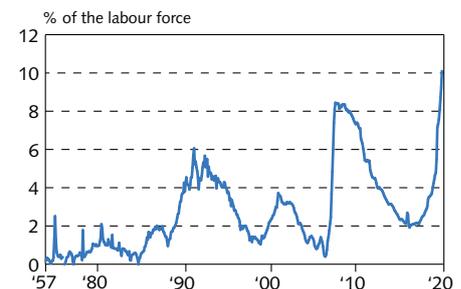
There has been a marked difference between LFS measurements and data from both employment and unemployment registers. In Q3, the LFS showed a much stronger rebound in job numbers this summer, and the LFS unemployment rate was nearly 3 percentage points lower than registered unemployment excluding part-time unemployment

Chart IV-1  
Wage earners on PAYE register, by origin and in selected sectors<sup>1</sup>



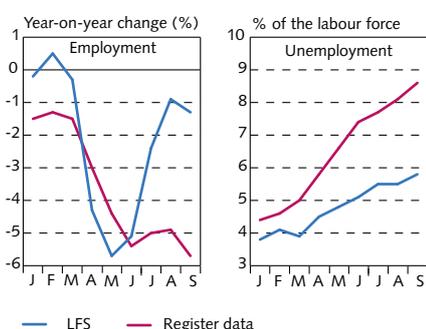
1. Seasonally adjusted figures.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-2  
Registered unemployment 1957-2020<sup>1</sup>



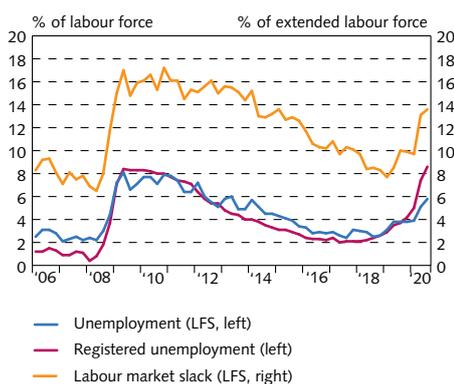
1. Annual figures for 1957-2020, and monthly figures for the period January 1980 - October 2020. Excluding persons on the partial unemployment benefit programme from March 2020 onwards. Monthly figures seasonally adjusted by the Central Bank.  
Sources: Directorate of Labour, Statistics Iceland, Central Bank of Iceland.

Chart IV-3  
Employment and unemployment<sup>1</sup>  
January - September 2020



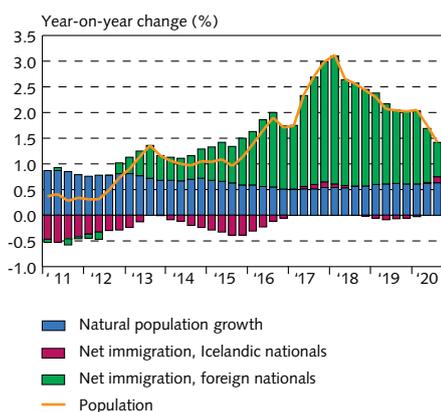
1. LFS stands for Statistics Iceland's labour force survey. Register data refer to the PAYE register for employment and Directorate of Labour unemployment register for unemployment. Unemployment is seasonally adjusted. Registered unemployment is seasonally adjusted by the Central Bank. Three month moving averages.  
Sources: Directorate of Labour, Statistics Iceland, Central Bank of Iceland.

Chart IV-4  
Unemployment and labour market slack<sup>1</sup>  
Q1/2006 - Q3/2020



1. The labour market slack is the sum of unemployed persons, underemployed part-time workers, and the potential addition to the labour market (persons seeking work but not immediately available and persons available but not seeking work), expressed as percentage of the extended labour force (labour force plus the potential addition to the labour market). Registered unemployment excludes persons receiving part-time unemployment benefits from Q1/2020 onwards and is seasonally adjusted by the Central Bank. Seasonally adjusted figures.  
Sources: Directorate of Labour, Statistics Iceland, Central Bank of Iceland.

Chart IV-5  
Population  
Q1/2011 - Q3/2020



Source: Statistics Iceland.

benefit recipients (Chart IV-3). As a result, Statistics Iceland looked more closely at the responses of unemployment benefit recipients who participated in the LFS in September. That examination showed that slightly over half of those receiving benefits were classified as unemployed according to the survey, one-fourth were classified as employed, and nearly one-fifth were outside the labour market. The large share classified as employed came as a surprise, but it was expected that some of the respondents would be classified as outside the labour market, as the pandemic could affect people's ability and/or willingness to look for jobs and begin work.<sup>1</sup>

In order to gain a more complete understanding of how a slack in the labour market can show up in the LFS data, it is possible to include those on the periphery of the job market with those classified as unemployed; in other words, to include both the underemployed and those considered a potential addition to the labour market.<sup>2</sup> Nevertheless, in Q3, both unemployment and this LFS measure of the slack in the labour market were still considerably below their post-financial crisis peak a decade ago, whereas registered unemployment was higher in Q3 than in the post-crisis period (Chart IV-4). Statistics Iceland's study also revealed that the response ratio among those on the Directorate of Labour's unemployment register was 13.5 percentage points lower than among other respondent groups. This might be related to foreign workers, for it has proven difficult to capture the foreign labour force in the LFS, as is discussed in *Monetary Bulletin 2017/2*. It is therefore considered likely that the survey-based unemployment rate is underestimated due to a non-response error.

**Foreign labour force growth has slowed in the wake of the pandemic**  
Year-on-year population growth measured 1.4% in Q3, including 0.7 percentage points due to immigration of foreign nationals (Chart IV-5). Although growth in the foreign labour force has slowed in the past two years, it has slowed even more sharply since the pandemic struck. Net migration was positive in Q3 but negative in the quarter beforehand. There is some uncertainty about migration in the coming term, but in view of the slack in the domestic economy and the weak employment situation among foreign nationals, net migration could temporarily turn negative.

**Lower unemployment forecast for this year, but the employment outlook is still bleak**

It appears that demand for labour was stronger this summer than was assumed in the Bank's August forecast. Furthermore, the revision of the forecast for this year is also affected by LFS figures, which show a stronger labour market recovery in Q3 than can be considered plausible. On the other hand, the outlook for next year has deteriorated,

1. In order to be considered unemployed, a person must be looking for a job and ready to begin work within two weeks. Otherwise, the respondent is classified as outside the labour market.
2. Underemployed workers are those with part-time jobs who would like to work more. The potential addition to the labour market comprises two groups outside the market: job-seekers who are not ready to begin work and non-job-seekers who are ready to begin work.

and it appears that job numbers fell again at the beginning of this autumn. In addition, about a third of executives are still planning to reduce staffing levels in the coming term, and only a tenth are interested in recruiting, according to Gallup's autumn survey among Iceland's 400 largest firms. Total hours worked are projected to decline in 2020 by almost 6% year-on-year, which would be the largest drop in a single year since 2009. Job losses are forecast at just over 3%, but if the forecast is extrapolated to the number of jobs according to PAYE data, the decline could be nearly twice that size.

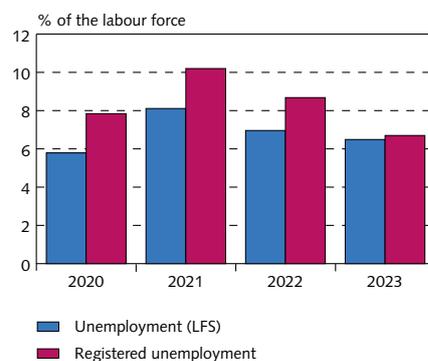
The baseline forecast assumes that unemployment will rise somewhat in Q4 and will average roughly 6% this year, according to the LFS. It will not peak, however, until H1/2021, when seasonally adjusted unemployment is projected to overtake the post-crisis peak. It will then start to fall in H2 and continue declining throughout the forecast horizon. Registered unemployment will be considerably higher during the year, however, averaging 7.9% this year and close to 10% in 2021 (Chart IV-6). The difference between the two measures of unemployment will then gradually narrow as the forecast horizon progresses. Due to a more favourable outcome this summer and measurement problems with the LFS, unemployment will be somewhat lower this year than was forecast in August (Chart IV-7). It looks set to be broadly in line with the August forecast in 2021, however, although it is now expected to fall more slowly in the latter half of the forecast than was previously projected.

### Indicators of factor utilisation

#### Outlook for a sizeable output slack, peaking in late 2020

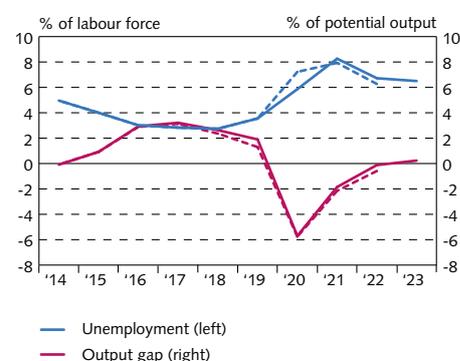
In Gallup's autumn survey, fewer executives responded that their firms would have difficulty responding to an unexpected increase in demand, and the share who considered their firms understaffed was close to its historical low. The resource utilisation (RU) indicator declined in Q3, for the fourth quarter in a row, and was roughly back to the level seen in the aftermath of the financial crisis (Chart 3 in Appendix 1). The outlook is for population growth to slow significantly in the coming term, owing to reduced inward migration by foreign nationals and for productivity growth to be historically low during the forecast horizon (see Box 1). Furthermore, equilibrium unemployment is expected to rise this year and next, as unemployment drags on. As a result, growth in potential output will ease in the first half of the period, but demand will contract more, and a sizeable slack will develop in the economy. The slack in output is projected at almost 6% of potential output this year (Chart IV-7). It will gradually narrow from early 2021 onwards but is not expected to close until H2/2022. This assessment is highly uncertain, however (for further information, see Box 1). The most important uncertainties lie in the path of the pandemic itself and the development of medical treatment or a vaccine. Another important factor is the strength and persistence of the pandemic's impact on Iceland's potential output.

Chart IV-6  
Unemployment 2020-2023<sup>1</sup>



1. Registered unemployment excludes persons receiving part-time unemployment benefits. Central Bank baseline forecast. Source: Central Bank of Iceland.

Chart IV-7  
Unemployment and output gap 2014-2023<sup>1</sup>



1. Central Bank baseline forecast 2020-2023. Broken lines show forecast from MB 2020/3. Sources: Statistics Iceland, Central Bank of Iceland.



# V Inflation

## Recent developments in inflation

### Inflation has risen in the recent term

Inflation measured 3.2% in Q3, slightly above the August forecast of 3%. In October it measured 3.6% and has therefore risen steeply since June, when it was close to the inflation target (Chart V-1). Inflation excluding housing was somewhat higher, at 4.1%. HICP inflation, however, was only 1.4% in September. The HICP also excludes owner-occupied housing costs, but low HICP inflation mainly reflects the fact that subcomponents capturing tourists' spending while in Iceland carry a proportionally heavier weight in the HICP than in the Icelandic CPI excluding housing. Because of the COVID-19 pandemic, the price of various services items such as airfares and accommodation has fallen year-on-year, and this weighs more heavily in the HICP.<sup>1</sup>

Underlying inflation in terms of the average of various measures was 4.1% in October, an increase of 0.4 percentage points since the last *Monetary Bulletin* (Chart V-2). This could indicate that underlying inflationary pressures are still growing. House prices have also risen recently, in response to interest rate cuts (see Chapter II). The contribution of the housing component of the CPI to twelve-month inflation measured 0.5 percentage points in October, similar to that in July, but the drop in real mortgage interest expense has partly offset the rise in house prices.<sup>2</sup>

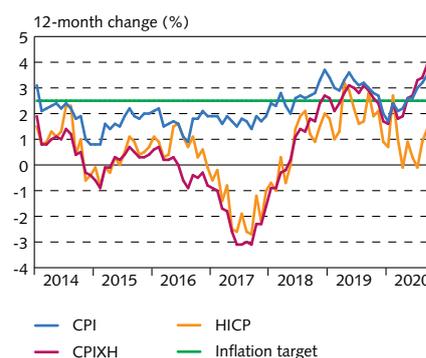
## Indicators of inflationary pressures

### Depreciation of the króna has pushed inflation upwards

The króna has depreciated by 12% since the pandemic reached Iceland in late February (see Chapter II). All key subcomponents of imported goods have risen in price since then, apart from petrol, as global oil prices fell steeply in H1/2020 (Chart V-3). Price hikes on various imported goods such as furniture, housewares, and electronic equipment have weighed heaviest in the recent rise in the CPI. In fact, this subcomponent of the index has risen by 10% in the past twelve months. Domestic goods prices have risen as well, by 5.7% year-on-year in October, led by food prices and imported input prices.

