MONETARY BULLETIN

2018•2

Contents

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 16 May 2018

The Monetary Policy Committee (MPC) of the Central Bank of Iceland has decided to keep the Bank's interest rates unchanged. The Bank's key interest rate – the rate on seven-day term deposits – will therefore remain 4.25%.

According to the Central Bank's new macroeconomic forecast, published in the May issue of *Monetary Bulletin*, the outlook is for GDP growth to ease between 2017 and 2018, owing to weaker export growth and a less rapid increase in domestic demand. Output growth has developed in line with the Bank's February forecast and, as was projected then, is expected to ease further in the next two years.

Inflation measured 2.5% in Q1/2018 and 2.3% in April. Underlying inflation is similar. Therefore, inflation has been broadly in line with the Bank's 2½% inflation target in recent months. The year-on-year rise in house prices has eased further, and the opposing effects of previous appreciation of the króna on inflation have diminished. This trend will probably continue in the near term. The exchange rate of the króna has been broadly stable since the last MPC meeting, and the foreign exchange market has remained well balanced. Neither the inflation outlook nor inflation expectations have changed to any marked degree since the Committee's last meeting.

The outlook is for the positive output gap to narrow. Nevertheless, a tight monetary stance is still needed in order to contain rapid demand growth. The short-term risk of unsustainable wage increases has receded, but there are still underlying pressures in the labour market.

Monetary Bulletin 2018/2[1]

Global GDP growth is still on the rise. It measured 3.8% in 2017 and, among Iceland's main trading partners, was 2.4%, the strongest since 2010. This recovery has benefited the Icelandic economy, boosting exports last year and further improving terms of trade. The improvement in external conditions has been slower, however, than in 2015-2016. In particular, there has been a slowdown in export growth, which has significantly outpaced trading partners' GDP growth in recent years.

The slower recovery of external conditions has reduced GDP growth from its 2016 peak of 7.5%. According to preliminary figures from Statistics Iceland, output growth measured 3.6% in 2017, which was well in line with the forecast in the February *Monetary Bulletin*. The GDP growth outlook for 2018 and the following two years is also largely unchanged. Growth is projected to measure 3.3% this year, close to last year's level, and then subside further in the next two years, approaching its long-term potential of just under 3%. This will be driven by weaker growth in exports and in private sector consumption and investment spending, but offset by increased public sector activity. Even though domestic demand growth will ease as well, it appears set to continue outpacing GDP growth, further narrowing the current account surplus.

Labour demand grew strongly in Q1/2018, and unemployment continued to decline. As in the Bank's February forecast, job creation is expected to ease over the forecast horizon, in line with declining GDP growth. The labour market remains tight, even though it is offset by large-scale importation of labour. The output gap is still considered to be significant, and slightly wider than was assumed in February. As was the case then, it is estimated to have peaked already and is expected to close by end-2020.

Inflation measured 2.5% in Q1/2018, after rising by 0.6 percentage points from the previous quarter. Underlying inflation has risen as well and, like headline inflation, is close to the Bank's inflation target. The inflation outlook is broadly unchanged from the February forecast. Inflation is expected to rise over the course of the year, measuring 2.9% in Q4, and then taper off again in 2019 and hover around the target for the remainder of the forecast horizon.

1. The analysis presented in this *Monetary Bulletin* is based on data available in mid-May.

I Economic outlook, key assumptions, and main uncertainties

Central Bank baseline forecast

Global output growth outlook continues to improve

The global economy gained momentum in H2/2017, supported by favourable financial conditions and increased optimism among households and businesses. Global GDP growth measured 4% in H2 and 3.8% in 2017 as a whole, the strongest since 2011 and 0.6 percentage points above year-2016 growth. The economic outlook for the next few years continues to improve. The International Monetary Fund (IMF) projects global GDP growth at 3.9% in 2018 and 2019 and expects the persistent slack that has plagued advanced economies to close in the latter half of this year.

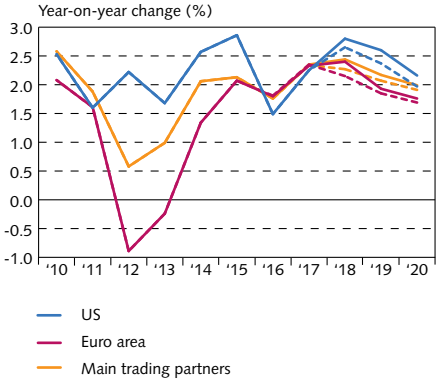
GDP growth averaged 2.4% among Iceland's main trading partners in 2017, an increase of 0.6 percentage points year-on-year. The baseline forecast assumes that it will also measure 2.4% this year, slightly more than was forecast in the February *Monetary Bulletin* (Chart I-1). The improvement is due mainly to an improved GDP growth outlook for the eurozone and the United States. As in the Bank's previous forecasts, it is assumed that trading partner growth will ease over the next two years, although the forecast for both years has been revised upwards since February. Further discussion of the global economy can be found in Chapter II, and uncertainties in the global outlook are discussed later in this chapter.

Baseline forecast assumes a slight additional appreciation of the króna through next year

Terms of trade for goods and services improved by 1.7% in 2017 and have improved by nearly 15% since 2013. Terms of trade for goods deteriorated slightly, however, in spite of a more than 20% rise in aluminium prices, as foreign currency prices of imports rose by nearly 9%. Furthermore, foreign currency prices of marine products fell by 1%. Because of the quota reduction in the Barents Sea and increased optimism about market prospects, however, marine product prices are now expected to rise more than was assumed in February. In spite of this and the recent surge in aluminium prices, the outlook is for terms of trade for goods and services to deteriorate by 0.4% this year, after four years of uninterrupted improvement. The main reason for this is the rise in inflation in trading partner countries. The most important factor is a 20% rise in oil prices this year and an increase of nearly 6% in other commodities prices. Although they have deteriorated compared to the February forecast, terms of trade are expected to improve over the next two years by a total of 2½%, or 1½ percentage points more than was projected in February (Chart I-2). The main difference is that the outlook for the coming two years is now for lower global oil prices than was indicated by futures prices in February.

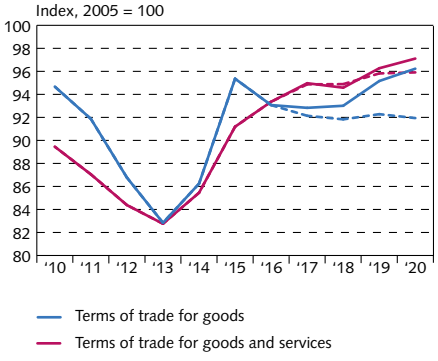
The króna has appreciated by 1½% versus the average of other currencies since the February *Monetary Bulletin* and has been a full 1% higher in Q2 to date than was assumed in February. According to

Chart I-1
Global output growth 2010-2020[1]



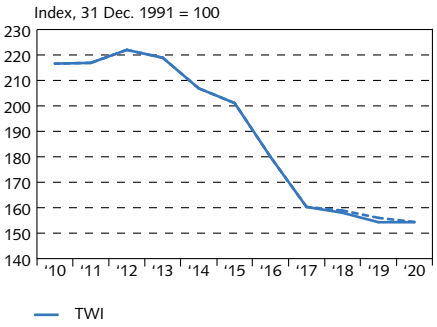
1. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: OECD, Thomson Reuters, Central Bank of Iceland.

Chart I-2
Terms of trade 2010-2020[1]



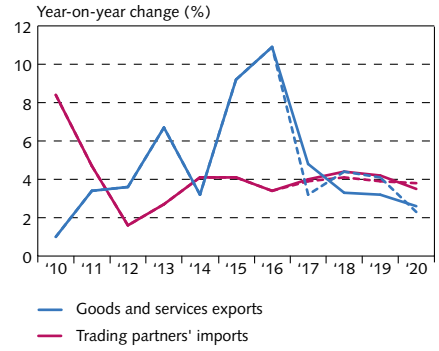
1. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-3
Exchange rate 2010-2020[1]



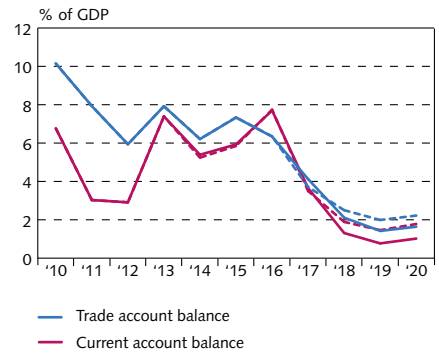
1. Narrow trade basket. Central Bank baseline forecast 2018-2020. Broken line shows forecast from MB 2018/1.
Source: Central Bank of Iceland.

Chart I-4
Exports and global demand 2010-2020[1]



1. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Thomson Reuters, Central Bank of Iceland.

Chart I-5
Current account balance 2010-2020[1]



1. Current account balance based on estimated underlying balance 2008-2015. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

the baseline forecast, the króna is expected to appreciate slightly more this year and be about 1½% above the 2017 average (Chart I-3). As in February, it is assumed to continue strengthening next year, and the exchange rate path is therefore broadly unchanged. As has been discussed in previous issues of *Monetary Bulletin*, the rise in the equilibrium real exchange rate is considered to have played a major role in the recent appreciation of the króna; however, the real exchange rate is now estimated to be close to its equilibrium level. This assessment is always subject to uncertainty, however, as is discussed later in this chapter. Developments in terms of trade and the exchange rate are discussed in Chapters II and III.

Export growth has begun to subside, and the current account surplus looks set to keep narrowing

Growth in services exports slowed markedly in 2017, after booming in the years beforehand. It measured just over 8% in 2017, down from an average of more than 17% in 2015-2016. Developments in tourism are the main factor in this trend, although growth in the sector has eased after the enormous growth of the recent past. Services exports grew considerably faster last year than was assumed in February, owing to unexpected growth in intellectual property exports by pharmaceuticals companies in Q4. This item had contracted sharply in Q3, and the information available at the time suggested that the contraction was a permanent one. This turned out not to be the case, however, which is the main reason total exports grew by 4.8% in 2017 instead of the 3.2% assumed in the Bank's February forecast (Chart I-4). As before, export growth is expected to ease during the forecast horizon, in line with a rising real exchange rate. Growth in tourism is expected to keep subsiding, although the slowdown will be offset by increased marine product exports, which are projected to grow by 4% this year, after shrinking by a similar amount last year and by a total of more than 16% over the past four years.

The surplus on goods and services trade amounted to 4.1% of GDP in 2017, after narrowing by more than 2 percentage points year-on-year (Chart I-5). As in the Bank's previous forecasts, the surplus is expected to keep narrowing, to 2.1% of GDP this year and 1½% of GDP in the two years thereafter. This is a smaller surplus than was forecast in February, reflecting the offsetting effects of less favourable net exports versus more favourable terms of trade. The current account surplus will narrow similarly, from 3.7% of GDP in 2017 to 1.3% this year and about 1% in 2019. Further discussion of exports and the external balance can be found in Chapter IV.

Outlook for continued rapid growth in domestic demand despite slower growth in private consumption and investment

Private consumption growth has been brisk in recent years. Significant rises in real wages, increased employment, improvements in households' asset position, and reduction of debt have all contributed to consumption growth. Furthermore, households have been upbeat about the current situation and economic prospects. Private

consumption growth appears to have peaked in 2017, at 7.8% year-on-year, the strongest single-year growth rate since 2005. Although the outlook is for growth to ease this year, it will remain robust, at 6.3% (Chart I-6). As in February, private consumption is projected to grow by an average of roughly 3½% annually over the next two years. On the whole, this is relatively stronger growth than was forecast in February, as the outlook is for real disposable income to grow more rapidly than was assumed then. Household saving is expected to remain relatively stable at just over 11% of disposable income throughout the forecast horizon.

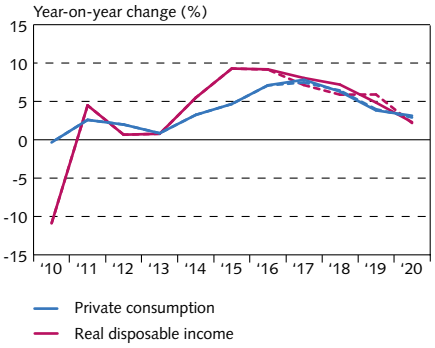
Investment growth has eased after a surge dating back to 2014. The slowdown in business investment is a major factor, as it grew by 4.3% in 2017, as opposed to nearly 25% per year for the three years beforehand. Total investment therefore grew by 9.3% last year and has risen from 15.6% of GDP in 2013 to 22.1% in 2017, which is 1 percentage point above the twenty-five year average. As in the Bank's previous forecasts, investment growth is expected to keep subsiding this year. Business investment is projected to contract by 2.5% year-on-year, whereas general business investment – i.e., business investment excluding energy-intensive industry and ships and aircraft – is expected to grow by 3.6%. In all, investment is projected to grow by 6.5% this year, more than was forecast in February, owing mainly to a sizeable revision of public investment. The prospect of more rapid general business investment growth in the coming two years means that total investment is also expected to grow faster in the next two years than was forecast in February. If the forecast materialises, the investment-to-GDP ratio will rise still further, to 23½% beginning in 2019. The ratio of general business investment to GDP is also well above its historical average, whereas the ratio of business investment to GDP will taper off to its historical average (Chart I-7).

Domestic demand, which reflects all public and private sector consumption and investment spending in Iceland, grew by 6.8% in 2017 and 9% in 2016. With the slowing of growth in private consumption and business investment, the outlook is for domestic demand to continue easing this year. Demand is expected to grow by 5.2% in 2018 and then taper off to 4.6% in 2019 and just under 3% in 2020 (Chart I-8). This is slightly above the February forecast, owing mainly to the prospect of stronger investment growth than was assumed then. Further discussion of developments in private consumption, investment, and domestic demand can be found in Chapter IV.

GDP growth eases in line with February forecast, and outlook is broadly unchanged

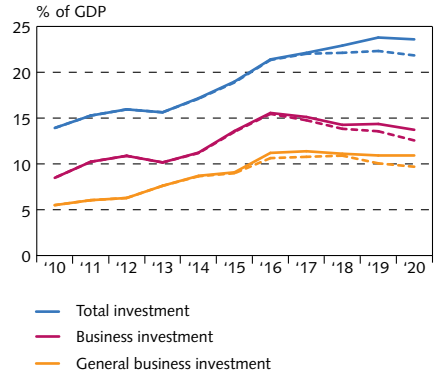
GDP growth slowed markedly as 2017 progressed, measuring only 1.5% in Q4. For 2017 as a whole, it measured 3.6%, well below the previous year's 7.5% (Chart I-8). It was largely foreseeable that output growth would taper off, as it was clear that growth in services exports would lose pace, and exports and inventories in the fishing industry declined as a result of the fishermen's strike in early 2017. This slowdown in GDP growth was therefore well in line with the Bank's

Chart I-6
Private consumption and disposable income 2010-2020[1]



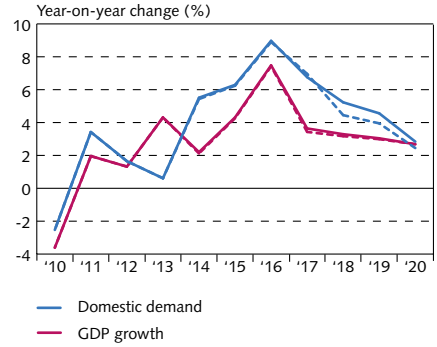
1. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-7
Investment 2010-2020[1]



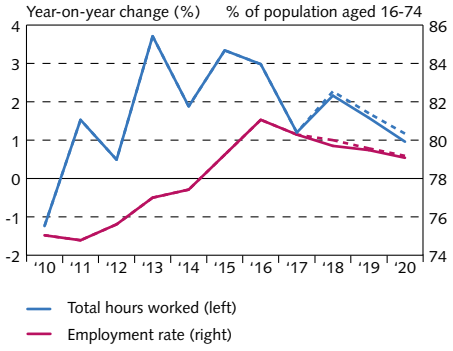
1. General business investment is business investment excluding energy-intensive industry and ships and aircraft. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-8
Domestic demand and GDP growth 2010-2020[1]



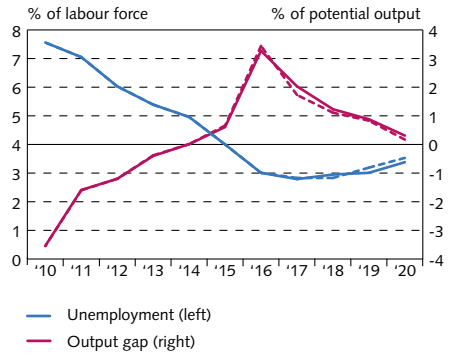
1. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-9
Total hours worked and employment rate 2010-2020[1]



1. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-10
Unemployment and output gap 2010-2020[1]



1. Central Bank baseline forecast 2018-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

February forecast, even though growth for the year turned out 0.2 percentage points stronger than projected. By the same token, the output growth outlook for 2018 is broadly unchanged since February. Growth is estimated to have picked up in Q1, reflecting in part the rise in fishing industry inventories following the contraction in the wake of the fishermen's strike. Output growth is forecast at 3.3% for 2018 as a whole instead of the 3.2% projected in February. As in February, it is expected to ease further over the next two years, to 3% in 2019 and 2¾% in 2020, close to its long-term trend rate. Further discussion of developments in GDP growth can be found in Chapter IV.