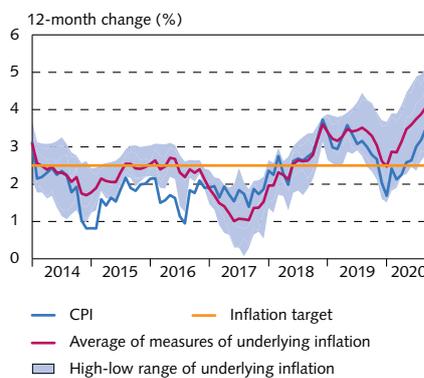
As is discussed in Box 2, demand for various goods increased after public health measures were relaxed in the spring, which probably pushed prices upwards. Given that spending on travel, recreation, and cultural activities has been limited, individuals have to some extent shifted their consumption spending to other categories instead. This probably caused the CPI to underestimate inflation slightly in the recent term.

Chart V-1  
Various measures of inflation  
January 2014 - October 2020



Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-2  
Headline and underlying inflation<sup>1</sup>  
January 2014 - October 2020

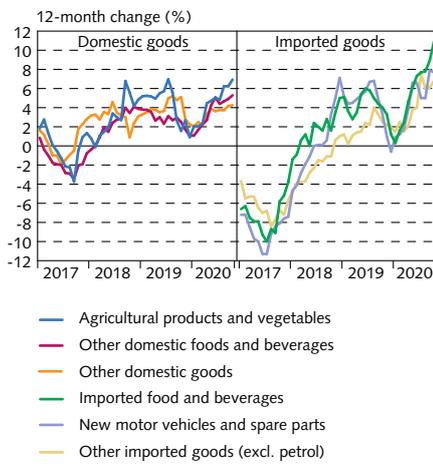


1. Underlying inflation measured using a core index (which excludes the effects of indirect taxes, volatile food items, petrol, public services, and real mortgage interest expense) and statistical measures (weighted median, trimmed mean, a dynamic factor model, and a common component of the CPI).

Sources: Statistics Iceland, Central Bank of Iceland.

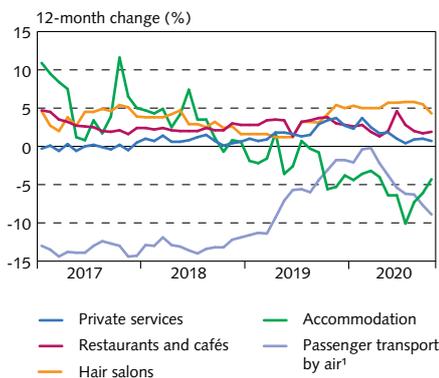
1. The composition of the HICP reflects consumption by everyone in Iceland, including tourists, while the CPI includes only Icelanders' domestic consumption spending. As a result, subcomponents such as airfares, accommodation, and restaurant services weigh heavier in the HICP than in the CPI.
2. Some measures of underlying inflation exclude the impact of lower real mortgage interest expense, but it is estimated that measured inflation was about 0.8 percentage points lower as a result.

Chart V-3  
Domestic and imported goods prices  
January 2017 - October 2020



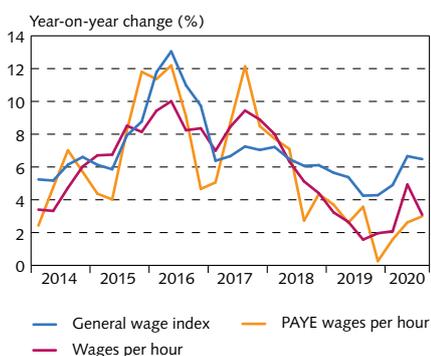
Source: Statistics Iceland.

Chart V-4  
Private services and selected subcomponents of the CPI  
January 2017 - October 2020



1. Twelve-month moving average.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-5  
Wages<sup>1</sup>  
Q1/2014 - Q3/2020



1. Wages per hour worked are based on annual figures for the wage portion of the "wages and related expenses" category from the production accounts, as a share of total hours worked according to the Statistics Iceland labour force survey, and are estimated for the year 2020. PAYE wages per hour are PAYE wages per total working hours from the LFS, with Q3/2020 based on July and August averages.

Sources: Statistics Iceland, Central Bank of Iceland.

Changed consumption patterns can also be seen in reduced spending on various types of services that are either unavailable because of public health measures or less in demand because consumers fear contagion. As a result, various private services prices have remained unchanged or fallen between years, as has previously been discussed. Overall, private services prices rose by only 0.7% year-on-year in October (Chart V-4).

### Wage agreements hold, reducing uncertainty about medium-term wage developments

The general wage index rose in line with expectations in Q3, or by 0.5% between quarters and 6.5% year-on-year (Chart V-5). PAYE wages per hour rose less, however, or by 3% year-on-year, and have risen less in 2020 than was assumed in the Bank's August forecast. The outlook for wage developments in 2020 as a whole is broadly unchanged, however: wages per hour are expected to rise by an average of just under 3% this year and 3½% in 2021.

Uncertainty about medium-term wage developments eased when, after meeting with the Government early this autumn, the Confederation of Icelandic Employers abandoned plans to vote on terminating private sector wage agreements. At the same time, the Government announced new measures to support businesses, including a temporary 0.25 percentage point payroll tax reduction for 2021. Although the Government measures soften the blow firms would otherwise have sustained, it is clear that the negotiated wage rises taking effect at the beginning of 2021 will be challenging for many of them.

### Inflation expectations

#### Long-term inflation expectations still close to target by most measures

According to recent surveys, households expect inflation to measure 4% in one year's time and businesses project it at 3%, while market agents assume that it will be at target (Chart V-6). Households therefore expect inflation to be higher a year from now than they indicated in the previous survey, whereas firms' and market agents' expectations have remained unchanged.

Long-term inflation expectations have been broadly unchanged in the recent term despite the depreciation of the króna. Among households, businesses, and market agents, they are unchanged from previous surveys and are at target, or close to it, by most measures. It is noteworthy that according to surveys, inflation expectations two or more years ahead are broadly the same as they were a year ago, or even lower. The five- and ten-year breakeven inflation rate in the bond market has averaged 2.6-2.7% in Q4 to date and is therefore also close to target, but somewhat higher than a year ago.<sup>3</sup>

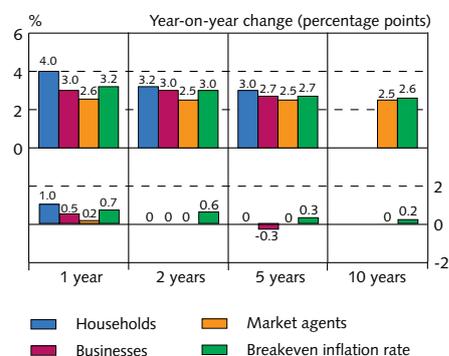
3. It should be noted that a part of recent fluctuation in the breakeven rate is due to technical factors relating to the calculation of indexed Treasury bond yields, as the bond maturing in 2021 was removed from market making. As a result, they are not solely due to changes in inflation expectations. Furthermore, the breakeven rate also includes an inflation risk premium and a liquidity risk premium.

## Inflation higher over the forecast horizon than was projected in August

Q3 inflation was somewhat above the August forecast, owing to stronger exchange rate pass-through to imported goods prices and a smaller-than-expected slack in the economy. In addition, global commodity and food prices have risen in the recent term. As a result, the short-term inflation outlook has deteriorated, mainly due to a poorer initial position. Inflation is forecast to measure 3.7% in both Q4/2020 and Q1/2021, about 0.8 percentage points above the August forecast. Nevertheless, it is still assumed that once the effects of the currency depreciation have tapered off, the slack that has opened up in the economy will cause inflation to ease over the course of next year and align with the target in H2/2021. Owing to a continuing economic slack and low global inflation, domestic inflation will decline even further, falling slightly below the target in the latter half of the forecast horizon. It will not fall as much as was assumed in the August forecast, however, mainly because relative import prices are expected to rise more in 2020 and 2021 than was projected in August. The outlook is also for a somewhat smaller slack in output than was assumed in August, as potential output has been revised downwards (see Chapter IV).

As is discussed in Box 1, the outlook for both the short and long term is highly uncertain. Short-term uncertainty centres mainly on the exchange rate and its effects on inflation, as well as the impact of the pandemic on output and consumption patterns. In the long term, the inflation outlook depends as much on the timing and strength of the economic recovery as it does on the long-term impact of the pandemic on potential output. The risk profile is considered to be similar to that in the Bank's most recent forecasts, and near-term inflation is more likely to be underestimated in the baseline forecast than overestimated. There is a roughly 50% probability that inflation will be within the 1¼-3½% range in one year and within a similar range by the end of the forecast horizon (Chart V-7).

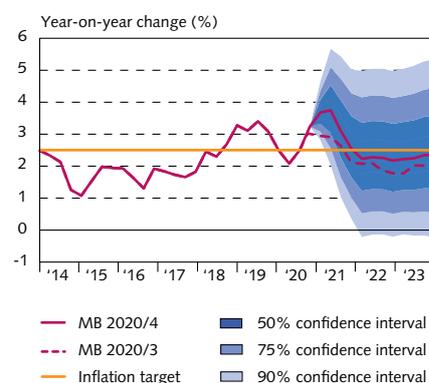
Chart V-6  
Inflation expectations<sup>1</sup>



1. The most recent Gallup surveys of corporate and household inflation expectations were carried out in September 2020. The most recent Central Bank survey of market agents' expectations is from the beginning of November 2020. Households and businesses are not asked about ten-year inflation expectations. The most recent value for breakeven inflation is the average in Q4/2020 to date. The lower part of the chart shows the year-on-year change.

Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-7  
Inflation forecast and confidence intervals  
Q1/2014 - Q4/2023



Sources: Statistics Iceland, Central Bank of Iceland.

## Alternative scenarios and uncertainties

### Box 1

The economic outlook is highly uncertain at present, perhaps more than usual. A major contributor to the uncertainty is the fact that domestic and international economic developments will depend in large part on how successful efforts to control the COVID-19 pandemic prove to be, yet it is difficult to foresee how broad public health measures will have to be and how long they must remain in place. But there are other uncertainties at play as well. This Box discusses several of them and presents alternative scenarios based on differing assumptions about the progress made in the battle against the pandemic and the extent to which households tap the savings they accumulated after the pandemic struck.

#### Alternative scenarios: Different assumptions about the path of the pandemic

##### **Alternative scenario assuming that the pandemic proves more intractable**

The Bank's baseline forecast assumes that a COVID-19 vaccine will be developed early in 2021 and that widespread inoculation will have taken place by mid-year, after which daily life will gradually normalise. But the battle with the pandemic could prove more difficult. If so, governments' public health measures – closures and bans on public gatherings – will need to be stricter and remain in place longer than in the baseline forecast. This alternative scenario also assumes that the public will be more pessimistic about the economic outlook and more concerned their own health, which will prompt them to stay at home and spend less. As a result, domestic demand will weaken more and will take longer to recover. Increased overall uncertainty will also make firms less likely to hire workers and spend on investment. This scenario assumes as well that credit spreads on firms' domestic financing will rise even further and taper off later than in the baseline forecast.

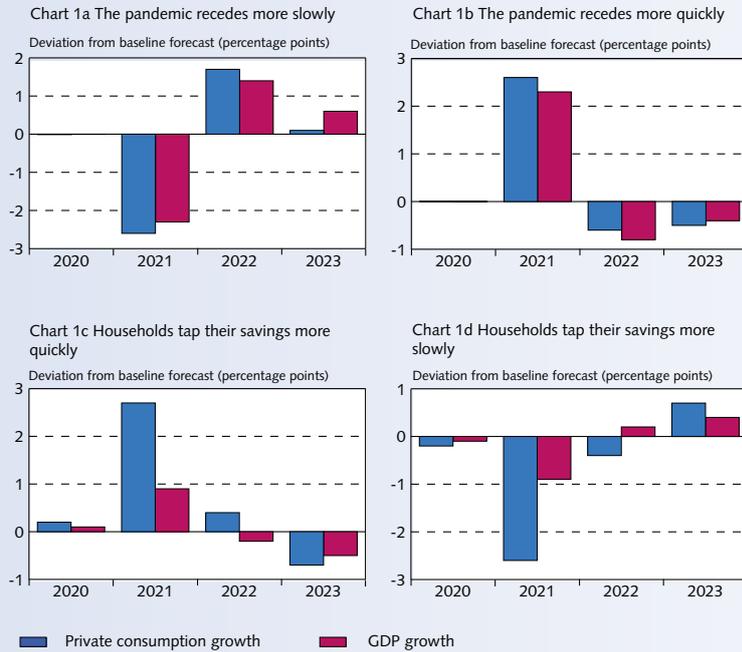
Reduced global demand and more stringent public health restrictions at national borders will erode the outlook for Iceland's goods and services exports relative to the baseline forecast.<sup>1</sup> According to this alternative scenario, there will be virtually no year-on-year increase in tourist arrivals in 2021, and tourist numbers will be lower than in the baseline throughout the forecast horizon. Services exports will therefore grow by only 9% in 2021, some 17 percentage points less than in the baseline scenario. The outlook for goods exports is poorer as well, owing in particular to a bleaker outlook for marine product exports, which in turn stems from reduced global demand and increased difficulties with product distribution in international markets. Goods and services exports will therefore rise by 5% in 2021 instead of the nearly 12% provided for in the baseline forecast.