Growth in labour demand remains strong, but demand pressures in the economy seem to be receding

Total hours worked increased in Q1/2018 by 2.3% year-on-year, close to the average since the labour market recovery began. The number of jobs increased by 1.6% year-on-year, and seasonally adjusted unemployment continued to fall, measuring 2.6%, which is close to the 2003-2007 average.[2] In addition, the number of underemployed workers – those who are employed part-time and would like to work more – has declined, and the ratio of underemployed to the labour force is broadly in line with the 2003-2007 average.

Total hours worked are estimated to have increased by 2.2% this year and the employment rate to have declined marginally since 2017 (Chart I-9). As in the February forecast, it is assumed that total hours will rise more slowly in the coming two years, in line with slower GDP growth, and that the employment rate will continue to fall to just over 79% of the working-age population. Unemployment is projected to remain broadly the same, on average, this year as in 2017, or 2.9%, and then inch upwards gradually to 3½%, the level considered consistent with price stability (Chart I-10).

As in the Bank's February forecast, the output gap is considered to have peaked at year-end 2016 (Chart I-10). Revised GDP figures for the past few years increase the end-2016 output gap by ⅓ of a percentage point relative to the February forecast, however.[3] Furthermore, the outlook for this year and next year is for a slightly wider gap, which will almost close in 2020, as was projected in February. It should be noted, however, that estimating the output gap is always subject to uncertainty. Further discussion of the labour market and factor utilisation can be found in Chapter V.

Inflation at target in Q1 and projected to remain there throughout the forecast horizon

Inflation measured 2.5% in Q1/2018, after rising by 0.6 percentage points from the previous quarter. The increase was in line with the Bank's February forecast, which had assumed that inflation would

2. Box 2 discusses data on labour volume, which Statistics Iceland has recently begun publishing. Labour volume data are based on a larger amount of more detailed information than the labour force survey alone, and it is hoped that they will result in improved estimates of total hours.

3. Box 3 discusses a new measure of factor utilisation that is expected to improve the Bank's estimates of developments in the output gap still further.

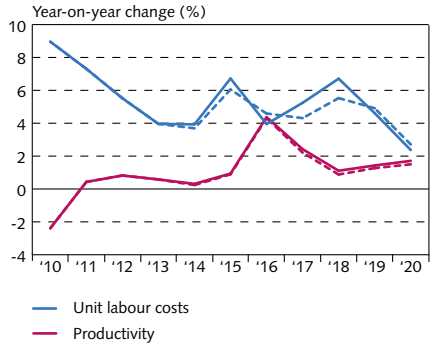
average 2.4% during the quarter. Headline inflation rose over the course of the quarter, reaching 2.8% in March, the first time in four years that it exceeded the Bank's target. It tapered off again in April, however, to 2.3%. Measures of inflation including and excluding housing have begun to converge as house price inflation falls, and both the CPI excluding housing and the HICP were virtually unchanged year-on-year. The effects of the past years' appreciation of the króna have tapered off, and imported goods and services prices have begun to rise again after falling virtually unimpeded in krónur terms since 2013. Underlying inflation has risen as well and is now just below the inflation target (see Box 4).

Inflation expectations were persistently well above target but then began falling in 2012, aligning with the target in 2016. The breakeven inflation rate in the bond market has risen again in the recent term, however, but this appears to reflect a rising risk premium on non-indexed long-term bonds rather than a rise in long-term inflation expectations. Inflation expectations therefore still appear anchored to the target.

Wage costs seem to have risen more in 2017 than was assumed in the Bank's February forecast. This revision of last year's twelve-month wage increases also affects the measured annual increase for this year. In addition, wage drift has been stronger year-to-date than was assumed in February. Estimates of productivity growth are broadly unchanged, however, and unit labour costs therefore appear to have risen more in 2017 than was forecast in February (Chart I-11). The increase is projected at 5.2% in 2017 and 6.7% in 2018. As in February, it is assumed that this rise in unit labour costs will ease over the next two years and converge with the inflation target by the end of the forecast horizon.

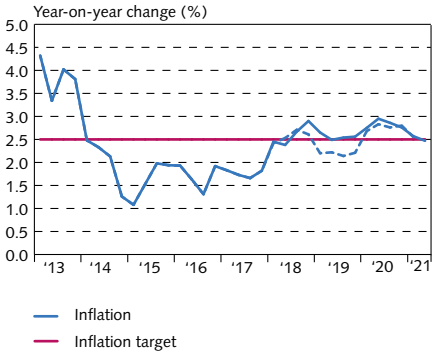
In the Bank's last forecast, it was assumed that the upper value-added tax rate would be lowered next year, in line with the Government's intentions at the time the forecast was prepared. As has been discussed in previous issues of *Monetary Bulletin*, this would cause a decline in measured inflation until the effects of the tax cut drop out of twelve-month inflation measurements. But these plans now have been abandoned, and measured inflation will therefore be somewhat higher in 2019 than was assumed in February (Chart I-12). As Chart I-13 indicates, however, the inflation outlook is broadly unchanged since February, after adjusting for this changed assumption about value-added tax. According to the current baseline forecast, headline inflation is expected to measure 2.4% in Q2/2018 and rise to 2.9% in Q4. It is forecast to fall back to the target next year, though, and hover around it for the rest of the forecast horizon. As is mentioned above, this is similar to the assumptions in February, reflecting the expectation of a higher exchange rate well into 2019 versus a larger increase in wage costs and a slightly wider output gap early in the forecast horizon. The uncertainties in the inflation forecast are discussed below. Developments in global prices are discussed in Chapter II, and domestic inflation and inflation expectations are discussed in Chapter VI.

Chart I-11
Unit labour costs and productivity 2010-2020[1]



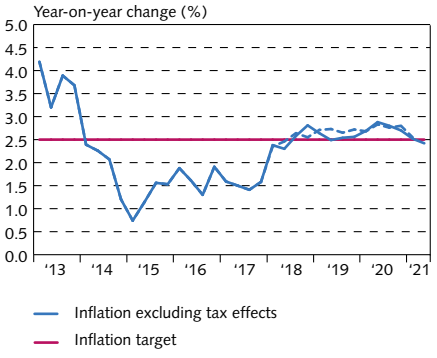
1. Productivity measured as GDP per total hours worked. Central Bank baseline forecast 2017-2020. Broken lines show forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-12
Inflation[1]
Q1/2013 - Q2/2021



1. Central Bank baseline forecast Q2/2018 - Q2/2021. Broken line shows forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-13
Inflation excluding effects of indirect taxes[1]
Q1/2013 - Q2/2021



1. Central Bank baseline forecast Q2/2018 - Q2/2021. Broken line shows forecast from MB 2018/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Key assumptions and main uncertainties

The baseline forecast reflects the assessment of the most likely economic developments during the forecast horizon. It is based on forecasts and assumptions concerning domestic economic policy and Iceland's external environment. It is also based on an assessment of activities in individual markets and how monetary policy is transmitted to the real economy. All of these factors are subject to uncertainty. The discussion below explains the assumptions about domestic economic policy. It also lists several important uncertainties and explains how changes in key assumptions could lead to developments that deviate from the baseline forecast.

Fiscal and monetary policies

As in previous forecasts, it is assumed that the fiscal stance will tighten this year. The tightening will be somewhat less than was forecast in February, however, or 0.3% of GDP instead of 0.8% (see Chapter IV). According to the Government's fiscal plan, however, fiscal policy will ease in the next two years by 0.9% of GDP over the next two years, broadly in line with the Bank's February forecast of 0.8%. Therefore, it will ease by 0.7% of GDP over the period from 2018 through 2020 instead of being neutral, as was assumed in the February forecast.

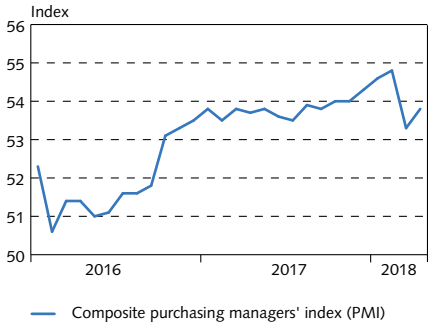
The Bank's key interest rate has been unchanged at 4.25% since October 2017, at which time it had been lowered by 1.5 percentage points from its post-crisis peak in August 2016 (see Chapter III). The baseline forecast is based on the assumption that, during the forecast horizon, the key rate will develop in line with the monetary policy rule in the Bank's macroeconomic model, which ensures that inflation will be broadly at target over the medium term.

Optimism about the global economy has increased, but risks are tilted to the downside

Optimism about the global economic outlook appears to have increased across the board, and financial conditions are widely favourable in spite of market unrest early in February. As before, though, the global economic outlook is uncertain. Output growth for 2018 could be underestimated if the underlying momentum behind the economic recovery turns out stronger than is currently assumed. Recent retail trade figures have been disappointing, however, and manufacturing indices fell sharply in March (Chart I-14). The decline was broad-based, extending to industrial manufacturing and services. Although it is due to some extent to temporary factors such as unusually inclement weather in Europe, the possibility that the short-term GDP growth outlook is too optimistic cannot be ruled out. Furthermore, the recovery could prove fragile if interest rates in major advanced economies rise faster than markets expect.

The global growth outlook could also be too optimistic further ahead. Support for free and open global trade has weakened, and the risk of a trade war between the US and China has increased. This could have an adverse effect on world trade and global GDP growth. Financial conditions could also change faster than markets expect; for instance, if inflation rises faster in the US than is currently forecast.

Chart I-14
Leading indicator of global GDP growth[1]
January 2016 - April 2018



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

Source: Thomson Reuters.

It could prove particularly trying for emerging market economies if a faster rise in US interest rates leads to an appreciation of the US dollar, thereby increasing many emerging economies' interest rate burden and total external debt. It could also exacerbate the risk of capital flight from these economies. Added to this is increased geopolitical uncertainty. All of these factors indicate the risk that global output growth is overestimated and that global demand for Icelandic products will therefore be weaker than is assumed in the baseline forecast.

Exchange rate outlook uncertain

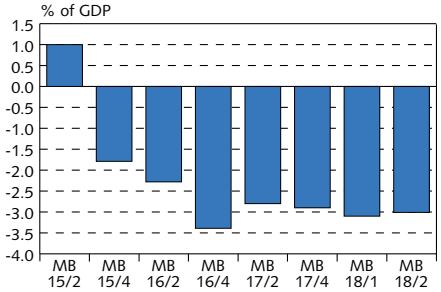
According to the baseline forecast, the exchange rate of the króna will continue to rise through 2019. This technical assumption is affected, on the one hand, by the growth outlook and the interest rate differential with abroad, and on the other, by the estimated equilibrium real exchange rate. The equilibrium rate is estimated to have risen in the recent term, concurrent with the improvement in terms of trade and rapid growth in exports, which supported the current account surplus and improved Iceland's international investment position (see, for example, Box 3 in *Monetary Bulletin* 2016/2). The real exchange rate is now considered close to its equilibrium value, but this assessment is highly uncertain. Developments in the equilibrium real exchange rate, as in the real exchange rate itself, will be determined by developments in external conditions.

Fiscal easing could be underestimated

As is discussed above and explored further in Chapter IV, the new fiscal plan entails less fiscal tightening this year than was assumed in the Bank's February forecast. Furthermore, the outlook is for more easing over the forecast horizon than previously projected. This is in line with previous experience, as can be seen in Chart I-15, which shows that the fiscal stance has repeatedly been more accommodative than has been forecast. For example, the forecast for 2015-2017 as published in *Monetary Bulletin* 2015/2 provided for fiscal tightening amounting to 1% of GDP, but by the time the new fiscal budget proposal was presented in the autumn, the assessment had turned around and the November forecast provided for 2% easing. The estimated easing increased even further in the spring 2016 issue of *Monetary Bulletin*, when the new fiscal plan was presented, and even further that autumn, although the new fiscal budget proposal was not yet available. The new transport strategy was presented, however, and it provided for sizeable additional unfunded expenditures. These plans were largely excluded from the spring 2017 fiscal plan, however, and the fiscal stance was estimated to be less accommodative in *Monetary Bulletin* 2017/2. Since then, the assessment of fiscal easing has increased slightly and is now estimated at a total of 3% of GDP. Since the forecast in the spring 2015 issue of *Monetary Bulletin*, the fiscal stance for 2015-2017 – the period when the output gap was at its widest – has therefore eased by 4% of GDP, or the equivalent of 102 b.kr. in terms of year-2017 GDP. In view of this experience and public discussion of even further easing, the current assessment may overestimate the tightness of the fiscal stance.

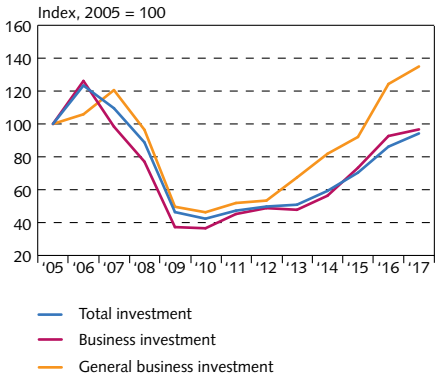
Chart I-15

Accumulated change in the cyclically adjusted primary balance 2015-2017[1]



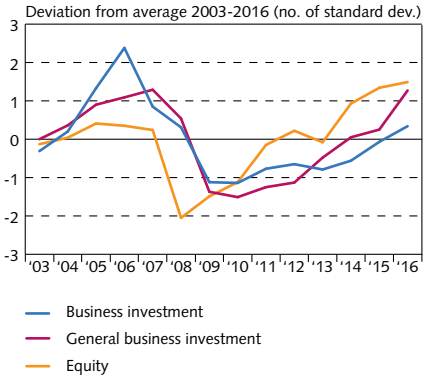
1. Estimated change in the cyclically adjusted primary balance (adjusted for one-off revenues and expenditures) in 2015-2017, as presented in various issues of *Monetary Bulletin* since 2015.
Source: Central Bank of Iceland.

Chart I-16
Investment 2005-2017[1]



1. General business investment is business investment excluding energy-intensive industry and ships and aircraft.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-17
Equity and business investment 2003-2016[1]



1. Investment as a share of GDP and equity as a share of total assets. Commercial enterprises excluding pharmaceuticals, financial, and insurance companies. General business investment is business investment excluding investment in energy-intensive industry and ships and aircraft.
Sources: Statistics Iceland, Central Bank of Iceland.

Uncertainty about business investment

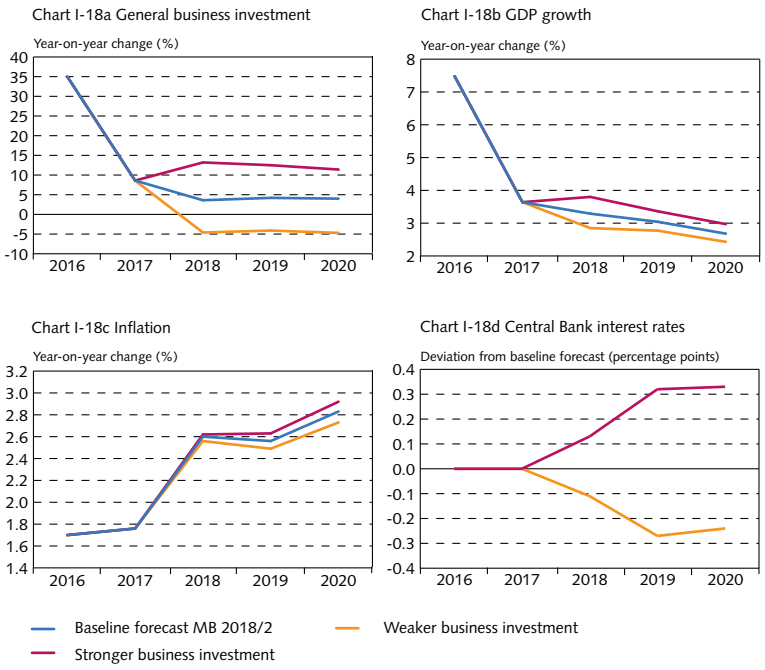
After a steep contraction following the financial crisis, businesses' investment spending has increased substantially since 2013, and the business investment-to-GDP ratio has been above its historical average since 2015. In 2017, however, it was about one-fourth below its 2006 high in real terms (Chart I-16). In part, this reflects unusually strong investment spending during the pre-crisis years, in connection with the construction of the Reyðarfjörður aluminium smelter. In terms of general business investment, however – business investment excluding energy-intensive industry and ships and aircraft – the investment level in 2017 was 12% above its pre-crisis peak.