The poorer outlook for exports amplifies still further the adverse effects of the pandemic on domestic incomes and demand. This is compounded by the pandemic's adverse impact on potential output: corporate insolvencies will rise, more people will exit the job market, and increased unemployment will cause the equilibrium unemployment rate to rise higher and taper off more slowly. Furthermore, the pandemic and the associated disruptions to domestic production will temporarily lower productivity growth.

Although domestic macroeconomic policy actions pull in the opposite direction, the alternative scenario assumes that the eco-

1. The alternative scenarios use the International Monetary Fund's recent assessment of the impact of various levels of success against the pandemic on the global economy. See *World Economic Outlook*, Chapter 1, October 2020.

Chart 1  
Alternative scenarios



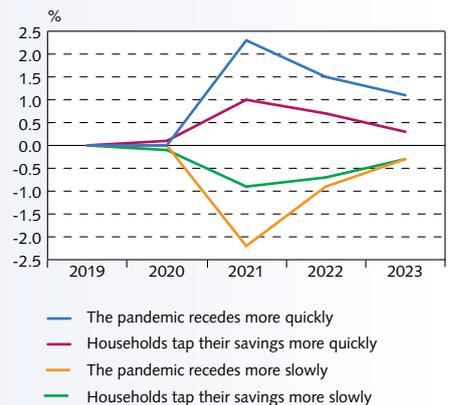
Source: Central Bank of Iceland.

conomic outlook will deteriorate relative to the baseline.<sup>2</sup> The outlook for the remainder of 2020 is broadly unchanged, as the year-end is approaching. The outlook for 2021 changes significantly, however: consumption growth slows by 2.6 percentage points and output growth by 2.3 percentage points (Chart 1a). Instead of 2.3% GDP growth next year, output remains broadly flat in this alternative scenario. However, output growth is higher in the alternative scenario starting in 2022, when the pandemic is finally brought under control. In spite of this, GDP will be slightly below the level assumed in the baseline by the end of the forecast horizon, in 2023 (Chart 2). According to the alternative scenario, inflation will fall more in 2021, owing to a larger slack in the economy, although this will be offset by a lower exchange rate and weaker growth in potential output.

### Alternative scenario assuming greater success in controlling the pandemic

This alternative scenario assumes that efforts to control the pandemic will bear fruit sooner and that domestic and international transportation and trade will re-open earlier. It is assumed that widespread inoculation will be achieved early in 2021 and that public health measures can be eased relatively quickly. Reduced fear of the disease increases the public's desire to avail themselves of services that have suffered during the peak of the pandemic. Demand for services will therefore recover more rapidly than in the baseline forecast. Greater optimism among households and businesses fuels their willingness to spend, thereby supporting overall demand in the economy. A more rapid turnaround also means that supply-side disruptions and long-term damage to the domestic economy will

Chart 2  
Alternative scenarios of developments in GDP<sup>1</sup>



1. GDP according to different alternative scenarios (deviation from the Bank's baseline forecast).  
Source: Central Bank of Iceland.

2. It is assumed that monetary policy will respond with lower interest rates than in the baseline, in line with the monetary policy rule in the Bank's macroeconomic model, and that automatic fiscal stabilisers will be allowed to work unimpeded. The macroeconomic policy stance is correspondingly tighter in the more optimistic alternative scenario.

be less pronounced. Global economic activity also recovers more quickly, and just over 1 million tourists are assumed to visit Iceland in 2021, a full 40% more than in the baseline forecast. Iceland's services exports will therefore rise by 45% in 2021 instead of the 27% provided for in the baseline. The outlook for goods exports improves as well, and combined goods and services exports increase by an additional 7 percentage points in 2021.

As a result, the economic outlook according to this alternative scenario improves markedly in comparison with the baseline forecast. Private consumption grows by 5.3% in 2021, or 2.6 percentage points more than in the baseline, and year-2021 GDP growth is 2.3 percentage points stronger (Chart 1b). GDP growth for 2022-2023 is somewhat weaker than in the baseline, however, but year-2023 GDP will be 1% higher (Chart 2). A stronger turnaround in exports and a tighter monetary stance support the exchange rate of the króna, which is somewhat higher in the alternative scenario than in the baseline. Inflation falls more slowly in 2021, however, as the slack in the economy closes more quickly.

### Alternative scenarios: Different assumptions about households' saving patterns

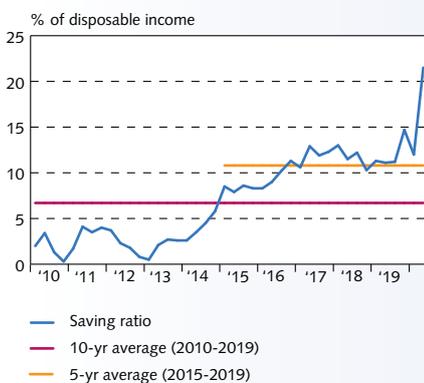
The pandemic and the Government's response measures have made a strong impact on households' spending patterns, as is discussed in Box 2. Households have been cautious about spending because of the economic contraction and increased uncertainty about the economy and the employment situation. Furthermore, because of public health measures imposed by the Government, households have had reduced access to various services that they would have purchased otherwise, and many people have significantly scaled down both travel and goods and services purchases in an attempt to reduce the risk of contagion. Households' consumption spending has therefore contracted markedly. In fact, despite the worsening employment situation, consumption has declined much more than household income has, owing in part to various Government measures to protect jobs and personal income.

This implies that households have stepped up their saving markedly in the recent past, after having already increased it as a result of lessons learned from the financial crisis. In Q2/2020, the saving ratio rose still further, to twice its five-year average (Chart 3). Although the Bank's baseline forecast assumes that the ratio declined again in Q3, the forecast assumes that households will be relatively cautious and that the saving ratio will not fall to its historical average until mid-2021. Changes in households' saving patterns could have a significant impact on the economic outlook, even if the assumptions about developments in the pandemic are borne out.

#### Households could choose to tap their savings more rapidly ...

Households could choose to tap more quickly into these "forced" savings that they have amassed since the pandemic struck. It is also possible that pent-up demand for various consumer durables and semi-durables has accumulated, particularly among higher-income households, which could cause consumption spending to increase faster through 2021 than is assumed in the baseline forecast. This is supported by the fact that many households' financial and asset position was strong before the pandemic struck: household debt has fallen markedly and is low in a historical context, and net household wealth is at an all-time high.

Chart 3  
Household savings<sup>1</sup>  
Q1/2010 - Q2/2020



1. There is some uncertainty about Statistics Iceland's figures on households' actual income levels, as disposable income accounts are not based on consolidated income accounts and balance sheets. The saving ratio is calculated based on the Central Bank's disposable income estimates, as Statistics Iceland figures are increased to reflect households' estimated expenses over a long period. Seasonally adjusted figures.  
Sources: Statistics Iceland, Central Bank of Iceland.

### ... but they could also opt for greater caution in their spending decisions

Households could also choose to spend more cautiously than is assumed in the baseline forecast. People may opt to continue social distancing for a longer period even if developments in the pandemic are in line with the baseline forecast; furthermore, uncertainty about the economic and employment situation could prompt households to build up even more precautionary savings. Moreover, households' strong aggregate income and asset position could be misleading, as the pandemic has had a lesser impact on higher-income households, which generally have a lower marginal propensity to consume than lower-income households.

### Alternative scenarios assuming differing household saving patterns

The first alternative scenario assumes that the saving ratio will be about 2 percentage points below the level in the baseline forecast over the forecast horizon, and that the two will gradually converge thereafter. Private consumption will then increase considerably more quickly, job growth will be more rapid, and unemployment will not rise as high (Chart 1c). As a result, inflation will rise faster, albeit offset by a higher exchange rate and higher Central Bank interest rates. Year-2021 GDP growth will measure over 3%, or about 1 percentage point more than in the baseline forecast, and while it will be somewhat weaker in the latter half of the forecast horizon, GDP will be higher by the end of the period (Chart 2).

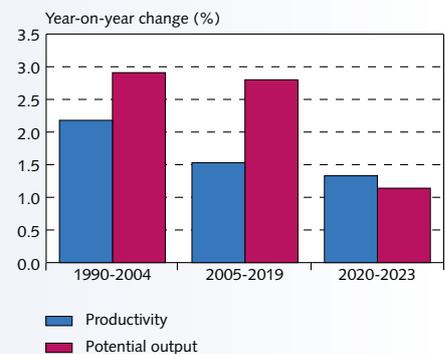
The second alternative scenario is similar, except that it assumes that the saving ratio remains, on average, 2 percentage points higher than in the baseline over the forecast horizon, and that the two will converge over time. This has a significant impact on household demand, particularly in 2021, when private consumption increases 2½ percentage points less than in the baseline (Chart 1d). The greater caution exhibited by households in their spending decisions will therefore delay the economic recovery, and year-2021 GDP growth will measure only 1.5%, or nearly 1 percentage point less than in the baseline forecast. The slack in the economy will therefore be larger, job numbers will decline further, and unemployment will be higher. On the other hand, Central Bank interest rates will remain low for a longer period, and although the króna will be weaker, inflation will be lower. Even though GDP growth in 2022-2023 will be slightly stronger, year-2023 GDP will still be 0.3% below the level assumed in the baseline forecast (Chart 2).

### Other uncertainties

#### The impact of the pandemic on potential output could be underestimated

The medium-term economic outlook is subject to a number of other risks. For instance, uncertainty lies not only in how long the pandemic persists and how it affects demand and GDP growth in 2020 and 2021, but also on its potential impact on the long-term GDP growth outlook. The outlook is for many companies to become insolvent and for surviving ones to scale down investments in fixed assets and knowledge, not least because they must increasingly invest in production processes that enhance employee safety and facilitate remote working. The economic crisis will also cause a costly resource reallocation across sectors, and there is the risk that the openness and flexibility of the economy will be reduced, at least temporarily. Furthermore, there is the risk that workers will exit the job market and that human capital will be lost as a result.

Chart 4  
Productivity and potential output<sup>1</sup>



1. Labour productivity measured as GDP per hour worked. Central Bank baseline forecast 2020-2023.

Sources: Statistics Iceland, Central Bank of Iceland.

All of these factors could have a dampening effect on productivity growth and on growth in potential output. As Chart 4 shows, the baseline forecast assumes that labour productivity and potential output will grow markedly slower over the forecast horizon than on average over the past thirty years. This assumption could easily prove overly optimistic if the pandemic drags on even longer or if the changes described above turn out more extensive than is assumed in the baseline forecast. The impact of the pandemic on output and employment could therefore easily be stronger and more lasting.

**The baseline forecast is based on the current fiscal policy measures**

The chief task of macroeconomic policy has been to mitigate the economic impact of the pandemic to the extent possible and support households and businesses through the most difficult period. Fiscal policy has played a key role in the battle with the pandemic. As the pandemic drags on, the challenge facing fiscal policy will be increasingly to mitigate the long-term damage to the extent possible, but without hindering the normal adjustment of the economy to a new reality once the pandemic is over. It is also important to ensure that the unavoidable increase in public debt does not give rise to unsustainable debt accumulation in the long run. At the same time, the support measures must not be unwound too quickly; otherwise, there is the risk that the economic recovery will stall. As a result of all this, the authorities are faced with an exceedingly complex and difficult set of challenges. The baseline forecast assumes significant fiscal stimulus in line with the Government's plans (for further discussion, see Chapter III and Box 3). But it is uncertain how successful those plans will be, and further changes in the scope of policy measures would inevitably change the medium-term economic outlook.

**The impact of increased uncertainty could be underestimated, and credit spreads could remain wider**

The pandemic has exacerbated overall uncertainty about both economic developments and many people's income and employment prospects. This increased uncertainty has also affected the financial markets and led to wider credit spreads on many financial instruments, thereby deepening the economic contraction even further. The baseline forecast assumes that credit spreads will gradually narrow as the pandemic tapers off. This may not materialise if it takes longer to control the pandemic (see the above discussion of alternative scenarios based on various pandemic-related assumptions), as the baseline forecast may also overestimate the pace at which uncertainty subsides and credit spreads narrow. If so, there is the risk that the economic outlook as portrayed in the baseline will prove overly optimistic.

**The baseline forecast assumes that international trade disputes will not resume**

In recent years, trade disputes have undermined world trade and damaged the global economy. The interim agreement reached in January in the dispute between the US and China is still in place, but friction between the two countries has escalated further, and it is not impossible that a full-scale trade dispute will break out once again, with severe global economic repercussions (for a discussion of the impact on the domestic economy, see Chapter I of *Monetary Bulletin* 2019/4). Furthermore, it is still uncertain whether the UK and the European Union (EU) will reach an agreement on the future relations between the two by the end of this year (for a discussion of the potential impact on the domestic economy, see Chapter I of *Monetary Bulletin* 2019/2).

**Uncertainty about the extent to which the adjustment of domestic spending will be directed at imports**

The baseline forecast assumes that the contraction in private sector demand will be concentrated to some extent on imported goods and services. Import penetration will therefore fall markedly this year, approaching the post-financial crisis low from just over a decade ago. From 2021 onwards, however, it will rise again as the economy turns around. These assumptions are subject to considerable uncertainty, however, and the experience of airline WOW Air's collapse in spring 2019 shows clearly that the composition of private sector spending responses strongly affects the ultimate impact of macroeconomic shocks on GDP growth (see Box 4).

**The inflation outlook is highly uncertain**

The baseline forecast assumes that inflation will remain above the inflation target well into 2021 and then begin to ease, owing to the sizeable slack that has developed in the economy. There is considerable uncertainty about this, however – not only about the outlook for the short term, but also later in the forecast horizon. The impact of the pandemic on the production and distribution of goods and services, and on consumers' ability to access them, creates an unusually high level of uncertainty about price developments over the next few months (see Box 2). Furthermore, near-term developments in the exchange rate of the króna are highly uncertain. Other things being equal, further depreciation would slow down the easing of inflation relative to the baseline forecast. Moreover, the inflationary impact of the depreciation that has already occurred could be underestimated in the baseline scenario, particularly if inflation expectations become deanchored.

On the other hand, if the pandemic persists longer than is assumed in the baseline forecast and the economic contraction proves to have been underestimated, inflation could fall faster and to a lower level than in the forecast. That said, the slack in the economy could be overestimated if the negative impact of the pandemic on potential output is underestimated. If that proves to be the case, underlying inflationary pressures could be greater than is assumed in the baseline. The inflation outlook is therefore unusually uncertain at present, and the near-term risk profile is adjudged to be tilted slightly to the upside.

## Box 2

## COVID-19, inflation, and household consumption patterns

The COVID-19 pandemic has spread all over the world and profoundly affected the global economy (see Chapter I). Global supply chains have been disrupted, and food and commodities markets have been thrown into disarray. This Box discusses the main effects of the pandemic on inflation and household consumption patterns in Iceland. Households have changed their consumption habits as a result of public health measures and personal disease prevention choices, and inflation has risen in the recent term, partly due to the depreciation of the króna and increased demand for various goods. Lower petrol prices and airfares have pulled in the opposite direction, however. This Box also includes a discussion of potential distortion of CPI measurements as a result of pandemic-related changes in household consumption patterns.

### The COVID-19 pandemic led to significant disturbances in global supply chains ...

The effects of the pandemic on the global economy began to show in January 2020, when a number of Chinese manufacturing firms were closed in an attempt to curb the spread of the disease. Because China is a major producer of various goods, commodities, and other inputs, the closures severely affected both global supply chains and the supply of a large number of goods worldwide. A shortage of inputs led to disruptions in production at many firms in the technology, motor vehicles, chemicals, and textile manufacturing industries, among others. The interruptions in China therefore had a multiplier effect on supply chains all over the world, an effect that escalated as the contagion spread internationally and firms scaled back operations in the hope of curbing the spread. Worldwide travel restrictions played a role also, disrupting cross-border transit of goods. Afterwards, product shortages developed in Iceland, particularly to include recreational goods and clothing.

### ... global oil prices fell ...

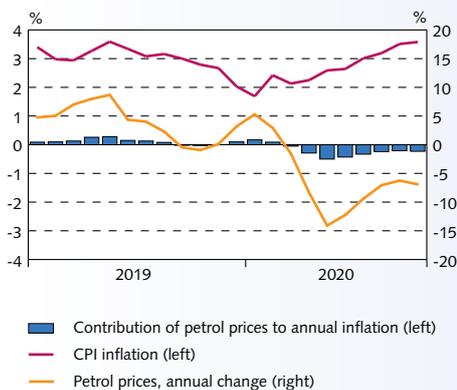
Global oil prices plunged early in 2020, with worldwide demand contracting markedly when governments began implementing measures aimed at curbing the spread of the pandemic. Motor vehicle traffic declined when public health measures took effect and bans on public gatherings were imposed, people were encouraged to work from home, and passenger travel by air virtually halted. Domestic petrol prices started to fall as early as February and, by May, were down more than 12% since the turn of the year. The decline pushed inflation downwards by as much as ½ a percentage point (Chart 1).

### ... but retail food and beverage prices rose

People in many countries began to stockpile necessities such as food and medicine, causing prices of these goods to rise (Chart 2). Despite a general decline in global commodities prices at the beginning of the pandemic, disruptions in production and declining capacity appear to have reduced supplies to the retail sector and pushed retail prices upwards.<sup>1</sup> For example, travel restrictions led to a shortage of migrant workers, who are important for agricultural production, resulting in smaller harvests in many parts of Europe. Reduced agricultural supplies then led to price hikes. The spikes in food prices have largely reversed in many areas, however.

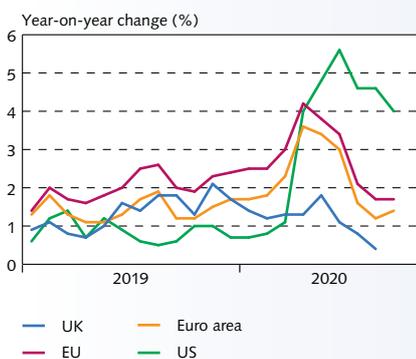
1. Global food and commodity indices do not contain exactly the same food categories as consumer price indices do, and different subcomponents carry differing weights. As a result, they could develop differently. See International Monetary Fund (*World Economic Outlook*, Chapter 1, October 2020).

Chart 1  
Contribution of petrol prices to inflation  
January 2019 - October 2020



Sources: Statistics Iceland, Central Bank of Iceland.

Chart 2  
Foreign inflation: Food and beverages  
January 2019 - September 2020



Source: Refinitiv Datastream.

### Depreciation of the króna has led to rising imported goods prices

The króna has depreciated since the pandemic reached Iceland in late February (see Chapter II). The depreciation passed rapidly to imported goods prices. By June, the króna had fallen by nearly 10% since the turn of the year. Over the same period, imported food and beverage prices had risen by over 7% and new motor vehicles and spare parts by 5.8%, while miscellaneous other imported goods (excluding petrol) rose by only 2.6%. Presumably, increased demand for certain categories of goods, such as food and beverages, caused the exchange rate pass-through effect to show sooner than it would have otherwise. On the other hand, public health measures and personal disease prevention efforts resulted in a delay in pass-through to clothing and household goods prices (see further discussion later in this Box). By October, the króna had depreciated by 14.8% since the turn of the year, and imported good and beverage prices were up 10.5%, new motor vehicles and spare parts by 8.5%, and other imported goods by 5.5% (Chart 3).

### Changed consumption patterns during the pandemic

As was discussed in Box 1 in *Monetary Bulletin* 2020/2, a large share of household consumption was strongly affected by the Government's public health measures in H1/2020, and changes in demand varied across consumption categories. An estimated 40% of the household consumption basket was directly and strongly affected, as some expenses simply ceased during the most stringent public health restrictions, while others were deferred. Still other subcategories were affected very little, such as housing and telecom expenses. Spending on consumption categories such as groceries increased, however, partly due to a shift in spending away from overseas travel and services requiring close physical proximity to other people.

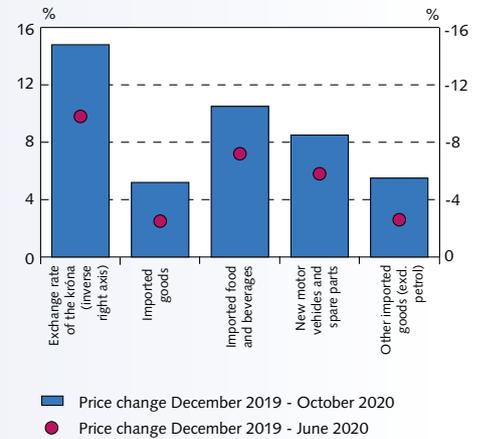
This can be seen clearly in the change that took place in the distribution of consumption spending, as data from the Meniga MarketWatch suggest. The data show that household spending on categories involving close interactions with other people or in sectors severely affected by public health measures contracted sharply in the spring, when the first wave of the pandemic was at its peak (Chart 4). Spending on goods whose purchase can easily be deferred – for example, clothing and footwear – also declined, while there was an increase in spending on items such as electronic equipment and in categories defined as necessities.

When the first wave of the pandemic subsided and public health measures were eased, there was a swift turnaround in the categories where spending had contracted. However, since the autumn, when COVID-19 case numbers began to rise again and public health measures were re-tightened, spending on services requiring close proximity to others has fallen once more. Sales of petrol have also declined as remote working has resumed, but spending on clothing and household goods has held its ground.

### Temporary challenges in measuring the CPI

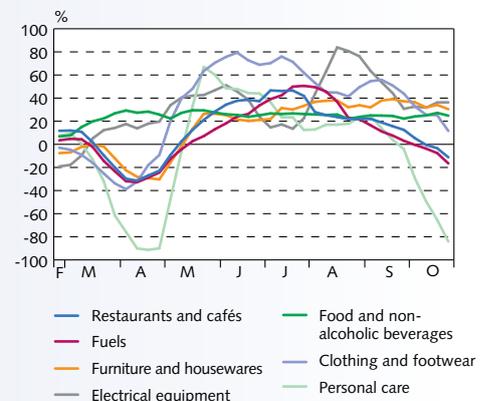
The Government's measures to minimise the spread of COVID-19 have also given rise to price measurement challenges. From mid-March until well into May, many businesses were closed or services prohibited under public health restrictions. In those instances, Statistics Iceland used price measurements from the previous month to estimate the price of the items in question, in addition to collecting price information from companies' websites and by telephone. According to Statistics Iceland, less than 10% of the CPI base was

Chart 3  
Depreciation of the króna and imported inflation 2020<sup>1</sup>



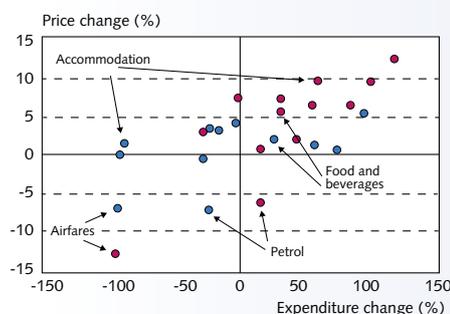
1. Price of foreign currency in krónur (narrow trade index).  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 4  
Change in household expenditure across selected categories in 2020<sup>1</sup>



1. Change since January 2020. Four-week moving average.  
Sources: Meniga Marketwatch, Central Bank of Iceland.

Chart 5  
Changes in household expenditure and price of selected goods categories



- February 2020 - May 2020
- February 2020 - September 2020

Sources: Meniga Marketwatch, Statistics Iceland.

estimated using this approach during the peak of the public health measures in April.<sup>2</sup>

In addition to the temporary challenges faced by Statistics Iceland in measuring inflation, the pandemic and restrictions on public gatherings have led to significant changes in households' consumption patterns, as has previously been discussed. It is possible that the consumption basket used to calculate the CPI does not give a fully accurate view of households' actual consumption patterns for the period after the pandemic reached Iceland.<sup>3</sup> As Chart 5 shows, price increases tended to be concentrated in categories such as food, where demand rose at the beginning of the pandemic. On the other hand, there was less demand in the categories that declined in price, such as airfares and petrol. When public health measures were eased, strong pent-up demand for various goods and services contributed to a rebound, thereby making it easier for firms to boost prices. It is also possible that the depreciation of the króna came more decisively to the fore in the goods categories where demand was strong. As a result, the CPI measurement for this period could represent an underestimation of the inflation experienced by households.

### Distortions in observed inflation due to changed consumption patterns appear to have been negligible

In order to estimate how large the distortion could be, data from the Meniga MarketWatch spending study were used to recalculate the main weights in the CPI. Inflation based on this "COVID-19 consumption basket" appears to have been marginally higher at the beginning of the pandemic. This is mainly because price rises for food and beverages weighed heavier than in the headline CPI numbers; furthermore, the weight of petrol declined, with the result that the drop in petrol prices lowered inflation less in the COVID-19 basket than it would have under normal circumstances. After the public health measures were relaxed, motor vehicle traffic increased, so that higher petrol prices were reassigned a heavier weight in the COVID-19 consumption basket. Moreover, there was increased demand for miscellaneous services such as accommodation, which rose in price over the summer. On the other hand, the decline in airfares lowered inflation less according to the COVID-19 basket than the CPI basket, as demand for air travel has been very limited. As the autumn advanced, the weight of expenditures for household goods and clothing rose higher than in a typical year, and price increases in these categories therefore exaggerated the difference between the two measures. Since February 2020, the estimated difference between headline inflation and inflation according to the COVID-19 basket has been in the 0.1-0.3 percentage point range. This is comparable to findings from other countries (see, for instance, Cavallo, 2020; Bank of England, 2020; and Bank of Canada, 2020). It is also consistent with information from Statistics Iceland, which is of the opinion that the distortion stemming from the decline in consumption could lead to an underestimation of the price level, but that the distortion is negligible if consumption returns to its previous pattern.

As has been discussed previously, social distancing and the bans on public gatherings have led to a contraction in spending on goods and services requiring close personal interactions with oth-

2. The subcategories affected were international airfares, package tours, hair and beauty salon services, healthcare (dentistry and physiotherapy), athletic and recreational activities, and cultural events, with some restaurants and cafes also closed.