Concurrent with the surge in business investment, companies' financial position has improved markedly. Corporate debt has fallen considerably, and equity ratios are higher than ever before (see Chapter III). Firms' financial capacity to invest is therefore greatly increased and looks set to remain strong. This can be seen clearly in Chart I-17, which shows that firms' equity ratio exceeds the historical average by more than the investment-to-GDP ratio, although the difference between the two narrowed in 2016, when general business investment grew by 35% year-on-year. As a result, the possibility cannot be ruled out that investment is underestimated in the baseline forecast. Investment growth could also be overestimated in the forecast, however. The Central Bank's new investment survey, for instance, suggests a shift in the investment plans of Iceland's largest companies (see Chapter IV), and the recent surge in the real exchange rate could indicate that firms in the tradable sector have less investment capacity than is assumed in the baseline forecast.

The outlook for corporate investment in 2018 and the following two years is therefore uncertain. As a result, Chart I-18 illustrates two possible scenarios in which business investment develops differently than in the baseline forecast. In the first alternative scenario, general business investment is assumed to grow by an average of just over 12% per year in 2018 and the two years thereafter, instead of the 4% provided for in the baseline example. This would put the ratio of general business investment to GDP above its historical average by about the same amount as firms' equity ratio as shown in Chart I-17. This is also well in line with the historical relationship between firms' investment spending and their equity position. If this materialises, domestic demand will increase by 1 percentage point more per year in 2018 through 2020 than in the baseline forecast, but because this partly reflects increased imports of investment goods, the GDP growth impact will be less pronounced. GDP growth would be 3.8% this year, or 0.5 percentage points more than in the baseline forecast, and in the next two years it would be 0.3 percentage points more. Stronger economic activity is reflected in increased inflationary pressures; however, this would be offset by Central Bank interest rates, which would be ⅓ of a percentage point higher than they would otherwise from 2019 onwards, weakening domestic demand and causing inflation to develop well in line with the baseline forecast.

In the latter alternative scenario, however, it is assumed that general business investment will contract by nearly 5% per year in

Chart I-18
Alternative scenario[1]



1. General business investment is business investment excluding energy-intensive industry and ships and aircraft.
Sources: Statistics Iceland, Central Bank of Iceland.

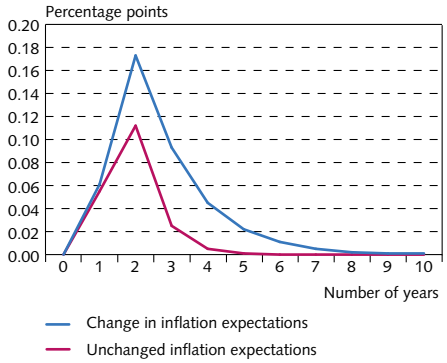
2018 through 2020, which would bring it back to its historical average relative to GDP by 2019 and even slightly below it in 2020. GDP will then be 0.4 percentage points less this year and about ¼ of a percentage point less in the following two years. As in the first alternative scenario, the inflation outlook is broadly unchanged from the baseline forecast, but Central Bank interest rates would be about ¼ of a percentage point lower than in the baseline forecast from 2019 onwards.

The impact of rising import prices on domestic inflation will depend on how firmly inflation expectations are anchored

Long-term inflation expectations have fallen markedly in the recent term, and indicators imply that they have become more firmly anchored to the Central Bank's inflation target.[4] Market agents' and analysts' expectations concerning average inflation over the next ten years have fallen, for instance, from an average of 4% in 2012-2015 to approximately 2.5% as of early 2017. This decline in inflation expectations has played a key role in the disinflation that has occurred in Iceland in recent years, and a stronger anchor is conducive to mitigating fluctuations in real interest rates — and therefore in output growth, employment, and the exchange rate. A firmer anchor is also of vital importance in determining what impact higher import prices will have on domestic inflation, now that trading partners' export prices have started to rise after declining for several years. If the anchor holds, imported price hikes will have less pronounced and less protracted ef-

4. See Thórarinn G. Pétursson (2018), "Disinflation and improved anchoring of long-term inflation expectations: The Icelandic experience", Central Bank of Iceland *Working Paper* no. 77.

Chart I-19
Effect of a 1% increase in import prices on inflation[1]



1. The chart shows the structural effect of a 1% permanent increase in import prices on domestic inflation. Two examples are shown. In the first, the increase affects long-term inflation expectations, but in the latter, inflation expectations remain unchanged at the Central Bank of Iceland inflation target.
Source: Central Bank of Iceland.

fects on domestic inflation and give less cause for monetary policy response. If the anchor gives way, however, there is an increased risk that imported price hikes will spread to other prices, making a stronger and more persistent impact on inflation.

To illustrate this, Chart I-19 compares the effects of a rise in global oil prices on domestic inflation, depending on the impact the price increase has on inflation expectations. The chart shows the effect of a 15% rise in oil prices, which is similar to the average twelve-month rise in the past four quarters. Increased oil prices are also assumed to raise other export prices in trading partner countries, as well as raising consumer prices in those economies. In all, import prices in Iceland therefore rise permanently by 1%. The inflation equation in the Central Bank's macroeconomic model is used, which assumes that a deviation in inflation from target at any given time is determined by past and expected deviations of inflation from target, in addition to the output gap, the real exchange rate of imports, and wage costs. Two examples are shown. The former assumes that the anchor for inflation expectations will weaken and that expectations will rise in line with recent inflation, whereas the latter assumes that inflation expectations will remain anchored to the target. As can be seen, the impact is much less pronounced if the anchor holds: inflation rises less, and the effects taper off more quickly. The overall long-term impact on the price level is also considerably less. If inflation expectations rise in line with recent inflation, this 1% rise in import prices will ultimately lead to a permanent 0.4% rise in the CPI, as opposed to only 0.2% if the anchor holds.

Inflation could rise faster in the near future than is assumed in the baseline forecast

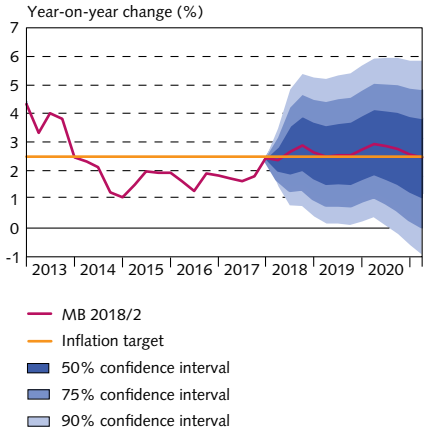
The issues discussed above highlight the uncertainty that generally accompanies the economic outlook. Some of these factors could indicate that inflation is underestimated in the baseline forecast. The most important of them is the uncertainty about near-term developments in wages. Although wage settlements were not terminated in February 2018, the underlying dissatisfaction with wages and income distribution remains, and this could lead to larger pay rises than the baseline forecast assumes, particularly given the current low unemployment and palpable tension in the labour market. Wage drift could also be underestimated. Various other factors could cause inflation to rise more during the forecast period than is provided for in the baseline example. For example, global inflation could rise faster and the króna could weaken more than is currently expected, house price inflation could prove more persistent, and demand pressures in the domestic economy could be underestimated, especially if the fiscal stance eases more than is anticipated. As is discussed above, the strength of the recently achieved anchoring of inflation expectations will be of considerable importance in determining the impact of these factors on inflation.

Neither can the possibility be excluded that inflation will turn out lower than is assumed in the baseline forecast. The króna could appreciate more strongly than forecast – if external conditions prove more

favourable, for instance. Weaker global GDP growth and lower global oil and commodity prices could further impede domestic economic activity and reduce import prices. In addition, house price inflation could subside faster than is currently forecast. The baseline forecast could also underestimate growth in productivity and potential output, thereby resulting in an underestimation of the speed at which the output gap narrows.

In order to reflect these uncertainties, Chart I-20 illustrates the confidence intervals of the forecast; i.e., the range in which there is considered to be a probability of up to 90% that inflation will lie over the next three years (the methodology is described in Appendix 3 in *Monetary Bulletin* 2005/1). Uncertainty about the inflation outlook is considered broadly the same as in the previous forecast; however, uncertainty about short-term inflation is considered tilted to the upside. In the longer term, the probability distribution is considered to be roughly symmetric, however. There is a roughly 50% probability that inflation will be in the 1½-3½% range in one year and in the 1-3¾% range by the end of the forecast horizon.

Chart I-20
Inflation forecast and confidence intervals
Q1/2013 - Q2/2021



Sources: Statistics Iceland, Central Bank of Iceland.

II The global economy and terms of trade

Global output growth has picked up and the outlook for 2018 has improved. Forecasts for year-2018 GDP growth in Iceland's main trading partner countries have been revised upwards since February. Investment growth in trading partner countries is expected to continue recovering; therefore, the outlook is for their imports to grow faster than previously assumed. Global inflation has picked up, although underlying inflation is low in many economies. There are signs that Iceland's terms of trade will deteriorate marginally this year, alongside rising global energy and commodity prices. The real exchange rate has been stable in the recent term, after a steep rise in recent years. This is considered to reflect the economy's adjustment to a higher equilibrium real exchange rate concurrent with an improved external position.

Global economy

GDP growth gains momentum in trading partner countries ...

GDP growth among Iceland's main trading partners measured 2.4% in 2017, the strongest since 2010 (Chart II-1). It outpaced the previous year's growth rate in nearly all trading partner economies. Improved growth has been driven by a rebound in investment, further supported by favourable financial conditions and growing optimism among households and businesses. The recovery of the labour market has been strong in the US and in the UK, in spite of a slowdown in GDP growth in the latter country (Chart II-2). In Japan, GDP growth has picked up, with the current cyclical upswing the longest in three decades and unemployment at a twenty-five-year low. Output growth measured 2.3% in the euro area last year, the strongest in a decade. Investment and an increased contribution from net trade were the main drivers, but private consumption growth eased as the year progressed. For the first time in a decade, GDP growth was positive in all of the countries in the euro area, and over 2% in an increasing number of them (Chart II-3). Growth also picked up in Norway, measuring 1.8% for the year, while in Denmark and Sweden it was just over 2%.

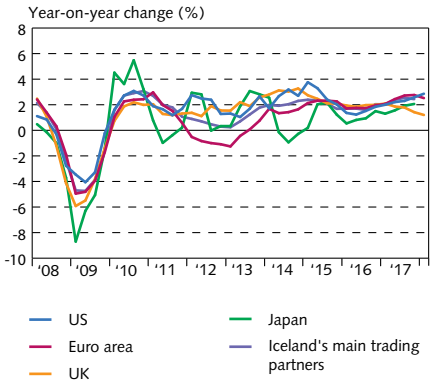
... and global GDP growth rose to a six-year high

Global output growth measured 3.8% in 2017, the strongest since 2011, reflecting the economic recovery in both advanced and emerging market economies. In advanced economies, the average growth rate was 2.3%, the strongest in seven years. It was up by 0.6 percentage points from 2016 and slightly above the twenty-five-year average. Growth gathered pace in emerging market economies as well, rising to a four-year high of 4.8%. Emerging market economies account for the vast majority of global output growth, particularly China and India, where growth measured nearly 7%.

Signs of broadly unchanged GDP growth in advanced economies

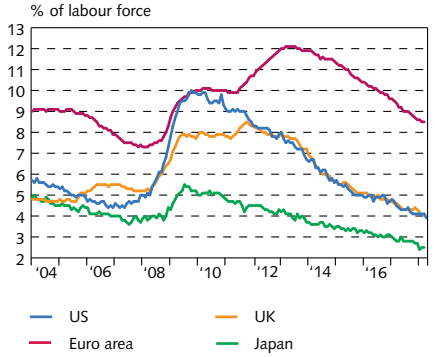
Forecasts for the euro area indicate that GDP will grow at about the same rate in 2018 as in recent quarters. This is an improvement since February, when it was assumed that growth would slow down in early

Chart II-1
Global GDP growth
Q1/2008 - Q1/2018



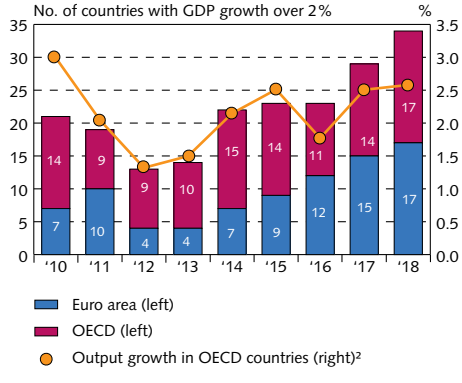
Sources: Thomson Reuters, Central Bank of Iceland.

Chart II-2
Unemployment rate[1]
January 2004 - April 2018



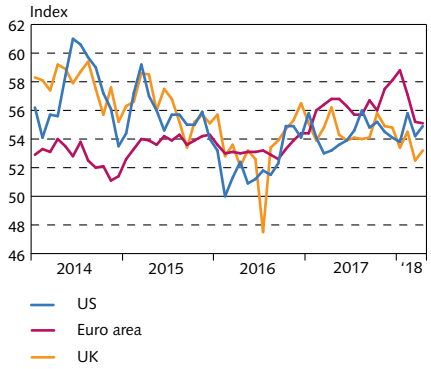
1. Seasonally adjusted figures.
Source: Thomson Reuters.

Chart II-3
Output growth in OECD countries[1]



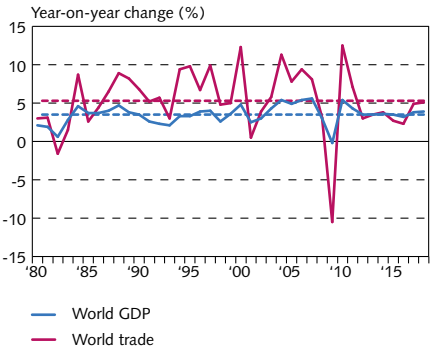
1. Including Lithuania, Malta, and Cyprus, which belong to the euro area but not the OECD. 38 countries in all. 2. The 2018 value is based on IMF's forecast (*World Economic Outlook*, April 2018).
Sources: International Monetary Fund, OECD.

Chart II-4
Leading indicators of GDP growth[1]
January 2014 - April 2018



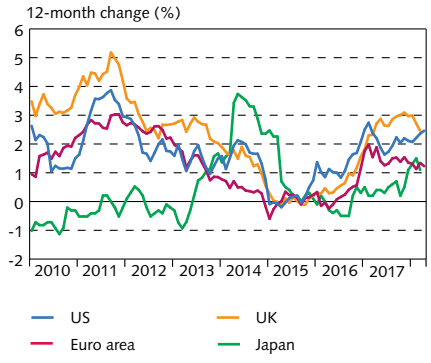
1. Markit composite purchasing managers' index (PMI). The index is published monthly and is seasonally adjusted. An index value above 50 indicates month-on-month growth, and a value below 50 indicates a contraction.
Source: Thomson Reuters.

Chart II-5
World GDP and trade 1980-2018[1]



1. Broken lines show average of 1980-2017. The values for 2018 are based on IMF's forecast (*World Economic Outlook*, April 2018).
Sources: International Monetary Fund, Central Bank of Iceland.

Chart II-6
Inflation in selected industrialised countries
January 2010 - April 2018



Source: Thomson Reuters.

2018. Although conditions in the labour market have improved and consumers are more upbeat, economic indicators imply that private consumption was weak at the beginning of the year, partly because of the severe weather that is considered a factor in the abrupt decline in the Markit composite purchasing managers' index (PMI) in March (Chart II-4). The appreciation of the euro is expected to weigh on export growth, although the recent uptick in global GDP growth may partly offset it. Leading indicators for the UK have been in line with market agents' expectations, but inclement weather is expected to have a temporary effect on Q1 data, as was the case in the euro area. The manufacturing PMI for the US measured higher in Q1, on average, than it has since Q3/2014, and measures of consumer and corporate sentiment have risen to new highs in the wake of the recent tax cuts affecting households and businesses.

Output growth outlook for advanced economies improves ...

The new forecast from the International Monetary Fund (IMF) is more upbeat about the short-term economic outlook, but the Fund is of the view that the long-term outlook is highly uncertain, and it still considers the risk profile to be tilted to the downside in the next few years. Global output growth is expected to gain momentum, measuring 3.9% this year and next year. For both years, the GDP growth outlook has improved by 0.2 percentage points since the IMF's October forecast, with the improvement concentrated more in advanced economies than elsewhere. The tax cuts in the US early this year are an important factor, as they explain about half of the revision of the Fund's GDP growth projections since its October forecast. The tax cuts are expected to stimulate corporate investment in the US in the near future, but they will also increase the budget deficit and exacerbate the country's sizeable current account deficit.

... and stronger growth in world trade is expected

Concurrent with the rise in investment, world trade has picked up again. It started to gain strength as 2017 progressed, measuring 4.9% for the year as a whole (Chart II-5). The IMF expects it to grow by 5.1% this year, well above the Fund´s October forecast, owing mainly to increased investment in the US. If the forecast materialises, growth in world trade will outpace global output growth for the second year in a row, although there are uncertainties afoot, owing to growing support for protectionist policies in many economies and the danger of a trade war between the US and China.

Outlook for GDP growth and demand in main trading partner countries has improved since February ...

In line with an improving global GDP growth and trade outlook, growth in output and imports among Iceland's main trading partners is now projected to be stronger than was assumed in the Bank's February forecast. Trading partners' GDP growth is forecast at 2.4%, which is 0.2 percentage points more than was assumed in February. This is due primarily to the prospect of stronger growth in the US and the euro area.

There is generally a strong correlation between growth in world trade and investment. Indicators imply that trading partners' GDP growth will continue to be investment-driven; therefore, import growth among trading partners appears set to remain well above GDP growth during the forecast horizon. Trading partners' imports are projected to increase by 4.4% this year, as opposed to 4.1% according to the February forecast. The improved outlook primarily reflects stronger demand growth in the US.

... and inflation in trading partner countries is slightly above expectations

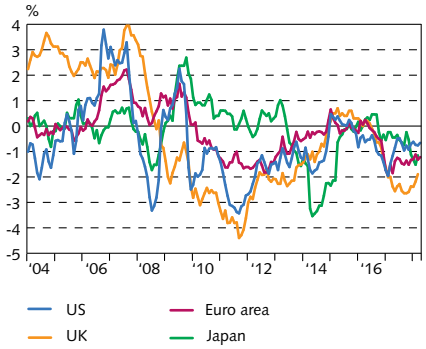
In Q1, inflation in Iceland's main trading partner countries measured 1.7% – for the fourth quarter in a row. Developments differed from one country to another, however: inflation was lower than anticipated in the euro area, Denmark, and Brazil, while it rose more than expected in Japan, Canada, and the UK, and particularly in the US (Chart II-6). In the US, underlying inflation measured 2.1% in April, for the second month in a row, the highest since February 2017. Spare capacity in the US economy is expected to be absorbed later this year, and underlying inflation to rise still further. On the other hand, underlying inflation is still low in most advanced economies apart from the UK. Headline inflation among Iceland's trading partners is forecast to average 1.8% this year, 0.1 percentage points more than was forecast in February.

Central bank interest rate differential widens among advanced economies

At the beginning of May, the Bank of England kept its key interest rate unchanged at 0.50%. The decision was in line with market expectations, as was the US Federal Reserve's 0.25 percentage point rate hike in late March. Real rates in advanced economies are widely very low, but spare capacity in those economies is expected to be fully absorbed later this year (Chart II-7). The US Federal Reserve has continued to normalise its bond holdings, which is considered one of the main reasons term premia on long-term bonds have risen. Long-term interest rates in the US have therefore risen, and the interest rate differential vis-à-vis other advanced economies has widened (Chart II-8). In spite of this, the US dollar had by mid-April depreciated by 15% versus the euro and the pound sterling in the past twelve months.

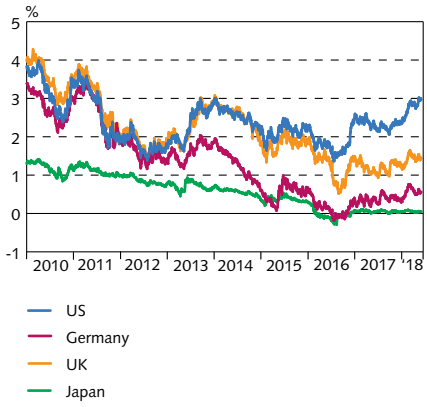
The outlook is for the interest rate differential between major advanced economies to widen still further. Forward interest rates suggest that investors expect three more rate hikes in the US this year, bringing the policy rate up to 2.5% by the end of 2019 (Chart II-9). Market agents expect interest rates to rise more slowly in the UK and project that the Bank of England's key rate will be 1% by end-2019. Among other advanced economies, Norges Bank is expected to begin raising rates in the near future, and further rate hikes are anticipated in Canada. On the other hand, it is expected that the monetary stance will remain accommodative in the euro area, as well as in Sweden, Switzerland, and Japan, where it appears that the key interest rate will remain negative for a while to come.

Chart II-7
Real central bank interest rates
January 2004 - April 2018



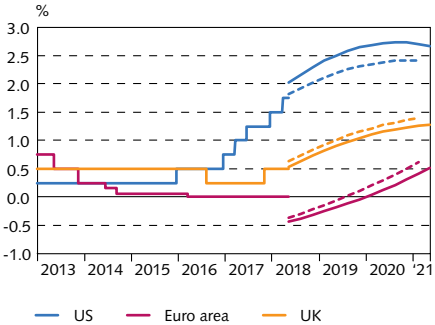
Source: Thomson Reuters.

Chart II-8
10-year government bond yields in selected industrialised countries
1 January 2010 - 11 May 2018



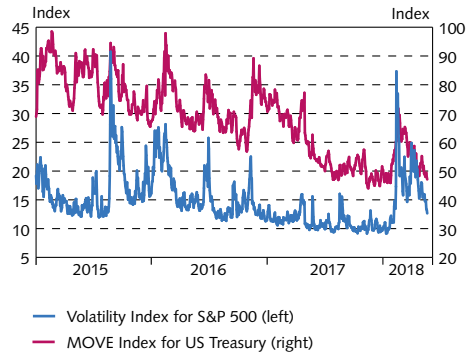
Source: Thomson Reuters.

Chart II-9
Policy rates in selected industrialised economies[1]
January 2013 - June 2021



1. Daily data 1 January 2013 through 11 May 2018, and quarterly data Q2/2018 through Q2/2021. US interest rates are the upper bound of the US Federal Reserve bank's interest rate corridor, and rates for the euro area are the European Central Bank's key rate. Forward rates are based on six-month overnight index swaps (OIS) and the Euro Overnight Index Average (EONIA) for the euro area. Solid lines show forward curves from 11 May 2018 onwards and the broken lines from 2 February 2018 onwards.
Sources: Bloomberg, Thomson Reuters.

Chart II-10
Global market volatility[1]
1 January 2015 - 11 May 2018



1. The VIX and MOVE volatility indices indicate the implied volatility of financial products.
Source: Thomson Reuters.

Asset prices rising again after market turbulence early in the year

Global financial market volatility has subsided again after spiking in Q1/2018, concurrent with the fall in asset prices following the US president's announcement of his intention to impose tariffs on imported aluminium and steel products from China (Chart II-10). The increased volatility in asset prices was also thought to be connected to market agents' expectations that inflation would rise faster in the US in the wake of the recent tax cuts, which would call for more rapid monetary tightening than previously expected. The improved global GDP growth outlook has also prompted investors to consider how normalisation of major central banks' monetary policy will influence financial markets. Yields are negative on a large amount of outstanding government bonds, and many sovereigns and private sector borrowers are heavily indebted. As a result, asset prices are expected to become more volatile as central banks reduce stimulative measures and abandon unusually accommodative monetary policy.

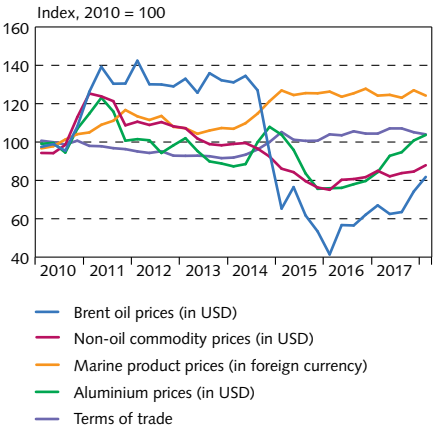
Export prices and terms of trade

Foreign currency prices of exports have risen more than previously forecast in 2018

Foreign currency prices of marine products declined by 0.8% in 2017, after having risen marginally in 2016 (Chart II-11). Key market agents are of the opinion that marine product prices are on the rise. They consider the outlook good and expect reduced fishing quotas in the Barents Sea to support demersal fish prices this year. Fish meal and fish oil prices are also expected to rise more than was forecast in February. Marine product prices are expected to rise by 3.5% this year and 2.7% next year, an improvement from the February forecast.

Global aluminium prices have risen steeply since end-2015, when they were just over 1,400 US dollars per tonne (Chart II-11). After climbing uninterrupted for nine quarters, the average price was 2,150 US dollars per tonne in Q1/2018, a year-on-year rise of 16%. Aluminium prices have been unusually volatile in recent weeks, in connection with the US' announcement of tariffs on steel and aluminium imports from China and with US-imposed sanctions affecting Russian company UC Rusal, the world's second-largest aluminium manufacturer. Prices rose above 2,600 US dollars per tonne in April, the highest since mid-2011. Futures prices and analysts' assessments indicate that the spike in April will reverse to some extent. Prices are expected to be close to 2,250 dollars per tonne at the end of this year. If this materialises, the average 2018 price will be 13% above the 2017 average and the increase will be 4 percentage points larger than was forecast in February. Aluminium prices are expected to rise slightly more over the rest of the forecast horizon, in response to steadily increasing demand.

Chart II-11
Commodity prices and terms of trade[1]
Q1/2010 - Q1/2018



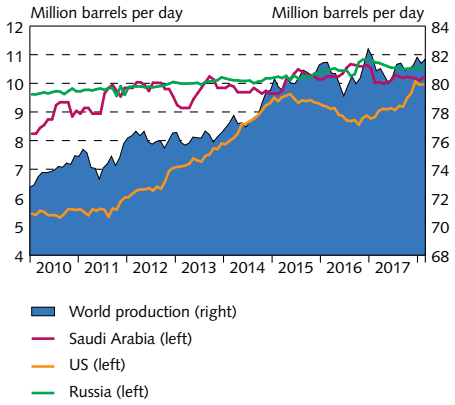
1. Foreign currency prices of marine products are calculated by dividing marine product prices in Icelandic krónur by the trade-weighted exchange rate index. USD prices of aluminium products are calculated by dividing aluminium prices in Icelandic krónur by the exchange rate of the USD. Terms of trade in Q1/2018 are based on the MB 2018/2 baseline forecast.
Sources: IMF, Statistics Iceland, Central Bank of Iceland.

Fuel prices up strongly year-to-date, but the long-term outlook is unchanged

Oil prices have risen steadily since mid-2017, with the twelve-month increase measuring 22% in Q1/2018. Prices have fluctuated in the

recent past, owing partly to increased geopolitical tension, particularly in the Middle East. In mid-May, the price of oil has risen to 77 dollars per barrel, the highest since year-end 2014. The year-on-year rise in oil prices is projected to average 20% this year, a full 7 percentage points more than was forecast in February. Futures prices and foreign analysts' forecasts suggest that crude oil prices will slide again beginning in mid-2018, owing mainly to increased production from non-OPEC countries, which is expected to cause supply to outstrip demand. The increase is the greatest in the US, where a 15% rise in production is expected this year, making the US the largest crude oil producer in the world, with about 13% of global production (Chart II-12). As in the Bank's February forecast, oil prices are projected at just over 60 US dollars per barrel towards the end of the forecast horizon, which corresponds to a decline of 3% next year and another 2% in 2020.

Chart II-12
Crude oil production
January 2010 - February 2018



Source: Thomson Reuters.

Non-oil commodity prices have risen by nearly a fifth from the January 2016 trough

Non-oil commodities prices have risen since the beginning of 2016, although they are still much lower than before the downturn started in mid-2014 (Chart II-11). Metals prices rose last year, whereas agricultural product prices declined slightly. Agricultural prices began to rise in Q1/2018, however, with a larger-than-expected increase in food prices, particularly grain and meal. Because of this and the surge in metals prices, which was much larger than was forecast in February, non-oil commodities prices have risen more year-to-date than the Bank had previously projected. Commodities prices are expected to remain relatively stable for the rest of the year at around 5.6% above 2017 prices, which is 4 percentage points above the Bank's February forecast.

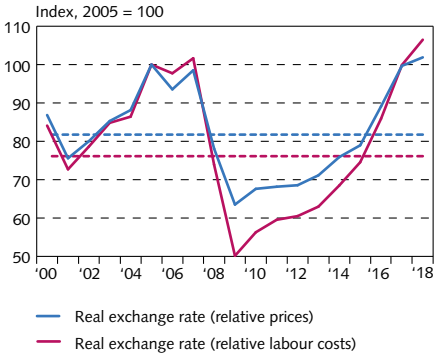
Terms of trade to deteriorate slightly in 2018, after a strong improvement in recent years

Terms of trade for goods and services have improved virtually unimpeded since Q4/2013. According to preliminary figures from Statistics Iceland, they improved by 0.7% year-on-year in Q4/2017 (Chart II-11) and by 1.7% over the year as a whole. At that point, they had improved by 15% since end-2013. However, in spite of this marked improvement, they were still nearly 10% below the pre-crisis peak. There are signs that terms of trade have deteriorated slightly in 2018 to date, as the price of fuel and other imported commodities rose more than the price of exports in Q1. They are expected to deteriorate by 0.4% in 2018 as a whole but then improve again in 2019 and 2020, alongside a rise in marine export prices and a decline in imported oil prices.

Rise in real exchange rate eases

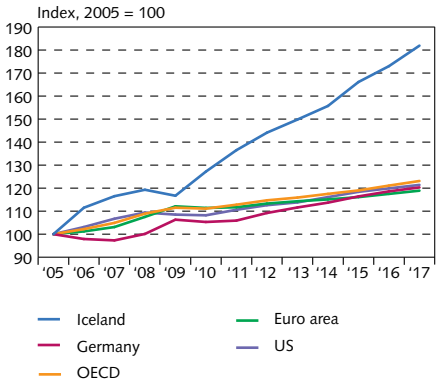
The real exchange rate in terms of relative consumer prices has been relatively stable in the recent term, after a steep increase in the past few years. It rose between Q4/2017 and Q1/2018 and, by April, was up 1.8% year-on-year and just under 24% above the twenty-five-year

Chart II-13
Real exchange rate 2000-2018[1]



1. Broken lines show 25-year average (1993-2017). Central Bank of Iceland baseline forecast 2018.
Source: Central Bank of Iceland.

Chart II-14
Unit labour costs in developed countries
2005-2017



Sources: Thomson Reuters, Central Bank of Iceland.

average (Chart II-13). The rise in the real exchange rate mainly reflects a rise in the equilibrium real exchange rate; i.e., the real exchange rate consistent with internal and external balance (see, for example, Box 3 in *Monetary Bulletin* 2016/2).

Wage costs have risen much more in Iceland than in other advanced economies, eroding the competitive position

If the forecast in this *Monetary Bulletin* materialises, the real exchange rate in terms of relative consumer prices will be 2.2% higher this year than in 2017. The rise in the real exchange rate in terms of relative unit labour costs is greater, however, at 6½%. Icelandic firms' wage costs have risen well above the OECD average (Chart II-14), and the competitive position of companies in Iceland's tradable sector has therefore deteriorated in the past few years.

III Monetary policy and domestic financial markets

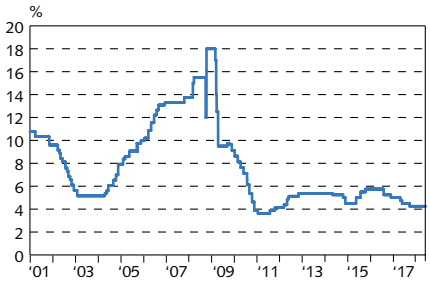
The Central Bank's key interest rate has been unchanged since October 2017, but its real rate has fallen and the real interest rate differential with abroad has narrowed. Other market rates have developed broadly in line with the Bank's key rate, and market agents expect the key rate to remain unchanged in the coming term. The risk premium on Treasury foreign obligations has fallen to its lowest in a decade, and the króna has appreciated since February. At the same time, capital inflows into the domestic bond market have been negligible and inflows into listed equities have eased. Growth in M3 has eased, but credit growth has picked up, particularly corporate lending. On the other hand, house price inflation has slowed, and share prices have been relatively stable after an abrupt rise early this year. Private sector debt ratios rose in 2017, for the first time since the onset of the financial crisis, but are still low in historical context. Private sector financial conditions have improved overall.

Monetary policy

Nominal Central Bank interest rates unchanged ...

The Central Bank's Monetary Policy Committee has held the Bank's interest rates unchanged since October 2017, when it lowered them by 0.25 percentage points. The Bank's key rate — that is, the rate on seven-day term deposits — was 4.25% just before the publication of this *Monetary Bulletin* and has only once been lower since the start of the inflation-targeting regime in 2001 (Chart III-1). Accepted rates in auctions of bills issued by the Treasury and the banks have developed in line with the Bank's key rate, as have interbank rates, but there has been no trading in the interbank market thus far in 2018.