3. The CPI is calculated using weights derived from prior years' surveys of consumer spending. After the CPI base was changed in March 2020, the weights were based on survey findings from 2016-2018. This is in line with international standards and is well suited to a typical year featuring few changes in households' consumption patterns.

ers. Chart 6 shows how CPI goods categories that are not sensitive to restrictions on gatherings – such as food, housing, and heat and electricity – accounted for a large share of measured inflation at the beginning of the pandemic. As the pandemic progressed and limitations on gatherings were eased, however, there was an increased contribution from goods categories sensitive to the restrictions.

### Corporate insolvencies and changes in world trade could impede competition and lead to rising prices

Competition limits firms' ability to raise prices, and as competition increases, firms are less able to widen their profit margins by charging higher prices. The possibility cannot be excluded that as the pandemic forces more companies around the world into insolvency, consumers will face rising prices, particularly in the tourism and restaurant sectors.

Increased competition in the wake of globalisation and the rise of e-commerce could explain why global inflation has been so low over the past decade. Increased globalisation has also fostered the development of large global supply chains. The importance of these supply chains became obvious at the beginning of the pandemic, when, as has previously been discussed, interruptions in manufacturing in China affected goods supplies worldwide. Now that tighter measures have been reinstated and more businesses have closed in a bid to curb the spread of the disease, shortages of certain goods could result and prices could rise. If the pandemic drags on, some companies may be forced to reassess their supply chains in order to prevent future disruptions.<sup>4</sup> In that event, they would tend to favour domestic trading partners over foreign ones. As a result, productivity could suffer and firms' costs could rise, ultimately pushing consumer prices upwards.

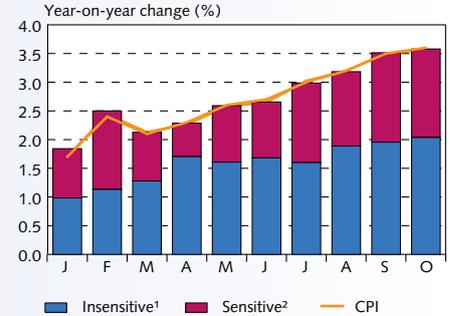
The goods categories comprising products most likely to be affected by repeated disruptions in production or changes in global value chains are shown in Chart 7. It is estimated that the categories comprising goods susceptible to these effects account overall for slightly more than one-fifth of the CPI base in Iceland.<sup>5</sup>

### Summary

Changes in consumption patterns in the wake of the COVID-19 pandemic, owing to both public health measures and individuals' disease prevention efforts, have affected price developments in Iceland and elsewhere. Furthermore, the depreciation of the króna has led to rising imported goods prices. The weight of various goods categories in households' expenses has changed temporarily, and as a result, the CPI has slightly underestimated inflation. The contribution of various goods categories to inflation has also changed, depending on the public health measures in place at the time in question.

As is discussed in Chapter V, the inflation outlook in Iceland will depend to a considerable degree on the path the COVID-19 pandemic takes and on the slack that has developed in the economy as a result of the shock. If the pandemic proves more persistent than is assumed in the baseline forecast, or if it changes consumption patterns permanently – for instance, by increasing the share of e-commerce – longer-term price developments could be affected. In

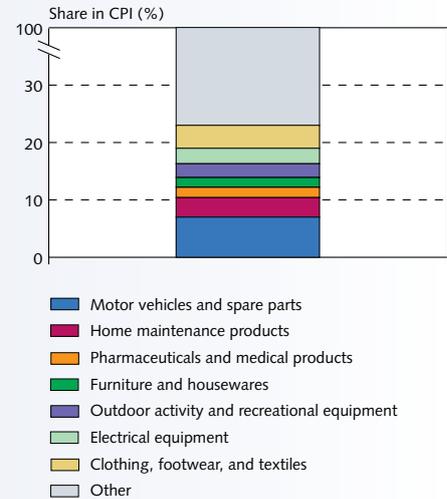
Chart 6  
Contribution of goods categories to inflation  
January - October 2020



1. Categories for which demand is insensitive to public health measures (food and beverages, housing, heating and electricity, health, postal and telephone services, education, and miscellaneous services). 2. Categories for which demand is sensitive to public health measures (alcohol and tobacco, clothing and footwear, furniture and housewares, travel and transportation, recreation and culture, hotels and restaurants, and personal care).

Sources: Statistics Iceland, Central Bank of Iceland.

Chart 7  
CPI components potentially affected  
by changes in global value chains



Sources: Statistics Iceland, Central Bank of Iceland.

4. This could also apply to countries' trade policies. If countries adopt a protectionist stance in order to boost domestic production (for instance, in manufacturing of pharmaceuticals or medical goods), it could have a similar impact on prices.

5. Based on an analysis by Deutsche Bank of the impact of changes in global supply chains on goods prices in the US. See, for example, Sveriges Riksbank (2020).

this context, developments in consumer demand are important, as are the effects of public health measures on the supply of goods and services.

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On 1 October 2020, the fiscal budget proposal for 2021 and the Parliamentary Resolution for the 2021-2025 fiscal plan were introduced in Parliament. The macroeconomic assumptions underlying both are therefore identical.

Table 1 compares Statistics Iceland's forecast from 1 October (on which Parliamentary estimates are based) and the forecast in *Monetary Bulletin* 2020/3, published in August. As can be seen, the fiscal budget proposal is based on a more optimistic economic outlook than presented in the Bank's August forecast. The outlook has worsened since then, according to the Bank's new baseline forecast, included in this *Monetary Bulletin*.

**Table 1 Macroeconomic assumptions in the 2021 fiscal budget proposal (%)**

	<i>Statistics Iceland forecast</i>	<i>MB 2020/3</i>
Private consumption	4.2	3.8
Public consumption	1.8	1.2
Gross capital formation	5.5	2.4
Exports of goods and services	17.1	19.8
Imports of goods and services	17.4	17.4
GDP growth	3.9	3.4
Inflation	2.7	2.4
Unemployment	6.8	7.9

Sources: Statistics Iceland, Central Bank of Iceland.

### Key assumptions in the 2021 fiscal budget proposal

**Wage assumptions:** The 2020 National Budget assumed a weighted average wage increase of 3%. According to the Ministry of Finance and Economic Affairs' reassessment of wage premises in the Budgets for 2019 and 2020, wage expense in 2021 will be 400 m.kr. lower than previously assumed. The budget proposal assumes an average wage rise of 3.6% in 2021, but the pay rises vary, as they involve fixed amounts rather than percentage increases. In addition to general wage rises are changes in vacation rights, which increase the annual rise in wage costs to 4%, or 13.8 b.kr. As a result, the net rise in wage costs in 2021 is estimated at 13.4 b.kr.

**Price assumptions:** In the premises for the 2020 National Budget, it was assumed that inflation would measure 3.2% that year, and in the 2021 budget proposal, this is assumed to materialise; therefore, there is no need to adjust year-2021 indexation in either direction. According to Statistics Iceland's forecast, the price level revision for other operating expenditures amounts to 2.7% for 2021, with expenses totalling 3.9 b.kr.

**Table 2 Changes in wages, benefits, prices, and exchange rate in 2021**

<i>Accrual basis</i>	<i>Expenditures, b.kr.</i>
<b>Wage assumptions</b>	
Reassessment of wage increases 2019 and 2020	-0.4
Estimated wage increases 2021	13.8
Total wage increases	13.4
Unemployment and social security benefits	7.8
General price level assumptions	3.9
Exchange rate assumptions	6.1
Changes in wages, benefits, prices, and exchange rate	31.2

Source: Fiscal budget proposal 2021.

## Box 3

### Fiscal budget proposal for 2021

*Exchange rate assumptions:* The exchange rate assumptions are based on the average exchange rate in August, when the króna was 13% weaker than had been assumed in the 2020 National Budget. Budgetary authorisations will rise by 6.1 b.kr. as a result, owing mainly to foreign policy expenses and drug costs.

*Unemployment and social security benefits:* The budget proposal assumes that benefits will rise by 3.6% on 1 January 2021, with an estimated associated cost of 7.8 b.kr.

In all, the above-specified changes to budgetary authorisations in the 2021 budget proposal – changes in wages, prices, and exchange rates, including increased unemployment and social security benefits – amount to just over 31 b.kr. (see Table 2).

Furthermore, it is assumed that changes in the tax system, both statutory and non-statutory (not yet passed into law), will reduce next year's Treasury revenues by nearly 38 b.kr. (Table 3).

**Table 3 Impact of tax changes on Treasury revenues in 2021**

<i>Accrual basis</i>	<i>B.kr.</i>
<i>Statutory changes</i>	
Last phase, changes in personal income tax	-14.3
Last phase, introduction of tax on F gases	0.2
First phase, reduction in bank tax	-1.7
Cancellation of transport equalisation tax on petrol products	-0.4
COVID-19 measures	-9.4
Total statutory changes	-25.6
<i>Non-statutory changes</i>	
Increase in tax-free inheritance tax threshold	-0.5
Changes in investment tax	-2.1
Support for third-sector organisations	-2.1
Extension of VAT reimbursements due to COVID-19	-8.0
Staff deployed (chain responsibility for PAYE tax)	0.3
Increase in carbon tax	0.2
Total non-statutory changes	-12.2
Total changes, statutory and non-statutory	-37.8

Source: Fiscal budget proposal 2021.

### Further changes on the revenues side

On 29 September, it was decided to lower the payroll tax by 0.25 percentage points for 2021 in order to mitigate the impact of the wage rises negotiated in the last wage settlements and scheduled to take effect at the beginning of 2021.

### Revision of 2020 revenue estimates

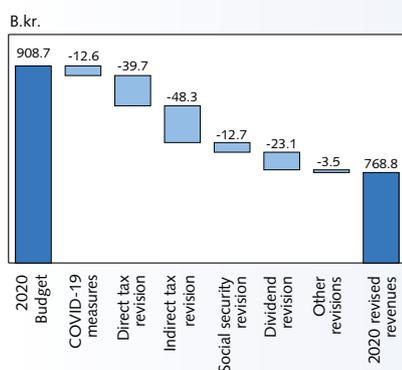
In the 2020 National Budget, revenues were estimated at just under 909 b.kr., whereas now they are assumed to total just under 769 b.kr. (Chart 1). The difference relative to the Budget as passed, 140 b.kr., is due both to automatic stabilisation of the tax system in connection with the economic recession and to the Government's pandemic response measures (further discussion below).

According to the fiscal budget proposal, the ratio of total Treasury revenues to GDP will decline by 2.7 percentage points relative to 2019, as can be seen in the breakdown in Table 4.

### Changes on the expenditures side

The main changes in 2020 expenditures from the 2020 National Budget to the 2021 budget proposal can be seen in Chart 2. Three items contribute most to the increase in expenditures. The first is the automatic stabilisation of unemployment benefits, totalling nearly

Chart 1  
2020 revenue revisions



Source: 2021 fiscal budget proposal.

Table 4 Breakdown of total Part A Treasury revenues

% of GDP	Accounts 2019	Reassessment 2020	Budget proposal 2021
Tax revenues	22.0	21.1	20.0
Taxes on revenues and profits	9.7	9.2	8.6
Taxes on payroll and workforce	0.3	0.3	0.3
Taxes on property	0.4	0.3	0.3
Taxes on goods and services	10.7	10.6	10.5
Taxes on international trade	0.1	0.1	0.1
Other taxes	0.8	0.7	0.4
Social contributions	3.3	3.1	3.1
Grants	0.1	0.2	0.2
Other revenues	2.6	2.5	1.9
Investment income	1.3	1.0	0.6
Interest income	0.3	0.2	0.2
Dividends, etc.	0.7	0.6	0.2
Fishing fees	0.2	0.2	0.2
Other investment income	0.0	0.0	0.0
Sales of goods and services	1.0	1.1	1.0
Miscellaneous revenues	0.3	0.4	0.2
Total revenues	27.9	26.9	25.2

Source: Fiscal budget proposal 2021.

30 b.kr. The second is the estimated 85 b.kr. due to mitigating measures in response to the pandemic, and the third is 5 b.kr. due to extra expenditures over and above the budgetary reserve fund. In all, expenditures in these three categories come to nearly 120 b.kr. over and above the assumptions underlying the 2020 National Budget.

According to the fiscal budget proposal, the ratio of total Treasury expenditures to GDP will rise by 3 percentage points relative to the 2020 Budget, as can be seen in the breakdown in Table 5.

Table 5 Breakdown of total Part A Treasury expenditures

Accrual basis, b.kr	Budget	Budget	Change	
	2020	proposal 2021 <sup>1</sup>	% of GDP	%
Secondary income	438.7	446.9	0.3	1.9
Operational transfers	325.4	341.4	0.5	4.9
Capital transfers	223.1	339.8	0.4	52.3
Investment contribution <sup>2</sup>	519.1	758.8	0.8	46.2
Expenditure framework	838.3	898.2	1.9	7.1
Interest expense	432.3	460.1	0.1	6.4
Other non-framework items	122.7	153.2	1.0	24.9
Total expenditures	1,004.2	1,097.4	3.0	9.3

1. Excluding price increases. 2. Investment allocations are depreciated over the lifetime of the asset.  
Source: Fiscal budget proposal 2021.