Chart III-1
Central Bank of Iceland key interest rate[1]
3 January 2001 - 11 May 2018

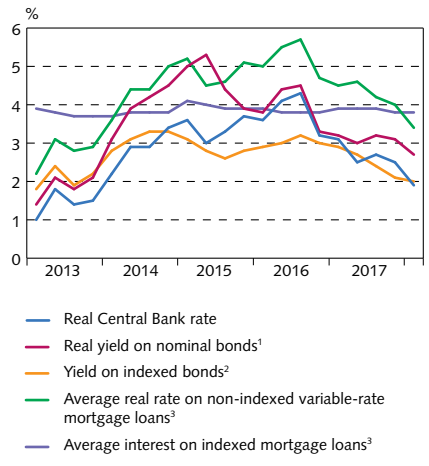


1. The Central Bank's key interest rate is defined as follows: the 7-day collateralised lending rate (until 31 March 2009), the rate on deposit institutions' current accounts with the Central Bank (1 April 2009 - 30 September 2009), the average of the current account rate and the rate on 28-day certificates of deposit (1 October 2009 - 20 May 2014), and the rate on 7-day term deposits (from 21 May 2014 onwards).
Source: Central Bank of Iceland.

... but the Bank's real rate has fallen slightly ...

The monetary stance has eased in the recent term, with the reduction in Bank's key rate and the rise in inflation and inflation expectations (see Chapter VI). The Bank's real rate in terms of the average of various measures of inflation and one-year inflation expectations is now 1.5% (Table III-1). It has fallen by 0.1 percentage points since February and by 1.2 percentage points since May 2017. The Bank's real rate in terms of current twelve-month inflation is 1.9%, just over 1 percentage point lower than it was a year ago. On the whole, the decline in the Bank's real rate has been transmitted to other market rates (Chart III-2) and to financial institutions' lending rates (discussed further later in this chapter).

Chart III-2
Real Central Bank interest rate
and real market rates
Q1/2013 - Q1/2018

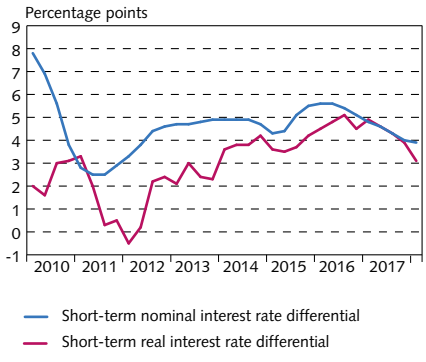


1. Five-year rate from the estimated nominal yield curve. 2. Five-year rate from the estimated real yield curve. 3. Simple average lowest lending rates from the three largest commercial banks. Fixed-rate period of five years or more on indexed mortgage loans.
Source: Central Bank of Iceland.

... and the real interest rate differential with abroad has therefore narrowed still further

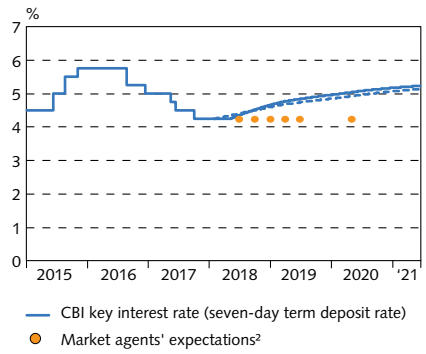
The nominal interest rate differential with main trading partners has narrowed in the past two years, but in Q1/2018 it was broadly the same as at year-end 2017 (Chart III-3). The real interest rate spread has been growing smaller since Q2/2017, and it narrowed still further in Q1/2018, as domestic real rates have been falling. The monetary

Chart III-3
Interest rate differential with main trading partners[1]
Q1/2010 - Q1/2018



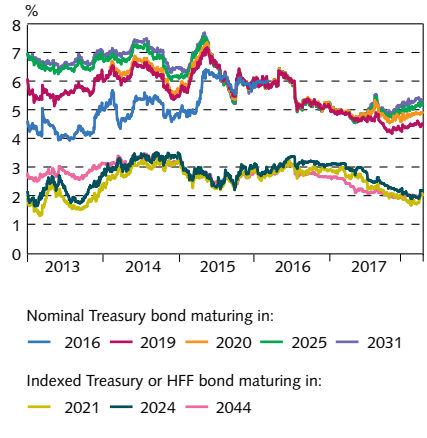
1. The difference between the Central Bank of Iceland's key interest rate and the weighted average key rate in Iceland's main trading partner countries. Real rates are based on twelve-month inflation.
Sources: Thomson Reuters, Central Bank of Iceland.

Chart III-4
Central Bank of Iceland key interest rate and expected developments[1]
1 January 2015 - 30 June 2021



1. The Central Bank's key interest rate and Treasury bond yields were used to estimate the yield curve. Broken lines show forward market interest rates prior to MB 2018/1. 2. Estimated from the median response in the Central Bank's survey of market agents' expectations concerning the collateralised lending rate. The survey was carried out during the period 2-4 May 2018.
Source: Central Bank of Iceland.

Chart III-5
Nominal and indexed bond yields
2 January 2013 - 11 May 2018



Source: Central Bank of Iceland.

stance remains tighter in Iceland than in other advanced economies, owing – as before – to differences in the business cycle position. Even though growth has eased and the output gap narrowed, it is still considerably larger in Iceland than in other developed countries (see Chapters II and IV).

Table III-1 The monetary stance (%)

Real interest rate in terms of:[1]	*Current stance (11 May '18)*	*Change from MB 2018/1 (2 Feb. '18)*	*Change from MB 2017/2 (12 May '17)*
Twelve-month inflation	1.9	0.1	-1.1
Business inflation expectations (one-year)	1.2	-0.5	-1.2
Household inflation expectations (one-year)	1.2	-0.1	-0.7
Market inflation expectations (one-year)[2]	1.6	0.1	-1.1
One-year breakeven inflation rate[3]	1.6	0.0	-1.4
Central Bank inflation forecast[4]	1.6	0.0	-1.3
Average	1.5	-0.1	-1.2

1. The nominal rate on financial institutions' seven-day term deposits with the Central Bank. 2. Based on survey of market participants' expectations. 3. The one-year breakeven inflation rate based on the difference between the nominal and indexed yield curves (five-day moving average). 4. The Central Bank forecast of twelve-month inflation four quarters ahead
Source: Central Bank of Iceland.

Market agents expect unchanged interest rates

According to the Central Bank's quarterly survey of market agents' expectations, carried out in early May, respondents expect the Bank's key rate to be held unchanged at 4.25% for the next two years, as they did in early February (Chart III-4). The forward yield curve is slightly upward-sloping, however.

Market interest rates and risk premia

Bond yields similar to early February levels

Yields on indexed Treasury and Housing Financing Fund (HFF) bonds have been falling since H2/2016 (Chart III-5). Nominal Treasury bond yields began to rise late in 2017, however, and the breakeven inflation rate in the bond market began to rise as a result (see Chapter VI). This trend continued in early 2018 but has reversed to an extent in the past few days, after indexed bond yields began to climb again in late April. Indexed and nominal bond yields are therefore broadly where they were just before the publication of the February *Monetary Bulletin*.

The spread between long and short nominal Treasury bonds is also broadly unchanged since the February *Monetary Bulletin*, and the nominal yield curve is still upward-sloping, as it has been since H2/2017. Bond market turnover has contracted in the recent term, as the supply of Government-guaranteed bonds has shrunk. Treasury bond issuance has declined in tandem with the Treasury's financing need, and no HFF bonds have been issued in the past six years. It is also possible that the liberalisation of restrictions on residents' foreign investment has reduced demand for Treasury bonds and therefore affected bond market turnover.

Inflows into the bond market have all but halted

Capital inflows for new investment amounted to just under 23 b.kr. in the first four months of the year, and outflows were just over 7

b.kr. (Chart III-6). New investment in the domestic bond market has been negligible year-to-date. Inflows into listed equities, which are not subject to the Central Bank's special reserve requirement, have also contracted during the year (as is discussed later in this chapter), while inflows into other investments have increased.

Risk premia on Treasury foreign obligations are at their lowest in a decade

Measures of risk premia on the Treasury's foreign obligations declined by as much as ½ a percentage point in December, after Iceland's sovereign credit rating was upgraded and the Treasury issued a new eurobond (Chart III-7). They have been largely unchanged since then and currently measure ½ a percentage point, the lowest in a decade. Iceland's sovereign CDS spread is therefore broadly in line with the CDS spreads of other sovereigns with comparable credit ratings. Spreads on domestic commercial banks' foreign bond issues have also fallen in recent months, alongside the decline in the risk premium on the Treasury and the upgrades in the banks' credit ratings.

Exchange rate of the króna

Net capital outflows have subsided ...

Capital outflows increased after the capital controls were lifted in March 2017. The rise was related to deleveraging of foreign debt, although resident investors are also increasing their foreign securities holdings, as it is likely that they are interested in rebalancing their asset portfolios after nearly a decade of capital controls. Net capital outflows excluding changes in the Central Bank's international reserves totalled 55.4 b.kr. in Q3/2017 (Chart III-8). Outflows subsided again in Q4, however, to a total of 14.8 b.kr. The main factor in this was an increase in ownership of foreign equity securities by resident investors, pension funds in particular.

... and the króna has appreciated

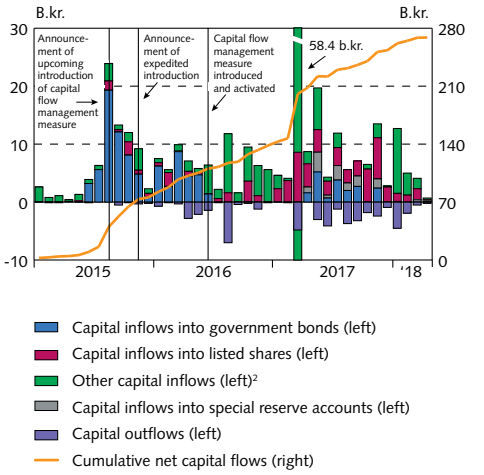
The króna has appreciated by 1.4% in trade-weighted terms since the February *Monetary Bulletin*, and by 2% year-to-date. However, it is 3% weaker than it was in May 2017, and 8.4% below its June 2017 peak. As is discussed above, it appears as though foreign currency flows to and from Iceland have become more balanced, and the temporary volatility following the liberalisation of the capital controls in March 2017 has subsided (Chart III-9). Exchange rate fluctuations are now similar to the 2014-2016 average, and somewhat less than the average in other advanced economies.[1] In another sign of more balanced capital flows, the domestic commercial banks have traded very little in the interbank foreign exchange market, and trading volume year-to-date has totalled only 38.6 b.kr., considerably less than over the same period in the past five years. In line with the Central Bank's declared objective of intervening primarily to mitigate excess short-term exchange rate volatility, the Bank has only made two transactions in the interbank market since mid-2017, buying

1. A discussion of fluctuations in the exchange rate of the króna in international context can be found in Box 1 in *Monetary Bulletin* 2017/4.

Chart III-6

Capital flows due to registered new investments[1]

January 2015 - April 2018

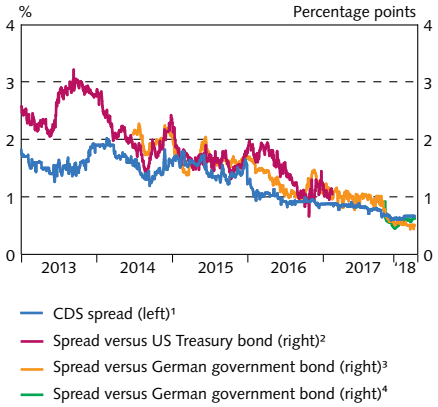


1. Investment commencing after 31 October 2009 and based on new inflows of foreign currency that is converted to domestic currency at a financial institution in Iceland. 2. Other inflows in March 2017 derive almost entirely from non-residents' acquisition of a holding in a domestic commercial bank.
Source: Central Bank of Iceland.

Chart III-7

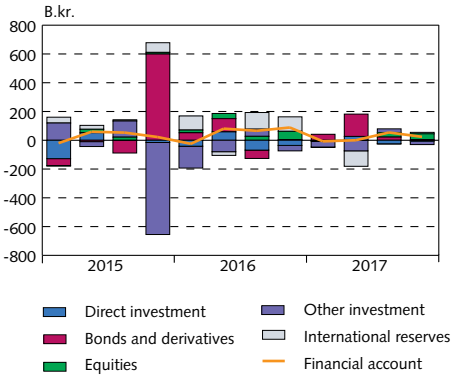
Risk premia on Icelandic Treasury obligations

2 January 2013 - 11 May 2018



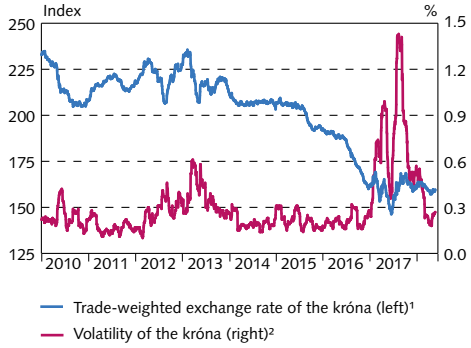
1. Five-year USD obligations. 2. USD bonds maturing in 2022. 3. Eurobonds maturing in 2020. 4. Eurobonds maturing in 2022.
Source: Bloomberg.

Chart III-8
Capital flows[1]
Q1/2015 – Q4/2017



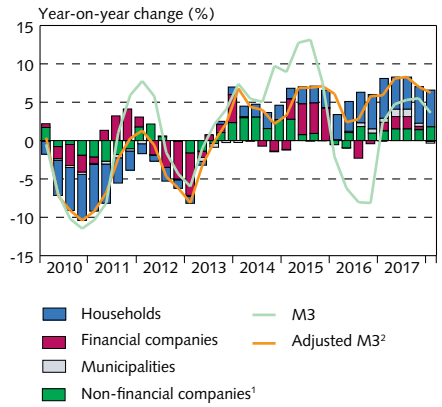
1. Financial account balance (net capital outflows) and net capital flows to foreign direct investment, portfolio investment (bonds, derivatives, and equities), and other investment (mostly bank notes and deposits as well as loans). Figures with a positive (negative) sign indicate an increase (decrease) in residents foreign assets or a decrease (increase) in their foreign liabilities. Large movements in Q4/2015 reflect the settlement of the failed banks' estates.
Source: Central Bank of Iceland.

Chart III-9
Exchange rate and volatility of the króna
4 January 2010 - 11 May 2018



1. Price of foreign currency in terms of the króna. 2. 30-day standard deviation of daily changes in the trade-weighted exchange rate index.
Source: Central Bank of Iceland.

Chart III-10
Money holdings
Q1/2010 - Q1/2018



1. Non-financial companies and non-profit institutions serving households 2. Adjusted for deposits of failed financial institutions.
Source: Central Bank of Iceland.

currency for a total of 1.5 b.kr. This is a significant change from the period before between 2014 and 2017, when the Bank's net foreign currency purchases averaged 210 b.kr. per year.

Market agents expect a slight depreciation in the near term
According to the Bank's survey of market agents' expectations, conducted in early May, respondents expect the exchange rate of the króna to be slightly lower in May 2019. In the last three surveys, they expected the króna to be almost unchanged one year ahead.

Money holdings and lending

Deposit institutions' excess króna reserves have grown ...
Banknotes and coin have increased at roughly the same pace as in the past few years, in tandem with growth in economic activity and foreign tourist arrivals. Deposit institutions' excess króna reserves — i.e., liquid deposits with the Central Bank over and above reserve requirements — have also increased year-on-year.

... while growth in broad money has eased ...
Annual growth in M3 measured 6.2% in Q1/2018, after adjusting for deposits of failed financial institutions (Chart III-10). This is a slower growth rate than in the three quarters immediately preceding. It appears to have fallen below nominal GDP growth once again in Q1, after having exceeded GDP growth for all of 2017, when the ratio of M3 to GDP rose year-on-year for the first time, after a continuous decline dating back to the onset of the financial crisis in 2008.

... and, as before, growth is due to an increase in household deposits
As in the recent past, growth in money holdings is due primarily to an increase in household deposits, which grew by 10.3% year-on-year in Q1. The annual growth rate has averaged just under 10% since Q3/2016. Households' disposable income has risen steeply in recent years, and their savings have increased as well (see Chapter IV). This strong growth in deposits is also due in part to increased household lending, however. Household deposits totalled 812 b.kr. in Q1 and are now at about H2/2007 levels in real terms.[2] As a share of GDP, however, they are considerably less than they were then.

Growth in lending to domestic borrowers has picked up
Growth in credit system lending to domestic borrowers has been relatively slow in recent years, in spite of strong growth in domestic demand. However, it picked up in H2/2017. After adjusting for the effects of the Government's debt relief measures, the stock of credit system loans to domestic borrowers grew in nominal terms by 5.3% year-on-year in Q3/2017 and by 6.3% in Q4 (Chart III-11). In Q1/2018, credit growth measured 6.9%, the strongest in a decade.

2. For further discussion of post-crisis developments in money holdings, see Box III-1 in *Monetary Bulletin* 2014/2.

Corporate lending has grown apace in the recent past ...