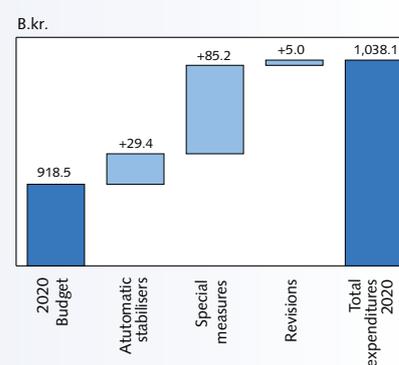
### Pandemic-related fiscal response measures

The COVID-19 pandemic has made a major impact on economic activity and on State and municipal finances. As is discussed in Box 2 in *Monetary Bulletin 2020/2*, the authorities have adopted a wide range of fiscal measures designed to mitigate the shock to the households and businesses most vulnerable to the effects of the pandemic, and to protect jobs and companies.

Tables 6 and 7 provide an updated summary of the pandemic-related fiscal response measures the Government plans to put in place in 2020 and 2021, together with their impact on the Treasury outcome. These include revenue loss subsidies for this year, which

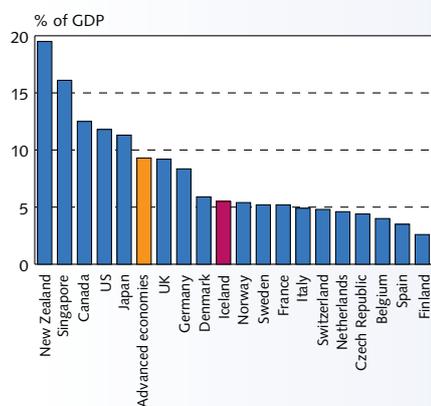
Chart 2

Revision of total expenditures in 2020



Source: 2021 fiscal budget proposal.

Chart 3  
Direct COVID-19 fiscal measures<sup>1</sup>



1. Announced measures as of mid-September 2020. The timeframe of the measures varies by country, but most will be implemented in 2020-2021.

Sources: IMF, Ministry of Finance and Economic Affairs, Central Bank of Iceland.

were approved by the Government on 16 October, after the fiscal budget proposal was introduced in Parliament. In all, the cost to the Treasury for these measures amounts to an estimated 174 b.kr., or 5¾% of year-2019 GDP. As Chart 3 shows, the direct measures are smaller, on average, than in other advanced economies but similar in scope to those put in place in the other Nordic countries, apart from Finland.

In addition to these are various fiscal measures that do not have the same direct impact on the Treasury outcome, even though their economic scope could be considerable. For example, bridge loans and support loans have been granted, in addition to subordinated loans totalling 23 b.kr., with the Treasury guaranteeing a large share

Table 6 Fiscal measures in response to COVID-19

Measure	Scope (b.kr.)
Unemployment benefits for reduced employment percentage	22.0
Partial wage payments during termination notice period	21.1
Acceleration of construction projects	17.9
Revenue loss subsidies	23.3
Loss carry-back for legal entities	12.0
Miscellaneous social and healthcare measures	5.4
Educational and job measures	5.0
Increased VAT reimbursement for maintenance, etc.	4.7
Tax revenue from special payouts of third-pillar pension savings	-4.6
Supplemental child benefit	3.1
Domestic and foreign marketing campaign	3.0
Business closure subsidies	2.5
Reimbursements for film production	2.1
Extended income linkage of entitlement to unemployment benefits	1.5
Support for innovation and development	1.4
Wage payments during quarantine	0.3
Cancellation of bed-night tax	0.3
Cancellation of customs processing fees	0.2
<b>Total cost</b>	<b>121.3</b>

Source: Fiscal budget proposal 2021.

Table 7 Fiscal measures for 2021 in response to COVID-19

Measure	Scope (b.kr.)
Investment and construction initiative	27.2
Extension of VAT reimbursement	8.0
Expedited reduction of bank tax	4.9
Increased VAT reimbursement from 60% to 100%	3.9
Support for innovation	2.5
Extended income linkage of entitlement to unemployment benefits	1.5
Education	1.0
Cancellation of bed-night tax	0.8
Services for job-seekers	0.7
Labour market initiatives	0.6
Family affairs	0.5
Tax revenue from special payouts of third-pillar pension savings	-0.6
Mental health	0.6
Tax, special revenues	0.5
Cancellation of customs processing fees	0.4
Wage payments during quarantine	0.2
<b>Total cost</b>	<b>53</b>

Source: Fiscal budget proposal 2021.

of commercial bank loans to businesses. Furthermore, tax payment deferrals have been granted for some 20 b.kr., and in June, Parliament passed legislation on debt moratoria of up to one year for companies (for further information, see Box 2 in *Monetary Bulletin* 2020/2).

### Treasury debt ratio rising sharply

In order for Treasury finances to be sustainable, the debt-to-GDP ratio must remain stable or be on a declining trend. According to the fiscal plan presented for 2021-2025, the debt ratio will rise from 30% of GDP in 2019 to a peak of 50% of GDP in 2025. The debt ratio therefore increases sharply in the next few years, albeit less than in the wake of the financial crisis just over a decade ago (Chart 4).

Although the debt-to-GDP ratio is expected to peak in 2025, this does not mean that nominal Treasury debt will then be stable or declining, as Treasury cash flows indicate that cash flows from operations will still be negative by 62 b.kr. in 2025 and the net financing need will be around 100 b.kr. (Table 8).

Table 8 Treasury cash flows 2021-2025

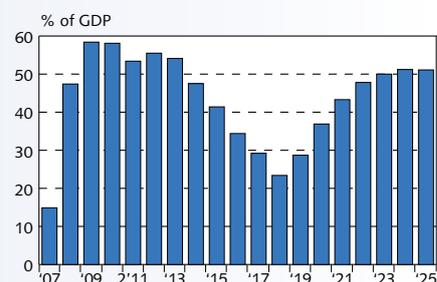
	Budget proposal	Estimate	Estimate	Estimate	Estimate
Payments basis, b.kr.	2021	2022	2023	2024	2025
Net cash from operating activities	-182	-175.1	-127.2	-93.4	-62
Total investment activities	-97.1	-62.8	-37.1	-40.3	-38.8
Net financing balance	-279	-237.9	-164.3	-133.7	-100.8
Financing activities, total	277.4	225.2	164.3	133.7	100.8

Source: Fiscal budget proposal 2021.

This increase in the debt ratio due to deficit operations reflects the Government's policy responses to the pandemic and the ensuing economic shock. Discretionary measures are applied, as is discussed above, and automatic stabilisers are allowed to work fully.

When the pandemic has receded and economic activity picks up again, however, it will be necessary to unwind these measures so as to avoid posing a risk to fiscal sustainability. In assessing whether the Treasury's debt level can be deemed sustainable, it is necessary to bear two things in mind: the interest burden on Treasury debt, and the cyclically adjusted primary balance on Treasury operations (both relative to GDP). The change in the Treasury debt ratio is equal to the real interest burden in excess of GDP growth, less the primary surplus relative to GDP. In order to prevent the debt ratio from rising, the cyclically adjusted primary surplus relative to GDP must be at least equal to the real interest burden over and above output growth. If the objective is to reduce the debt ratio, the primary surplus must therefore be greater than the real interest expense burden over and above output growth. As debt and interest rise and GDP growth declines, the Treasury must rely more on tax increases or expenditure cuts, either now or in the future. As a result, the decisions the Treasury must take depend greatly on the GDP growth path. Although the debt ratio the Treasury faces for 2025 is only  $\frac{3}{4}$  of the 2011 peak, it must also be remembered that there is no foreseeable one-off windfall like the one the Treasury received in 2016 in the form of stability contributions from the failed banks' estates, which totalled more than 15% of GDP in 2016. Furthermore, the premises for the medium-term economic outlook are highly uncertain.

Chart 4  
Treasury debt according to debt rule<sup>1, 2</sup>



1. Total liabilities net of pension obligations and accounts payable and net of cash and bank deposits; cf. Article 7 of the Act on Public Finances, no. 123/2015. 2. Ministry of Finance and Economic Affairs forecast 2020-2025.

Sources: Ministry of Finance and Economic Affairs, Statistics Iceland, Central Bank of Iceland.

## Box 4

## The Central Bank's macroeconomic forecasts for 2019

As in previous years, the November issue of *Monetary Bulletin* includes a summary of the Bank's macroeconomic forecasting performance over the previous calendar year. This helps the Bank to shed light on the main causes of forecasting errors, so that it can learn from them and use them to improve its models and forecast preparation.

The year 2019 was characterised by significant economic turmoil, and the economic outlook changed markedly with the insolvency of airline WOW Air in March. The forecasts prepared by the Bank prior to the airline's collapse therefore turned out too optimistic. The forecasts prepared immediately thereafter proved overly pessimistic, however, mainly because the contraction in private sector spending was concentrated more on imported goods and services than had been assumed. Early in the year, the Bank's inflation forecasts were also somewhat too pessimistic, apparently because of an overestimation of the exchange rate pass-through from the depreciation of the króna to inflation and inflation expectations.

### Major change in the GDP growth outlook post-WOW Air

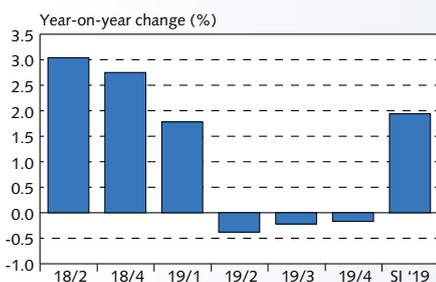
As Chart 1 shows, the Bank's forecasts well into 2018 assumed a GDP growth rate of 2¾-3% in 2019. The Bank grew gradually more pessimistic about the outlook, however, and by the February 2019 *Monetary Bulletin*, the GDP growth forecast had been revised down to 1.8%.<sup>1</sup> A major factor in the shift was the growing realisation that WOW Air was facing financial difficulties. By late 2018, the airline had already begun to scale down its activities and sell aircraft from its operations. It was still assumed that the company would manage to right itself and remain in operation, however. But as March 2019 advanced, it became ever clearer that it would not survive. Added to this were Icelandair's difficulties due to the grounding of its new Boeing 737 MAX jets, which were to have been used for nearly a third of the airline's summer 2019 flights. Projections for exports in 2019 as a whole were therefore revised downwards in the Bank's February forecast, and again in May, which was the Bank's first forecast after WOW Air's insolvency in late March. Instead of continuing to grow, exports were expected to contract by nearly 4% during the year. In the main, this forecast has been borne out (Chart 2).

As a result, the Bank revised its GDP growth forecast even further downwards in its May forecast, to -0.4%. In the last forecast of the year, a contraction was still expected for 2019 as a whole, but by that time national accounts data for H1/2019 were available. In February 2020, however, when Statistics Iceland published its first estimate of 2019 GDP growth, it became apparent that the Bank's forecasts just after the collapse of WOW Air were overly pessimistic, as GDP growth for the year had actually measured 1.9%, broadly in line with the Bank's February forecast.

### The outlook for domestic demand growth deteriorated sharply ...

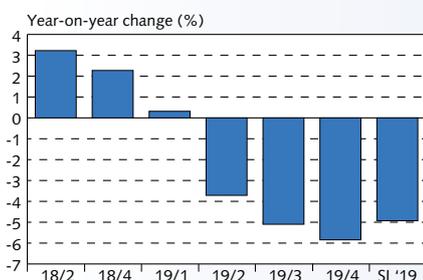
The worsening outlook for exports also significantly affected the Bank's forecasts of developments in domestic demand (Chart 3). The outlook for private consumption growth was revised sharply downwards, and beginning with the May 2019 forecast the growth rate was projected at 1½% instead of 4%, as in the February forecast. This revised forecast has broadly materialised. In May it was assumed that business investment would contract by nearly 7% in 2019, but as the year progressed, it became clear that this was an

Chart 1  
*Monetary Bulletin* GDP growth forecasts for 2019<sup>1</sup>



1. MB 2018/2, 2018/4, and 2019/1-2019/4 forecasts for 2019 GDP growth, together with Statistics Iceland's most recent estimate of 2019 GDP growth.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 2  
*Monetary Bulletin* export forecasts for 2019<sup>1</sup>

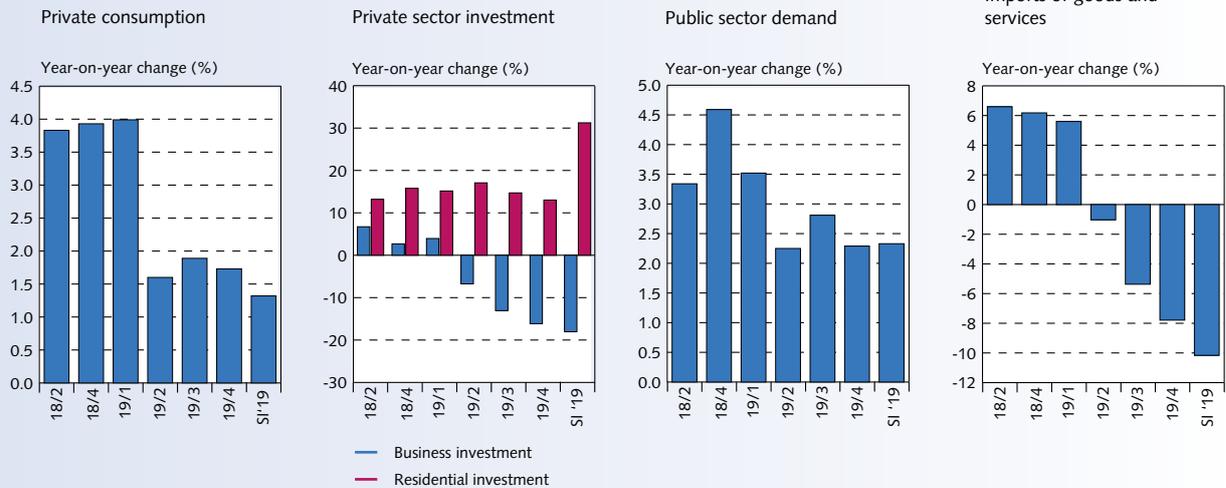


1. MB 2018/2, 2018/4, and 2019/1-2019/4 forecasts for 2019 GDP growth, together with Statistics Iceland's most recent estimate of 2019 export growth.  
Sources: Statistics Iceland, Central Bank of Iceland.