Credit system lending to non-financial corporations has increased in the past few quarters. In nominal terms, loans increased by 9.7% year-on-year in Q1, as opposed to 9.1% annual growth in Q4/2017 and 7.1% in Q3. This increased credit growth extends to a greater number of sectors than before (Chart III-12). Loans to services firms — real estate companies in particular — are still growing fastest, although loans to construction firms and tourism-related companies are also growing, reflecting the strong investment activity in those sectors (see Chapter IV).

... and lending to households continues to rise

After adjusting for the effects of the Government's debt reduction measures, the stock of credit system loans to households grew by 5.7% year-on-year in Q1/2018 (Chart III-13), slightly higher than in the two quarters immediately preceding. Loans from pension funds still account for the bulk of the increase, and their share in the lending market therefore continues to grow. Pension fund loans now account for 17.5% of the total stock of credit system loans to households, up from 9.5% at the beginning of 2016. Loans to fund members therefore account for a larger share of the pension funds' net assets than before. They had fallen to a historical low in late 2015 and are now close to the twenty-year average. Offsetting the increase in lending by pension funds and deposit institutions, the HFF's lending has continued to contract. The Fund's share of the lending market is now about the same as that of the pension funds.

Asset prices and financial conditions

House price inflation has slowed markedly ...

According to information from Registers Iceland, house prices in greater Reykjavík rose by 7.7% year-on-year in March, and rent was up 10%. The twelve-month rise in house prices has slowed significantly since peaking at nearly 24% in May 2017. The number of registered purchase agreements in the capital area declined by nearly 10% between years in 2017, and by 5.8% in 2018 to date. To a large extent, fewer purchase contracts and an increase in new construction explain the rise in the number of properties advertised for sale since H1/2017; however, the number of flats on the market has held steady at around 1,500 since autumn 2017 (Chart III-14). The average time-to-sale for capital area homes was 2.6 months in March, nearly 1.5 months longer than it was a year ago. The recent rise in greater Reykjavík house prices has probably stimulated demand for housing in neighbouring municipalities. This increased demand for housing outside the greater Reykjavík area has pushed house prices up in these communities: the market price of properties in regional Iceland rose by just under 15% year-on-year in April, compared to 10% nationwide.

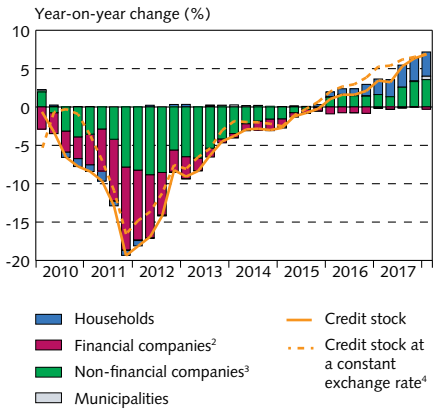
... and house price imbalances relative to fundamentals have eased slightly

Real house prices rose by just over 16% between years in 2017 and have risen roughly 50% from the early 2010 trough. This steep in-

Chart III-11

Credit system lending to resident borrowers and sectoral contribution[1]

Q1/2010 - Q1/2018



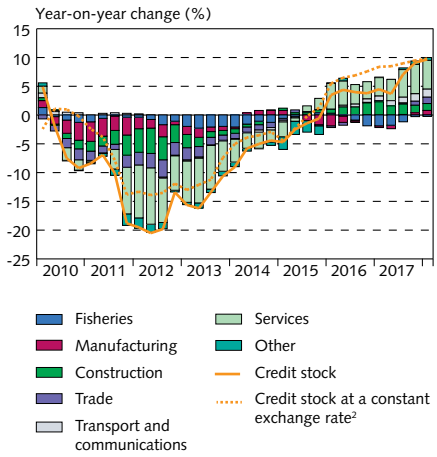
1. Credit stock adjusted for effect of reclassification and Government debt relief measures. Only loans to pension fund members are included with pension funds. 2. Excluding loans to deposit institutions and failed financial institutions. 3. Non-financial companies and non-profit institutions serving households. 4. The foreign-denominated credit stock is calculated using the March 2018 trade-weighted exchange rate index value.

Source: Central Bank of Iceland.

Chart III-12

Credit system lending to non-financial companies[1]

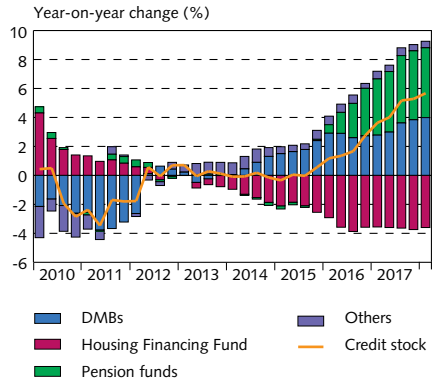
Q1/2010 - Q1/2018



1. Excluding loans from failed financial institutions. 2. The foreign-denominated credit stock is calculated using the March 2018 trade-weighted exchange rate index value.

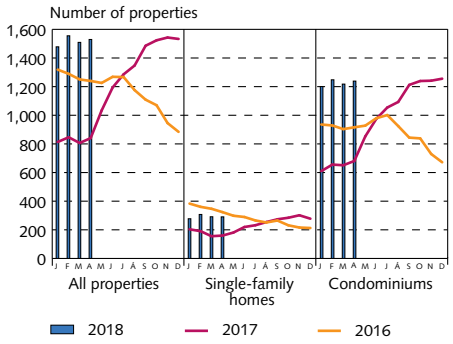
Source: Central Bank of Iceland.

Chart III-13
Credit system lending to households[1]
Q1/2010 - Q1/2018



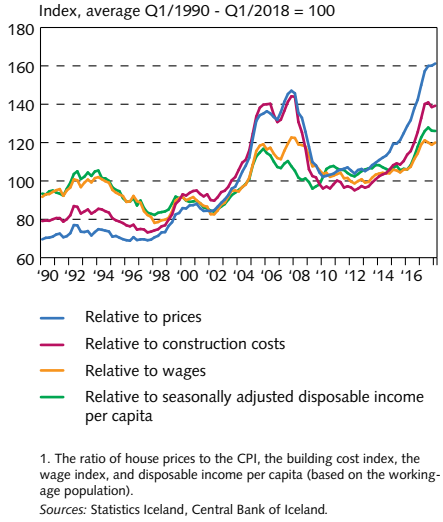
1. Credit stock adjusted for effect of reclassification and Government debt relief measures.
Source: Central Bank of Iceland.

Chart III-14
Residential properties for sale in the capital area[1]
January 2016 - April 2018



1. Monthly average of advertisements on Morgunblaðið real estate website. The count is carried out by property code so as to avoid a repeat count of the same property.
Source: Morgunblaðið real estate website.

Chart III-15
House prices relative to prices, construction costs, wages, and income[1]
Q1/1990 - Q1/2018



1. The ratio of house prices to the CPI, the building cost index, the wage index, and disposable income per capita (based on the working-age population).
Sources: Statistics Iceland, Central Bank of Iceland.

crease has been accompanied by a growing imbalance between house prices and the economic fundamentals that generally determine them (Chart III-15). This imbalance receded slightly again last autumn, when house price inflation began to ease. There is still some incentive for new construction, however, in terms of the ratio between house prices and construction costs. As is discussed in *Monetary Bulletin* 2017/4, the rise in house prices in the recent cyclical upswing is unlike the one in 2001-2007. The rise in labour income is similar for both periods, but the former period was characterised to a much greater degree by a surge in household borrowing, whereas the current situation is not.

Share prices have been relatively stable after rising early this year

The OMXI8 index is currently 0.5% higher than it was at the time of the February *Monetary Bulletin* but 10.2% lower than in mid-May 2017. Share prices began rising at the beginning of this year, after sliding in H2/2017. The OMXI8 index remained relatively stable from early February until just before the publication of this *Monetary Bulletin*, whereupon it fell suddenly (Chart III-16), owing mainly to a decline in Icelandair share prices following publication of April passenger numbers and a decline in insurance companies' share prices. Listed companies' year-2017 earnings reports, published in February, were in most cases consistent with expectations, and share prices were relatively unaffected. Exporters' and oil companies' share prices have fallen most in recent months. Most of the newly published earnings reports for Q1/2018 were either in line with or just below market expectations.

In the first four months of the year, turnover in the Nasdaq Iceland Main Market totalled approximately 190 b.kr., about 24% less than over the same period in 2017, as trading volumes rose to record highs in February and March last year, after the publication of annual earnings reports. In addition, new capital inflows for investment in listed equities totalled nearly 5 b.kr. in the first four months of 2018, as opposed to 19 b.kr. over the same period last year (see Chart III-6 above).

Private sector debt ratio rose in 2017 ...

Private sector debt totalled 163% of GDP at the end of 2017, some 2 percentage points higher than at year-end 2016. It was the first year-on-year increase in the debt ratio since the onset of the financial crisis in 2008 (Chart III-17). Corporate debt increased by 6.6% year-on-year in nominal terms, to 86% of GDP, 2 percentage points higher than at the end of 2016. Corporate debt to domestic financial institutions grew most, whereas there was little change in issued marketable bonds and debt to foreign financial institutions (for further discussion, see Box 1). Household debt increased by 4.9% over the same period, giving an end-2017 debt ratio of 77%.

Even though the debt ratio rose between years in 2017, it is still low in historical context. As is discussed in *Monetary Bulletin* 2017/4, households' and businesses' equity position has improved markedly in recent years, and their year-end 2016 equity ratio was above the peak in the last upswing.

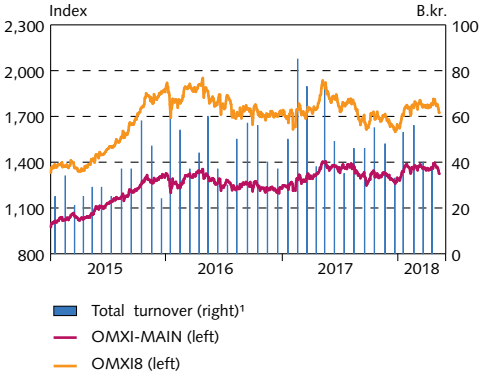
... but household non-performing loan ratios have declined still further

The share of non-performing household loans from the three large commercial banks and the HFF has declined still further in recent months. It measured 2.7% of total lending at the end of March 2018, down from 4.3% a year earlier. Furthermore, the number of individuals on the CreditInfo default register declined by 5.7% year-on-year in April. Credit institutions' non-performing corporate loan ratio was 7.9%, down by 1 percentage point year-on-year. The number of firms on the default register also declined marginally between years in April. The number of corporate insolvencies declined between years in 2017 but rose again in Q1/2018. New company registrations declined slightly in number in 2017 and continued to fall in Q1/2018.

Transmission of policy rate to lending rates has strengthened

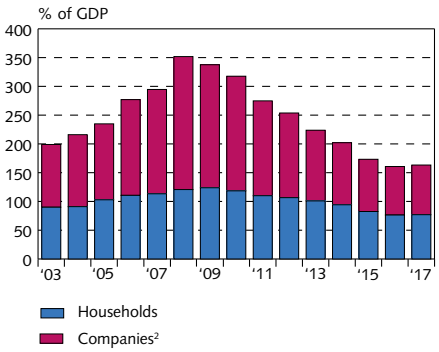
The commercial banks' non-indexed deposit and lending rates and the pension funds' non-indexed lending rates have generally followed the Central Bank's interest rate reductions since the monetary easing phase began in August 2016. Indexed interest rates have been broadly unchanged over this period, however, apart from variable rates charged by some of the pension funds. As before, pension fund loans bear somewhat lower interest rates than comparable loans from the commercial banks. As is discussed in Box 1, the share of non-indexed loans to households has increased since the beginning of 2015, as has the pension funds' share of new loans. The impact of policy rate changes on lending rates has therefore grown stronger.

Chart III-16
Equity market
2 January 2015 - 11 May 2018



1. Total monthly volume of listed shares.
Source: Nasdaq OMX Iceland.

Chart III-17
Household and non-financial corporate debt
2003-2017¹

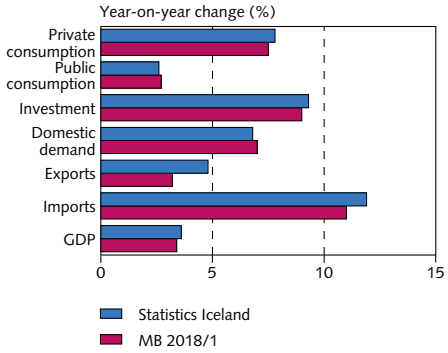


1. Debt owed to financial undertakings and market bonds issued. 2. Excluding financial institutions (which includes holding companies).
Sources: Statistics Iceland, Central Bank of Iceland.

IV Demand and GDP growth

GDP growth slowed markedly last year, after a strong 2016. Export growth eased significantly after measuring about 10% in both 2015 and 2016, and domestic demand eased as well, although it remained robust. Consumer spending is still strong, as household income is rising swiftly, employment levels are high, and asset prices have surged. Investment has also grown rapidly, albeit less in 2017 than in the three years beforehand. Growth in private consumption and investment is expected to ease this year, as is export growth. GDP growth therefore declines from 3.6% in 2017 to 3.3% this year, which is broadly in line with the Bank's February forecast. As was the case then, it is forecast to keep easing in the coming two years and moving towards its long-term trend rate. Weaker private sector spending growth will be offset by increased public sector activity. The fiscal stance is expected to tighten slightly this year and then ease again in 2019.

Chart IV-1
National accounts 2017



Sources: Statistics Iceland, Central Bank of Iceland.

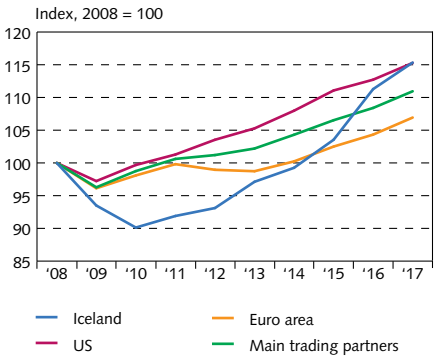
GDP growth and domestic private sector demand

Year-2017 GDP slightly above the February forecast

After a very strong 2016, GDP growth slowed steadily over the course of last year. According to preliminary figures from Statistics Iceland, it measured 1.5% in Q4/2017 and 3.6% for the year as a whole. Compared with the prior year, 2017 GDP growth was considerably weaker, owing mainly to a slowdown in growth in business investment and exports, while the contribution of private consumption to GDP growth remained robust, as it had been in 2016. Public investment and residential investment grew markedly as well. Growth in domestic demand measured 6.8% over the year, whereas the contribution from net trade was negative by 2.7 percentage points. Year-2017 GDP growth was in line with the Bank's February forecast of 3.4% (Chart IV-1). Services exports were stronger than expected, whereas the contribution from inventory changes was more strongly negative.

GDP has grown by nearly 28% from its post-crisis trough in 2010. This is a much stronger rebound than in Iceland's main trading partner countries, where growth averaged slightly more than 12% over the same period (Chart IV-2).

Chart IV-2
GDP in Iceland and its main trading partners 2008-2017

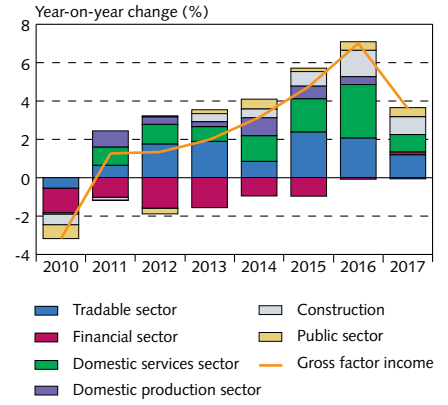


Sources: Statistics Iceland, Thomson Reuters, Central Bank of Iceland.

Broad-based GDP growth in 2017

The contribution of most sectors to GDP growth has slowed, albeit to varying degrees. The tradable sector and the domestic services sector contributed much less to GDP in 2017 than in the years beforehand, and the same is true of the construction industry. Even so, these sectors accounted for the lion's share of GDP growth (Chart IV-3). These developments resonate with the results of the 2017 expenditure accounts, which show a slowing of services exports and strong investment in residential housing.

Chart IV-3
Gross factor income and sectoral contributions 2010-2017[1]

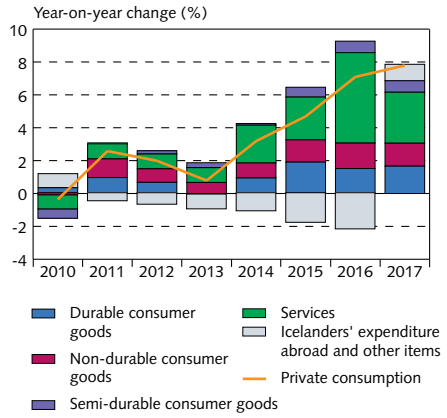


1. Gross factor income measures the income of all parties involved in production. It is equivalent to GDP adjusted for indirect taxes and subsidies. Included in the tradable sector are fisheries, fish product processing, manufacture of metals and pharmaceuticals, tourism, and 75% of electricity, gas, heat, and water utilities. Other sectors are considered non-tradable and are classified as construction, financial sector, services (excl. financial services), and production.
Sources: Statistics Iceland, Central Bank of Iceland.

Private consumption growth has been robust, yet more moderate than in previous cyclical upswings

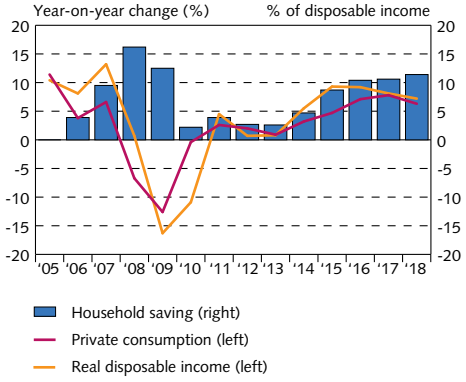
Private consumption grew by 7.8% year-on-year in 2017, even more than in the year before. In spite of this, growth eased in H2/2017.

Chart IV-4
Private consumption and its main components 2010-2017



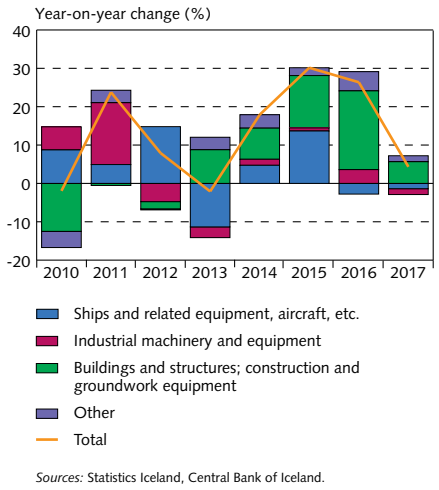
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-5
Private consumption, disposable income, and saving 2005-2018[1]



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 rescaled to reflect households' estimated expenses over a long period. Central Bank baseline forecast 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-6
Business investment and contribution by type 2010-2017



Sources: Statistics Iceland, Central Bank of Iceland.

Growth in Q4 was somewhat below the Bank's February forecast, but because figures for previous quarters were revised upwards, the growth rate turned out 0.3 percentage points above the forecast.

As in recent years, household demand was supported in 2017 by growing disposable income and favourable effects of households' improved equity position. Because of these factors, households are more optimistic about their own financial position and about the economy in general. 2017 was the seventh year of the ongoing cyclical upswing in private consumption, only the third episode of this length in the past sixty years. Although the current cycle is long in historical context, the pace of growth has not been as rapid as in previous cyclical episodes. To some extent, this is probably because spending on consumer durables has been less robust than in the two previous cycles (Chart IV-4), as it is well known that such spending is considerably more volatile than spending on non-durable consumer goods and more sensitive to economic conditions. This difference in private consumption patterns as compared with previous cycles is consistent with developments in household saving (Chart IV-5), which has increased considerably concurrent with the steep rise in real wages. Furthermore, lending to households has increased only modestly (see Chapter III).

Households' position still strong, but private consumption growth is expected to ease

Private consumption growth in 2018 is expected to continue more or less at the H2/2017 rate. If this projection is borne out, growth will be somewhat less this year than in 2017, as the outlook is for a continued slowdown in real disposable income growth. Furthermore, key indicators of private consumption suggest that the trend from H2/2017 continued in the first quarter of this year. Leading indicators such as consumer and corporate expectations surveys also suggest that growth will be somewhat slower in the near future than it was in Q2/2017, when private consumption growth peaked. It is projected to measure 6.3% in 2018 and slow still further in 2019. In spite of this, the ratio of private consumption to GDP will rise from last year's 50½% to about 51¾% by the end of the forecast horizon, yet this is nearly 3½ percentage points below the twenty-five-year average.

Business investment growth slowed significantly in 2017 ...

Growth in business investment eased markedly in 2017. It measured 4.3%, down from an average of about one-fourth per year in the past three years. Still, last year's growth was slightly stronger than was forecast in February, as it partly reflects Statistics Iceland's revision of investment figures for the first three quarters of 2017. Even though construction-related investment slowed significantly during the year, it was the main contributor to business investment in 2017 as a whole, as it was in 2016 (Chart IV-6). Offsetting this, investment in ships and aircraft contracted for the second year in a row.

... and the Bank's investment survey indicates a slowdown in 2018

The March 2018 survey of corporate investment plans suggests that firms invested more last year than the autumn 2017 survey had

indicated (Table IV-1). The main difference was stronger investment in manufacturing and in other services. This year, firms expect a 5% year-on-year contraction in investment, whereas they expected a 4% increase in the Bank's autumn 2017 survey. In part, these changes can be attributed to the aforementioned base effects from last year's stronger investment, but to a large extent they are due to changes in plans from a very small number of companies that weigh heavily in the survey. Overall, the number of firms planning to step up investment this year is equal to the number planning to reduce it. In comparison with the Bank's last survey, investment plans in the tourism and transport sectors have declined, and manufacturing companies have reversed from planning an increase to planning a contraction. Firms in wholesale and retail trade, however, plan to increase their investment spending, whereas they indicated plans for a contraction in the previous survey.

Table IV-1 Survey of corporate investment plans (excluding ships and aircraft)[1]

Largest 102 (101) firms Amounts in ISK billions	*2016*	*2017*	*2018*	*Change between 2016 and 2017 (%) (last survey)*	*Change between 2017 and 2018 (%) (last survey)*
Fisheries (17)	15.4	14.4	12.4	-6.5 (-11.7)	-14.3 (-22.9)
Manufacturing (16)	4.6	8.5	6.9	84.5 (9.3)	-19.5 (56.8)
Wholesale and retail trade (23)	8.0	8.8	9.9	9.8 (-9.2)	13.5 (-10.4)
Transport and tourism (8)	44.0	40.7	42.3	-7.5 (4.1)	3.9 (10.3)
Finance/Insurance (9)	3.7	3.5	4.5	-5.4 (42.3)	28.2 (18.1)
Media and IT (7)	7.5	7.6	7.4	0.8 (-2.1)	-2.0 (0.1)
Services and other (22)	18.1	19.0	14.2	5.1 (-12.3)	-25.5 (-2.7)
Total 102 (101)	101.4	102.5	97.6	1.1 (-1.1)	-4.8 (4.2)

1. In parentheses are figures from the last survey, in which respondents from 101 firms were asked about investment plans for 2017-2018 (*Monetary Bulletin* 2017/4). A paired comparison between years is presented, but because the sample could change between surveys, this could affect the results. Investment in spare parts for ships and aircraft is included.

Source: Central Bank of Iceland.

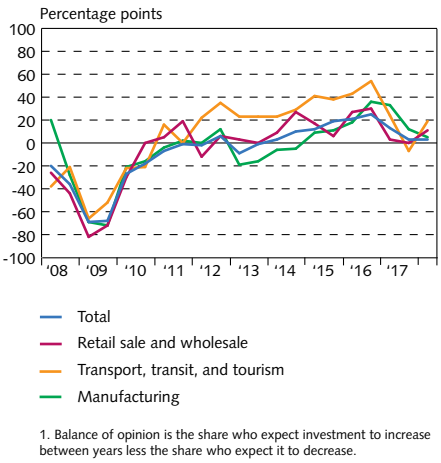
The results of the Gallup survey of developments and prospects carried out in February among executives from Iceland's 400 largest firms were broadly in line with the Bank's survey; i.e., the groups of respondents planning to increase investment and reduce it were roughly equal in size, and more than half of firms expect to invest about the same this year as in 2017 (Chart IV-7). As before, there is a difference between the surveys as regards specific sectors, as the samples differ. According to the Gallup survey, 35% of companies in transport, transit, and tourism intend to invest more this year, an increase from the September survey. Many more companies are in this category in the Gallup survey than in the Central Bank survey, which focuses mainly on a few large companies. The difference may therefore reflect proportionally more investment growth among smaller firms than their larger counterparts. There are also signs of increased investment in hotels, which are included in the Gallup survey but not the Bank's survey.

Outlook for declining share of credit-financed corporate investment

According to the Bank's investment survey, companies financed just under 40% of their investment with credit last year, as in 2016, but that ratio is expected to fall to 34% this year (Chart IV-8). Even though

Chart IV-7

Investment: balance of opinion, by sector[1]

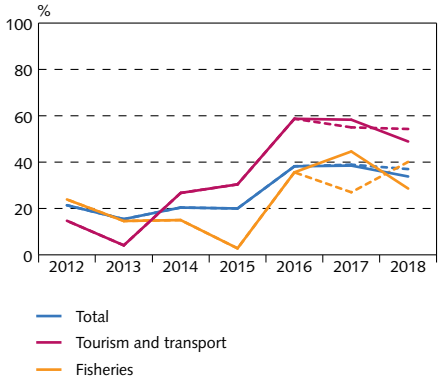


1. Balance of opinion is the share who expect investment to increase between years less the share who expect it to decrease.

Source: Gallup.

Chart IV-8

Corporate investment plans: credit-financed investment 2012-2018[1]



1. Survey of corporate investment plans, excluding ships and aircraft. Broken lines show results from the last survey in MB 2017/4.

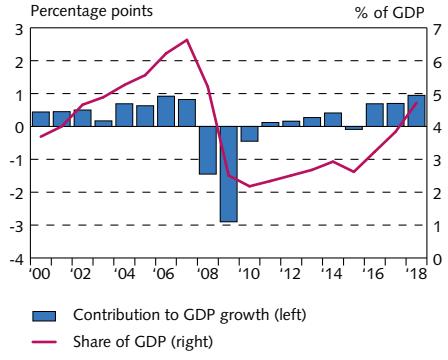
Source: Central Bank of Iceland.

the share of credit financing is expected to fall, it is still much larger than it was during the period before 2016. As before, it is greatest among firms in tourism and transport, although these companies plan to reduce credit financing this year. Among firms in retail and wholesale trade, the outlook is for the ratio of credit financing to rise slightly this year as they step up their investment spending.

Total business investment projected to contract in 2018 but general business investment to continue growing

In view of the investment survey and other indicators of corporate investment, it is assumed that business investment will contract by 2.5% this year. The decline is due to reduced investment in ships, aircraft, and energy-intensive industry, whereas general business investment — i.e., investment apart from these sectors — will grow by 3.6% year-on-year. As a result, business investment be lower than was forecast in February, and the composition of investment will be somewhat different. This reflects the prospect of a smaller contraction in investment in ships and aircraft than was previously projected, versus the forecast of reduced growth in general business investment.

Chart IV-9
Residential investment 2000-2018[1]

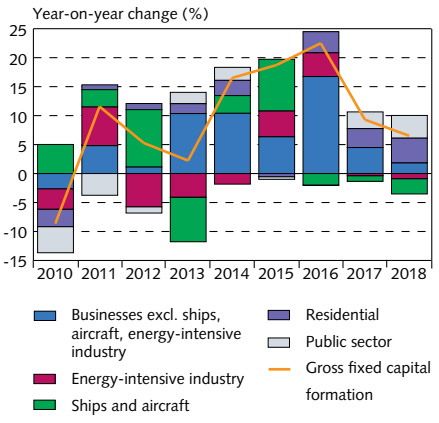


1. Central Bank baseline forecast 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Increased contribution of residential investment to GDP growth

The housing market boom continued in 2017. Investment in residential property increased by over a fifth, well in line with the Bank's February forecast. The contribution of residential investment to GDP growth has therefore risen steeply in the past two years and, by 2017, had reached its pre-crisis level (Chart IV-9). Alongside growing demand for housing, the ratio of house prices to construction costs has risen, thereby increasing the incentive for new construction. The outlook is for residential investment to grow by about one-fourth this year, slightly more than was assumed in February. If this forecast materialises, the ratio of residential investment to GDP will be about 5% this year, some 1 percentage point above its long-term average.

Chart IV-10
Gross fixed capital formation and contribution of main components 2010-2018[1]



1. Central Bank baseline forecast 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Investment-to-GDP ratio expected to fall marginally during the forecast horizon

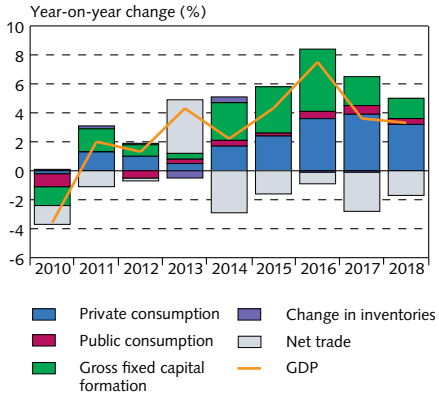
After surging over the past three years, investment growth eased in 2017. It measured 9.3%, which is broadly in line with the Bank's last forecast, although the composition of growth was different: business investment grew faster than projected, while residential and public investment grew more slowly. Investment growth is forecast to continue easing this year, owing to the aforementioned contraction in business investment, whereas other investment spending is expected to increase year-on-year (Chart IV-10). If the forecast materialises, investment will grow by 6.5% this year, mainly as a result of residential and public investment. Although the rate of growth is expected to ease between years, the investment-to-GDP ratio will continue to rise in 2018, to 22.9%, which is 1½ percentage points above its historical average. The ratio of business investment to GDP will decline, however, to 14.3%, yet will still be 1 percentage point above its historical average.

Year-2018 GDP growth projected at just over 3%, as in the February forecast

As is discussed above, the outlook is for the main drivers of GDP growth to keep growing this year, albeit at a slower pace. Slower growth in private consumption, public consumption, and investment will reduce the contribution of domestic demand to this year's output growth by just over 1 percentage point as compared with 2017. On the other hand, the contribution from net trade will be more favourable than in 2017. Domestic demand is expected to grow by 5.2% this year and GDP by 3.3% (Chart IV-11). The GDP growth forecast is 0.1 percentage points higher than in February, owing to the prospect of increased investment tempered by weaker export growth. In coming years, GDP growth is expected to converge with its long-term trend rate, as was forecast in February.

Chart IV-11

GDP growth and contribution of underlying components 2010-2018[1]



1. Central Bank baseline forecast 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Public sector

Public consumption growth expected to ease and public investment to grow more than assumed in February

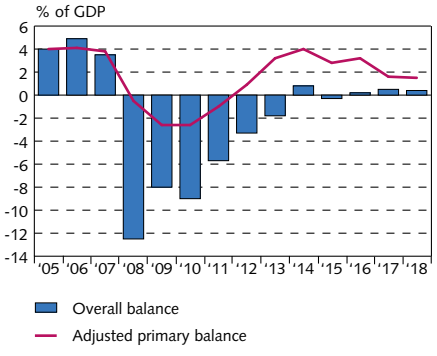
Public consumption grew by 2.6% in 2017, in line with the Bank's February forecast. The pace of growth picked up between years, owing largely to the rise in public sector wage costs. Growth is expected to ease to about 2% in 2018 and the following two years, somewhat less than was forecast in February. Public investment, however, grew by 23.4% in 2017, the strongest growth rate since 2004. The ratio of public investment to GDP has been very low in historical terms since the financial crisis struck, but after last year's surge it rose from 2.6% to 3.2%. Public investment growth is projected to be even stronger this year, exceeding 27%, and then ease later in the forecast horizon. This is a much faster growth rate than was assumed in the last forecast. If the forecast is realised, the ratio of public investment to GDP will be about 4.3% by the end of the forecast horizon, just over the twenty-five-year average.

Treasury primary surplus expected to be similar this year to that in 2017

According to preliminary figures from Statistics Iceland, the surplus on general government operations measured 1.5% of GDP in 2017, an improvement over the Bank's previous estimate by 0.4% of GDP. Excluding dividends in excess of budgetary estimates, however, the underlying Treasury surplus for 2017 measures only 0.5% of GDP, as opposed to a surplus of 0.2% in 2016 and a deficit of 0.3% in 2015. This year, it is assumed that the underlying surplus will be similar to that in 2017, or 0.4% of GDP (Chart IV-12).

Chart IV-12

Treasury balance 2005-2018[1]

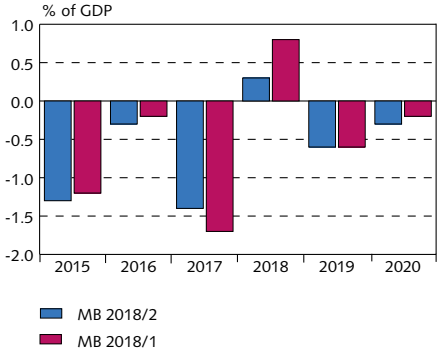


1. The primary balance is adjusted for one-off items. In 2016 to 2018, both the overall and primary balance is adjusted for stability contributions, accelerated write-downs of indexed mortgage loans, special payment to LSR A-division and dividends in excess of the National Budget. Central Bank baseline forecast 2018.
Sources: Ministry of Finance and Economic Affairs, Statistics Iceland, Central Bank of Iceland.