1. In February 2019, when the Bank's forecast for *Monetary Bulletin* 2019/1 was prepared, national accounts data from Statistics Iceland were available only through Q3/2018.

Chart 3

*Monetary Bulletin* forecasts of selected macroeconomic variables for 2019<sup>1</sup>



1. MB 2018/2, 2018/4, and 2019/1-2019/4 forecasts for 2019 selected macroeconomic variables, together with Statistics Iceland's most recent estimate for 2019. Public sector demand is the sum of public consumption and public investment.  
Sources: Statistics Iceland, Central Bank of Iceland.

underestimation. The actual contraction turned out much larger, or 18%. In addition, forecasts of public sector demand were revised downwards in May, to just over 2% growth during the year, which has been borne out

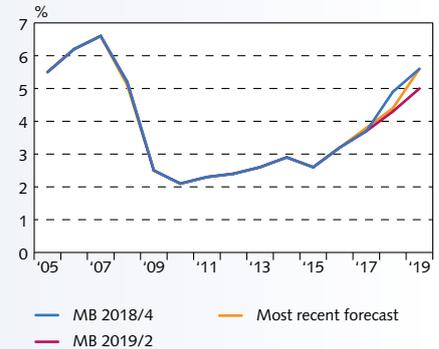
### ... but owing mainly to the shift in demand towards domestic production, GDP growth turned out stronger than initially forecast

As is mentioned above, the Bank's forecast of the post-WOW Air contraction in GDP proved overly pessimistic. In the end, GDP growth for the year measured 1.9%, close to the Bank's February forecast. The deviation is due in part to Statistics Iceland's revision of 2018 GDP growth figures. In February 2020, Statistics Iceland revised year-2018 GDP growth downwards by 1 percentage point, which inevitably affected measured 2019 GDP growth by a similar amount. Furthermore, growth in residential investment turned out considerably stronger than forecast: In May, the Bank forecast an increase of 17%, but growth turned out nearly twice as strong, according to Statistics Iceland's final figures (Chart 3). As Chart 4 indicates, the May forecast assumed that the residential investment-to-GDP ratio would rise marginally during the year but remain below the level that had been forecast before the economic outlook deteriorated. Ultimately, the ratio rose more than expected, to 5½%, as had been forecast in *Monetary Bulletin* 2018/4.

However, the main reason the Bank's forecasts proved too pessimistic after WOW Air failed is that the Bank underestimated how much impact the shock would have on goods and services imports. Before WOW Air failed, imports were expected to grow by just over 5% during the year, but afterwards, the forecast was revised to provide for a contraction of 1% (Chart 3). The forecast was repeatedly lowered as the year progressed, and the contraction ended up measuring over 10%. The expenditure shift of demand towards domestic production was therefore significantly underestimated. This can be seen clearly in Chart 5, which shows that according to the forecast in *Monetary Bulletin* 2018/4, the ratio of imports to domestic demand would rise slightly in 2019, but after WOW Air collapsed the projection was revised to a year-on-year decline of just under 1 percentage

Chart 4

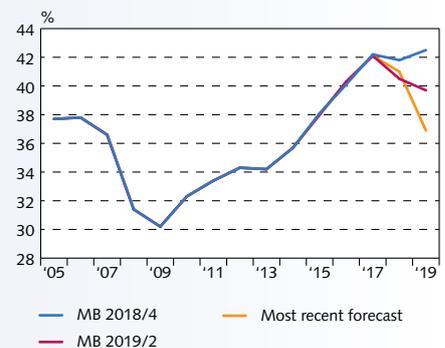
*Monetary Bulletin* forecasts of the residential investment-to-GDP ratio for 2019<sup>1</sup>



1. MB 2018/4 and 2019/2 forecasts of the 2019 residential investment-to-GDP ratio, together with Statistics Iceland's most recent estimate.  
Sources: Statistics Iceland, Central Bank of Iceland.

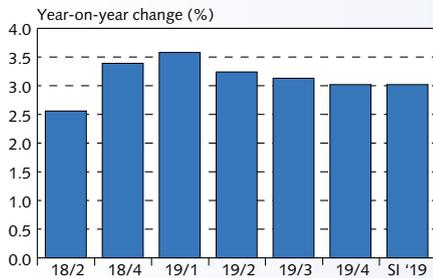
Chart 5

*Monetary Bulletin* forecasts of import penetration for 2019<sup>1</sup>



1. MB 2018/4 and 2019/2 forecasts of import penetration for 2019 (at 2005 prices), together with Statistics Iceland's most recent estimate.  
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 6  
Monetary Bulletin inflation forecasts for 2019<sup>1</sup>



1. MB 2018/2, 2018/4, and 2019/1-2019/4 forecasts of year-2019 inflation, together with observed inflation for the year.  
Sources: Statistics Iceland, Central Bank of Iceland.

point. In fact, imports contracted considerably more than domestic demand, and import penetration fell by 4 percentage points. The Bank's forecasts following the collapse of the airline therefore underestimated the extent to which the contraction in private sector spending would affect imports, and this underestimation contributed significantly to the overly pessimistic GDP growth forecast.

### Inflation rose less in 2019 than was expected following the depreciation of the króna

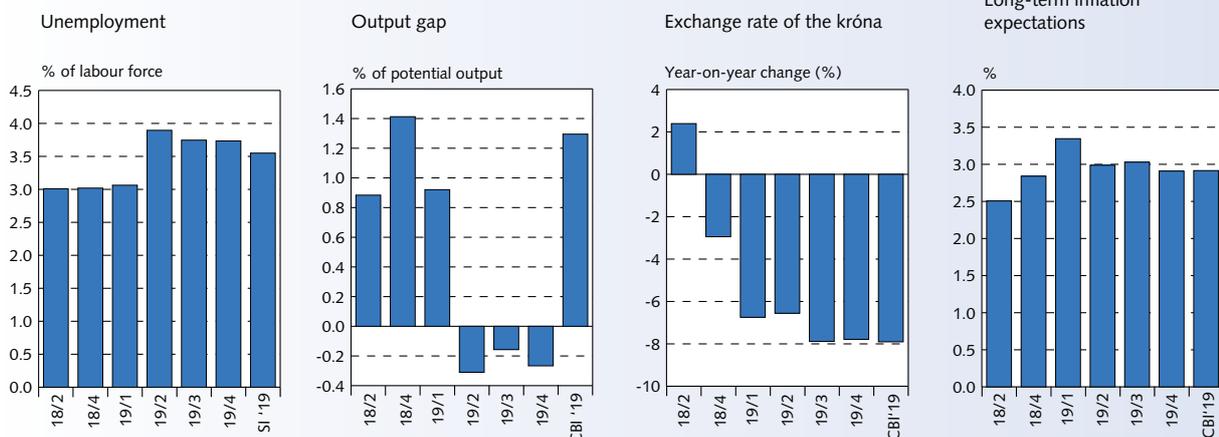
Chart 6 shows how the Bank's forecasts of 2019 inflation evolved over time. In mid-2018, the Bank forecast that inflation would average 2.5% during 2019, but by November the inflation outlook had deteriorated, as the króna had depreciated during the autumn, driven by growing concerns about both WOW Air's position and the outcome of the round of wage negotiations that was just beginning. As 2019 progressed, however, the Bank's forecasts of average inflation for the year were gradually revised downwards, to close to 3%, which proved to be the actual measurement.

The Bank's exchange rate forecast from May was largely borne out, as can be seen in Chart 7. Unemployment rose somewhat less, however, and the economic slack forecast in spring 2019 never materialised, as GDP growth proved more robust than expected, as is discussed above. In spite of this, the Bank's forecast of average inflation for the year was slightly too pessimistic, and the exchange rate pass-through from the depreciation of the króna proved to have been overestimated. One possible reason for this may be that long-term inflation expectations rose less than feared in the wake of the depreciation (Chart 7). The February forecast assumed that the ten-year breakeven inflation rate in the bond market would average 3.4% during the year, therefore rising by ½ a percentage point relative to the November forecast; however, the breakeven rate remained unchanged. Inflation expectations proved to be more firmly anchored to the target than the Bank dared hope.

### Tourism shocks the main reason for the economic setback in 2019

The discussion above shows clearly how the economic outlook for 2019 changed when WOW Air's difficulties escalated, and particularly after the company failed in late March of that year. To estimate the magnitude of that impact, it is possible to use simulations with

Chart 7  
Monetary Bulletin forecasts of determinants of inflation for 2019<sup>1</sup>



1. MB 2018/2, 2018/4, and 2019/1-2019/4 forecasts of selected macroeconomic variables for 2019, together with the final results for the year.  
Sources: Statistics Iceland, Central Bank of Iceland.

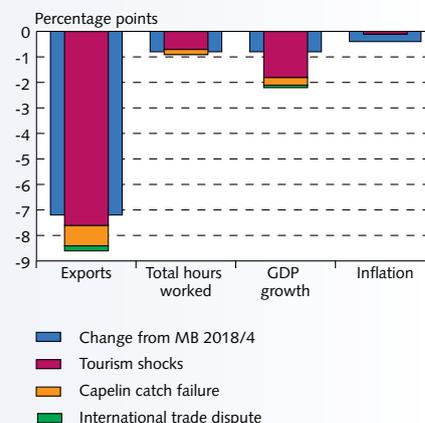
the Bank's macroeconomic model and compare forecasts based on various assumptions about the airline's activities. The forecast from November 2018, which appeared in *Monetary Bulletin* 2018/4, is used, as it was prepared before any significant revisions were made to assumptions about the company's position and activities. The November forecast assumed that exports would increase by 2.3% year-on-year in 2019, and that GDP growth would measure 2.7%. In fact, exports contracted by 4.9%, which represents a 7.2 percentage point deviation from the November forecast. By the same token, GDP growth turned out 0.8 percentage points weaker than forecast, or 1.9%. As Chart 8 illustrates, the recasting of the November forecast with changed assumptions about the airline's activities and the impact its collapse had on tourism leads to a 7.6 percentage point revision of growth in goods and services exports and a 1.8 percentage point revision of GDP growth for the year. The impact of WOW Air's collapse on export growth was therefore similar to the deviation in the Bank's November 2018 export forecast, whereas the impact on GDP growth was somewhat stronger. The revision of developments in total hours worked during the year stems mostly from the shock to the tourism industry, but the adjustment of demand and the exchange rate due to the export shock appears to explain only to a limited extent why inflation turned out lower than forecast.

WOW Air's failure and the shocks to the tourism industry were not the only negative shocks hitting the domestic economy in 2019, however. To compound matters, no capelin quota was issued for the year (for further discussion, see Chapter I in *Monetary Bulletin* 2019/2), and the trade dispute between the US and China cut into international trade and GDP growth worldwide (for further discussion, see Chapter I in *Monetary Bulletin* 2019/4). As Chart 8 indicates, these two shocks exacerbated the contraction in exports, increasing it by a further 1 percentage point, and lowering GDP growth for the year by  $\frac{1}{2}$  a percentage point. On the whole, these two simulations indicate a setback of just over 2 percentage points in year-2019 GDP growth. The actual reduction was less than half that amount, however, or 0.8 percentage points.

### Summary

Although export shocks, particularly in the tourism sector, explain the lion's share of the errors in the Bank's forecasts for 2019, they ultimately affected the economy less than could have been expected given the size of the shocks themselves and the economy's historical adjustment to shocks of this type. The factor that appears to go furthest in explaining why the contraction was less pronounced than could have been expected was the shift in demand towards domestic goods and services, which was stronger than historical evidence had suggested it would be. The rise in inflation also turned out smaller than had been forecast following the depreciation of the króna, even though the slack in the economy was initially overestimated. It appears that this can be attributed to the fact that long-term inflation expectations did not rise as much as was initially feared, which indicates that expectations are more firmly anchored to the Bank's inflation target than before.

Chart 8  
Forecast errors for 2019 and contribution of selected shocks<sup>1</sup>



1. The chart shows forecast errors for selected macroeconomic variables for 2019, according to the MB 2018/4 forecast, and the contribution of selected shocks occurring in 2019.

Source: Central Bank of Iceland.

## Appendix 1

# Snapshots of domestic and foreign economic activity in the midst of a global pandemic

Chart 1  
Indicators of global economic activity<sup>1</sup>

Daily new cases of COVID-19<sup>2</sup>

1 February - 13 November 2020

Demand for retail and entertainment<sup>3</sup>

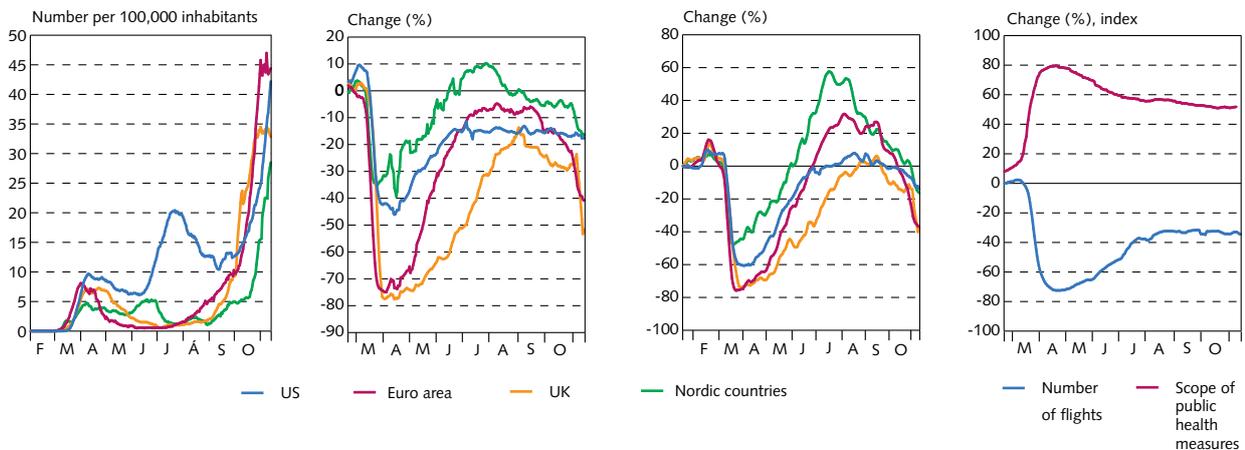
21 February - 13 November 2020

Motor vehicle and pedestrian traffic<sup>4</sup>

19 January - 13 November 2020

International air traffic<sup>5</sup>

19 January - 13 November 2020



1. Seven-day moving average. Figures for the Nordic countries are the average from Denmark, Norway, and Sweden. 2. Confirmed new infections. 3. Number of visits to restaurants, cafés, shopping centres, amusement parks, museums, and cinemas, according to Google. Change from the period 3 January - 6 February 2020. 4. Vehicle and pedestrian traffic according to Apple Mobility Trends. Change since 19 January 2020. 5. Number of international commercial flights (change since 19 February 2020) and the average scope of public health measures worldwide (index).  
Sources: Apple Mobility Trends, Flightradar24, Google, Johns Hopkins University, OECD, Oxford COVID-19 Government Response Tracker, WHO.

Chart 2  
Indicators of domestic economic activity<sup>1</sup>

Tourists and spending<sup>2</sup>

7 March - 13 November 2020

Infections and disease prevention<sup>3</sup>

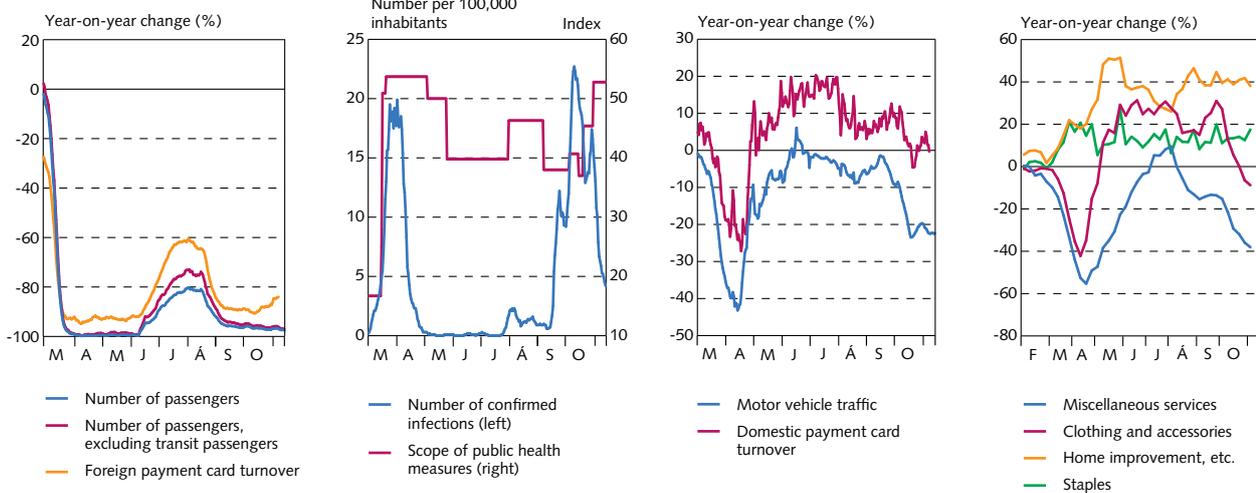
1 March - 13 November 2020

Traffic and payment card turnover<sup>4</sup>

1 March - 13 November 2020

Household spending, by category<sup>5</sup>

1 February - 7 November 2020



1. All data are seven-day moving averages except scope of public health measures (primary data), domestic payment card turnover, motor vehicle traffic (fourteen-day moving average), and household spending, by category (28-day moving average). 2. Number of passengers travelling through Keflavik Airport each day. Passenger numbers for 2019 excluding WOW Air. Payment card figures are the sum of foreign-issued debit and credit cards. 3. Scope of public health measures weights together various measures of the extent of government restrictions in order to curb the spread of COVID-19. 4. Daily motor vehicle traffic along three main routes in the capital area. Payment card figures are the sum of domestic-issued debit and credit cards. 5. Miscellaneous services includes restaurants, theatres, fitness centres, etc. Home improvement includes purchases of electronics, furniture, and in hardware stores.  
Sources: Covid.is, Icelandic Road and Coastal Administration, Isavia, Meniga Marketwatch, Oxford COVID-19 Government Response Tracker, Statistics Iceland, Central Bank of Iceland.

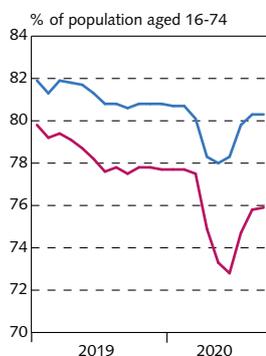
Chart 3  
Indicators from the domestic labour market

Employment and hours worked<sup>1</sup>  
January 2019 - September 2020



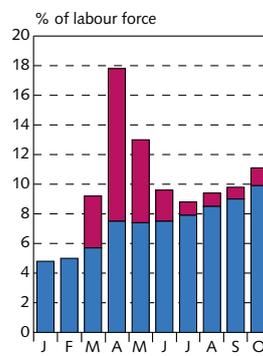
— Number of employed  
— Average working hours  
— Total working hours

Labour participation rate and employment rate<sup>2</sup>  
January 2019 - September 2020



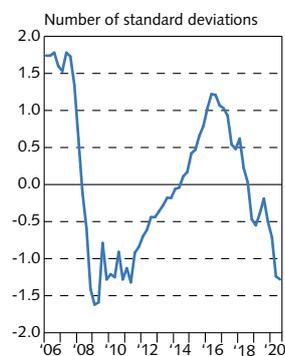
— Labour participation rate  
— Employment rate

Registered unemployment  
January - October 2020



— Unemployment  
— Part-time benefits

RU Indicator<sup>3</sup>  
Q1/2006-Q3/2020



1. Three-month moving average. 2. Seasonally adjusted three-month moving average. 3. The resource utilisation (RU) indicator is the first principal component of selected indicators of factor utilisation; it is scaled so that its mean value is 0 and the standard deviation is 1. A more detailed description can be found in Box 3 in MB 2018/2.  
Sources: Directorate of Labour, Statistics Iceland, Central Bank of Iceland.

## Appendix 2

## Forecast tables

Table 1 Key economic indicators<sup>1</sup>

	2019	2020	2021	2022	2023
Private consumption	1.3 (1.6)	-5.5 (-5.8)	2.7 (3.8)	3.9 (3.5)	3.7
Public consumption	4.2 (4.1)	3.9 (3.2)	1.0 (1.2)	2.2 (2.7)	2.5
Gross capital formation	-6.6 (-6.3)	-15.5 (-10.0)	3.1 (2.4)	4.8 (3.7)	7.0
Business investment	-18.0 (-17.5)	-19.9 (-13.4)	-0.1 (-0.8)	14.5 (5.9)	12.2
Residential investment	31.2 (31.2)	-18.8 (-21.2)	-10.3 (6.6)	0.8 (8.7)	4.7
Public investment	-9.8 (-10.4)	3.6 (19.5)	28.6 (5.6)	-11.8 (-6.4)	-4.5
Domestic demand	-0.2 (-0.1)	-4.7 (-3.8)	1.9 (2.2)	3.6 (3.3)	4.0
Exports of goods and services	-4.9 (-5.0)	-30.1 (-28.5)	11.7 (19.8)	22.2 (9.9)	5.1
Imports of goods and services	-10.2 (-9.9)	-23.9 (-23.1)	10.7 (17.4)	17.7 (10.3)	5.6
Gross domestic product (GDP)	1.9 (1.9)	-8.5 (-7.1)	2.3 (3.4)	5.7 (3.4)	3.9
Contribution of net trade to GDP growth (percentage points)	2.2 (2.0)	-4.0 (-3.5)	0.4 (1.2)	2.2 (0.2)	0.0
Unemployment (% of labour force)	3.6 (3.6)	5.9 (7.2)	8.3 (7.9)	6.7 (6.3)	6.5
Output gap (% of potential output)	1.9 (1.3)	-5.7 (-5.8)	-1.9 (-2.2)	-0.1 (-0.6)	0.2
Current account balance (% of GDP)	6.2 (6.0)	2.6 (2.0)	3.1 (3.9)	3.9 (3.7)	3.3
Trade-weighted exchange rate index <sup>2</sup>	181.0 (181.0)	201.9 (201.2)	213.0 (208.0)	211.3 (207.4)	207.4
Inflation (consumer price index. CPI)	3.0 (3.0)	2.9 (2.6)	2.9 (2.4)	2.2 (1.9)	2.3
Inflation in main trading partners <sup>3</sup>	1.5 (1.5)	0.8 (0.7)	1.4 (1.3)	1.7 (1.7)	1.6
GDP growth in main trading partners <sup>3</sup>	1.8 (1.8)	-5.9 (-7.1)	4.6 (5.5)	3.3 (3.2)	2.3

1. Year-on-year change (%) unless otherwise specified (figures in parentheses are from the forecast in MB 2020/3). 2. Narrow trade-weighted basket. The index has been recalculated so that on 2 January 2009 it was assigned a value equivalent to that of the now-discontinued Exchange Rate Index. 3. Forecast based on Consensus Forecast, IHS Markit, IMF, and OECD.

Sources: Consensus Forecasts, IHS Markit, IMF, OECD, Refinitiv Datastream, Statistics Iceland, Central Bank of Iceland.

Table 2 Quarterly inflation forecast (%)<sup>1</sup>

Quarter	Inflation (year-on-year change)	Inflation (annualised quarter-on-quarter change)
	Measured value	
2019:4	2.5 (2.5)	2.5 (2.5)
2020:1	2.1 (2.1)	0.2 (0.2)
2020:2	2.5 (2.5)	6.0 (6.0)
2020:3	3.2 (3.0)	4.3 (3.4)
	Forecasted value	
2020:4	3.7 (2.9)	4.3 (2.3)
2021:1	3.7 (2.9)	0.5 (0.1)
2021:2	3.1 (2.6)	3.3 (4.8)
2021:3	2.5 (2.1)	2.1 (1.3)
2021:4	2.2 (2.1)	3.0 (2.1)
2022:1	2.3 (2.1)	0.7 (0.1)
2022:2	2.3 (1.9)	3.2 (3.9)
2022:3	2.2 (1.8)	1.8 (1.0)
2022:4	2.2 (1.8)	3.2 (2.1)
2023:1	2.2 (2.0)	0.8 (1.1)
2023:2	2.3 (2.0)	3.6 (3.8)
2023:3	2.4 (2.1)	1.9 (1.5)
2023:4	2.4	3.5

1. Figures in parentheses are from the forecast in MB 2020/3.

Sources: Statistics Iceland, Central Bank of Iceland.