New fiscal plan for 2019-2023

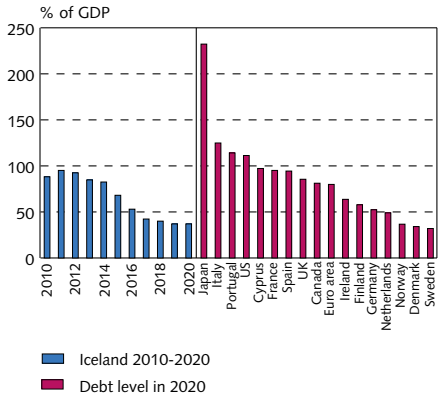
In accordance with the Act on Public Finances, Parliamentary resolutions on a five-year fiscal strategy and a five-year fiscal plan were presented before Parliament in December 2017 and again in early April. According to the fiscal strategy, the Treasury outcome will be positive by 1.2% of GDP in 2018, and the local government outcome will be slightly positive. The surplus on general government operations will therefore amount to 1.4% of GDP. It is estimated that the Treasury

Chart IV-13
Change in central government cyclically adjusted primary balance 2015-2020[1]



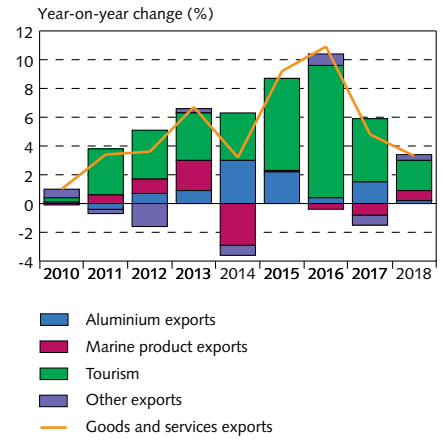
1. Primary balance is adjusted for one-off items (stability contributions, accelerated write-downs of indexed mortgage loans, special payment to LSR A-division and dividends in excess of the National Budget). Central Bank baseline forecast 2018-2020.
Sources: Ministry of Finance and Economic Affairs, Statistics Iceland, Central Bank of Iceland.

Chart IV-14
General government gross debt



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

Chart IV-15
Exports and contribution of subcomponents 2010-2018[1]



1. Aluminium exports as defined in the national accounts. Tourism is the sum of "travel" and "passenger transport by air". Central Bank baseline forecast 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

and general government outcomes will have deteriorated by 0.4% of GDP by the end of this five-year period. The fiscal plan entails a virtually unchanged Treasury outcome from the current fiscal strategy; however, it is considerably weaker than in the last fiscal plan.

Fiscal stance expected to tighten this year and then ease again beginning in 2019

The Central Bank baseline forecast is based in large part on the Government's fiscal plan; however, it assumes more public consumption spending than the fiscal plan does, owing to the expectation that wage costs will rise more than is assumed in the fiscal plan. In addition, the underlying macroeconomic assumptions differ in some respects. As a result, the Treasury outcome as presented in the baseline forecast is poorer by 0.4% of GDP per year than in the fiscal plan. The Bank's forecast assumes that the Treasury primary surplus will continue to narrow to 0.3% of GDP by 2020, after adjusting for one-off measures.

The cyclically adjusted primary balance is expected to improve by 0.3% of GDP this year, less than half of what was assumed in the Bank's February forecast, which was based on the fiscal strategy presented in December 2017 (Chart IV-13). The difference is due to the fact that the new fiscal plan provides for a larger increase in spending than was included in the fiscal strategy from December. As in the Bank's February forecast, the fiscal stance is expected to ease again in 2019, owing to the planned personal income tax and payroll tax cuts and the substantial increase in investment spending, which are estimated to lead to fiscal easing in the amount of 0.6% of GDP. Significant expenditure growth will also lead to some easing in 2020, albeit less than in 2019, or 0.3% of GDP. If this forecast materialises, the combined fiscal easing over the next two years will total 0.9% of GDP, which is in line with the Bank's February forecast, even though it is no longer assumed that the upper value-added tax bracket will be lowered.

General government debt rapidly falls below fiscal rule criteria

The plan in the current Government's fiscal strategy concerning slower debt reduction is in line with the poorer performance outlook than under the previous Government's strategy. Even so, it is assumed that the general government surplus and the sale of assets will facilitate continued relatively rapid debt reduction. It is now estimated that Treasury debt will amount to 34% of GDP at the end of 2018. General government debt is projected to total 40% of GDP at the same time and fall to 37% by the end of the forecast horizon, if the plan materialises (Chart IV-14).

External trade and the current account balance

Export growth stronger in 2017 than assumed in February

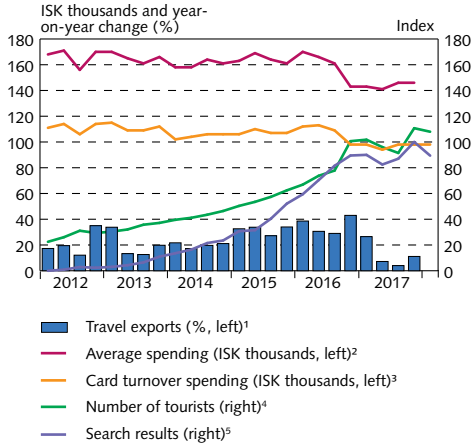
Goods and services exports grew by 4.8% between years in 2017, driven mainly by an 8.1% year-on-year rise in services exports (Chart IV-15). Services exports grew more strongly than the Bank had forecast in February, owing to an unexpected jump in other services exports in Q4, after a marked contraction in the first three quarters of the year. The contraction in intellectual property exports in the pharmaceuticals industry, which was particularly pronounced in Q3/2017, reversed in full in Q4, whereas the February forecast assumed that the

contraction would be permanent, as it was related to an international pharmaceuticals company's moving its operations out of Iceland. On the whole, other services contracted by 6.5% in 2017. The contraction mainly reflects a decline in exports of business services of pharmaceuticals companies and a contraction in exports of cultural and recreational services (including film-making). In addition, growth in goods exports slowed markedly year-on-year, measuring 0.9% in 2017, down from 3.7% the year before. A nearly 4% contraction in marine product exports was a major factor, as the fishermen's strike early in the year had a strong impact on exports, as has been discussed in previous issues of *Monetary Bulletin*. Moreover, other goods exports contracted more than had been assumed in February, particularly exports of ferrosilicon, pharmaceuticals, and medical equipment. Goods exports therefore grew more slowly in 2017 than had been forecast, partly offsetting stronger services exports.

Tourism-related export growth expected to ease this year ...

Indicators suggest that services exports will continue to grow this year, but if the forecast materialises, the growth rate will ease more than was projected in February. Figures on foreign tourist arrivals show a 4% year-on-year increase in the first four months of 2018, as opposed to a 56% increase during the same period in 2017. Analysts expected a larger increase in tourist arrivals; for example, Isavia, the operator of Keflavík Airport, projected a 15% increase in the first four months of this year. The rise in the real exchange rate has probably weakened demand for travel to Iceland, and airlines' passenger seat capacity has increased more slowly than over the same period in 2017. Other indicators also imply that tourism growth will lose pace. Internet searches for flights and accommodation in Iceland declined in Q1/2018, and foreign payment card turnover in Icelandic krónur contracted by 0.5% year-on-year during the quarter, after remaining unchanged in the previous quarter (Chart IV-16).

Chart IV-16
Indicators of tourism sector activity
Q1/2012 - Q1/2018



1. Year-on-year change in travel exports, at constant prices. 2. Seasonally adjusted average spending per tourist in Iceland, according to services export data. 3. Seasonally adjusted payment card turnover spending per tourist (excluding international airfares and public levies). 4. Seasonally adjusted passenger departures via Keflavík Airport. 5. A principal component model combining the frequency of five different Google search strings relating to travel to Iceland (seasonally adjusted).
Sources: Centre for Retail Studies, Google Trends, Isavia, Statistics Iceland, Central Bank of Iceland.

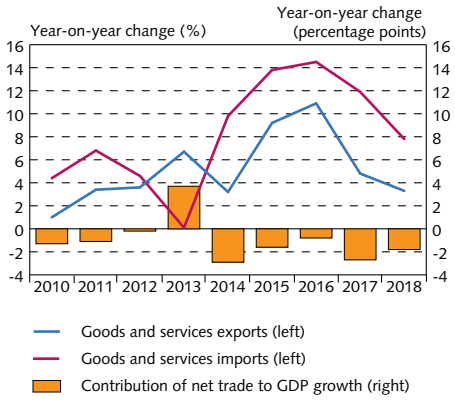
... and growth in goods and services exports is expected to ease more than previously projected

Preliminary external trade figures from Statistics Iceland suggest that goods exports grew by approximately 15% year-on-year in Q1/2018. To a large extent, this is due to base effects from the fishermen's strike early in 2017, which caused a 5% contraction in goods exports during Q1/2017. As in February, marine product exports are expected to recover in 2018 and increase by 4% year-on-year. The outlook is for slightly increased aluminium exports, and indicators suggest that other goods exports grew more strongly early in the year than was projected in February. As in February, goods exports are projected to increase by 1.6% in 2018 as a whole, whereas combined goods and services exports are expected to grow by 3.3%, a full 1 percentage point less than was forecast then.

Strong growth in domestic demand and a higher real exchange rate support continued import growth

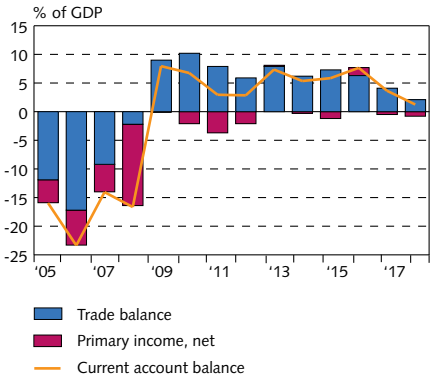
Goods and services imports grew by nearly 12% in 2017, nearly twice the rate of growth in domestic demand over the same period. The

Chart IV-17
Exports, imports, and contribution of net trade 2010-2018[1]



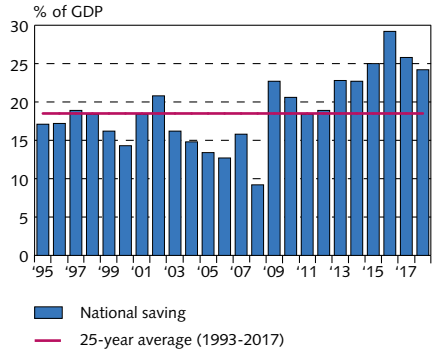
1. Central Bank baseline forecast 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-18
Current account balance 2005-2018[1]



1. Including secondary income. Current account excluding the effect of failed financial institutions 2008-2015 and the pharmaceuticals company Actavis 2009-2012 on primary income. Also adjusted for the failed financial institutions' financial intermediation services indirectly measured (FISIM). Central Bank baseline forecast 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-19
National saving 1995-2018[1]



1. Underlying national saving in 2008-2015, based on the estimated underlying current account balance (adjusted for the effects of failed financial institutions 2008-2015 and pharmaceuticals company Actavis in 2009-2012). Central Bank baseline forecast 2018.
Sources: Statistics Iceland, Central Bank of Iceland.

increase is due not least to imports of consumer durables such as motor vehicles and household appliances, demand for which generally correlates strongly with developments in the exchange rate of the króna.[1] Furthermore, strong growth in export sectors such as tourism and international airlines calls for substantial imports of goods and services. Goods and services imports are expected to grow by 7.7% this year, some 0.3 percentage points more than was forecast in February. To some extent, this reflects a higher import content of domestic demand than was assumed in February, as well as a slightly higher real exchange rate than was forecast then. Growing activity among domestic airlines also calls for increased imports in connection with the operation and leasing of aircraft. Furthermore, the Icelandic Tourist Board's figures on Icelanders' departures via Keflavík Airport plus Gallup's survey of individuals' planned overseas travel suggest that services imports will continue to grow strongly this year. The contribution of net trade to output growth will therefore remain negative throughout the forecast horizon despite robust export growth. If the forecast materialises, the contribution from net trade will be negative by 1.7 percentage points this year, making 2018 the fifth year in a row to see import growth outpace export growth (Chart IV-17).

Outlook for smaller current account surplus than was forecast in February

The surplus on goods and services trade amounted to 4.1% of GDP in 2017. The surplus turned out somewhat larger than was forecast in February, as services exports grew considerably more than assumed. It is expected to narrow to 2.1% of GDP this year, however, or 0.4 percentage points below the February forecast. A more negative contribution of net trade to output growth and poorer terms of trade (see Chapter II) outweigh the more favourable initial position. The trade surplus is expected to narrow still further, to 1½% of GDP in 2019.

The current account surplus measured 3.7% of GDP in 2017, well below the 2016 outcome of 7.7%, and below the post-crisis average of 5.6% of GDP (Chart IV-18). The declining trade surplus is compounded by a smaller surplus on the primary and secondary income balance. This is a noticeable turnaround from the previous year, as developments in foreign investment revenues were unusually favourable in 2016. The balance on primary and secondary income was negative in H2/2017 and is expected to remain so. The current account surplus will therefore narrow to 1.3% of GDP this year and 1% of GDP in 2019. This is just over ½ a percentage point less than was forecast in February.

The sizeable current account surplus in recent years has reflected increased national saving, which amounted to 25.8% of GDP in 2017, or 7 percentage points above the historical average (Chart IV-19). Increased saving is reflected in the transformation in Iceland's net international investment position, which was positive by 7.5% at the end of 2017.

1. See, for example, Bjarni G. Einarsson, Gudjón Emilsson, Svava J. Haraldsdóttir, Thórarinn G. Pétursson, and Rósa B. Sveinsdóttir (2013), "On our own? The Icelandic business cycle in an international context", Central Bank of Iceland *Working Paper* no. 63.

V Labour market and factor utilisation

Most labour market indicators imply that growth in labour demand has peaked. Total hours worked increased in Q1/2018 and unemployment continues to decline. Nearly a fifth of survey respondents from the corporate sector are still planning to recruit rather than lay off staff, thus indicating continued strong growth in labour demand. Furthermore, the share of firms considering themselves short-staffed has remained broadly unchanged over the past year and a half, in spite of large-scale importation of labour. A sizeable output gap exists but appears to have peaked.

Labour market

Strong labour demand in Q1/2018 ...

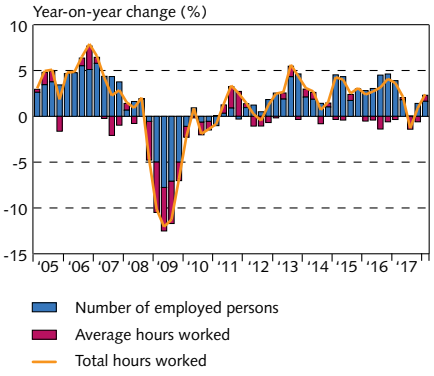
According to the Statistics Iceland labour force survey (LFS), total hours worked increased in Q1 by 2.3% year-on-year, broadly in line with the average since the labour market recovery began. Growth eased in spring 2017, and total hours worked declined in Q3, according to the survey (Chart V-1). As is discussed in *Monetary Bulletin* 2017/4, it is considered likely that this was due to measurement problems rather than an actual development in the labour market. Strong growth in Q1/2018 and other indicators from the labour market support this assessment. The increase in total hours in Q1 reflects a 1.6% rise in the number of employed persons and a 0.7% increase in the length of the average working week, which had grown shorter nearly without interruption since autumn 2014. The seasonally adjusted labour participation rate measured 82% during the quarter, slightly below the previous quarter's figure but in line with the long-term average.

... and unemployment continues to fall

According to the LFS, seasonally adjusted unemployment measured 2.6% in Q1, which is broadly unchanged year-on-year but down 0.5 percentage points from the preceding quarter. It has fallen by almost 6 percentage points from the winter 2010 peak and is now about 1⅓ percentage points below its long-term average (Chart V-2). Although unemployment has fallen steeply and is probably below the level consistent with price stability (further discussed later in this chapter), it could overestimate the demand pressures in the labour market. For example, some of those employed may want to work more hours than are available to them, and it is also possible that there are some who are willing to work but are not actively looking for a job. This potential addition to the labour force has also declined in recent years, however (see Chart V-2); furthermore, in recent years the number of part-time workers who would like to work more has declined in line with falling unemployment and is now close to the 2003-2007 average (Chart V-3).[1]

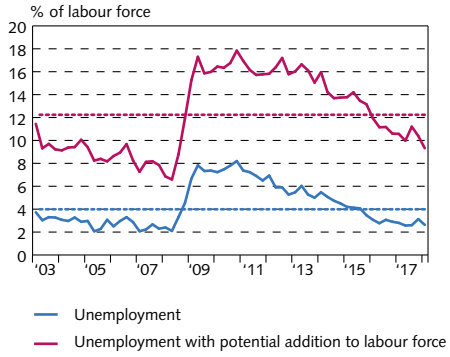
1. For further discussion of the potential addition to the labour force, see Box 3 in *Monetary Bulletin* 2015/2.

Chart V-1
Employment and hours worked[1]
Q1/2005 - Q1/2018



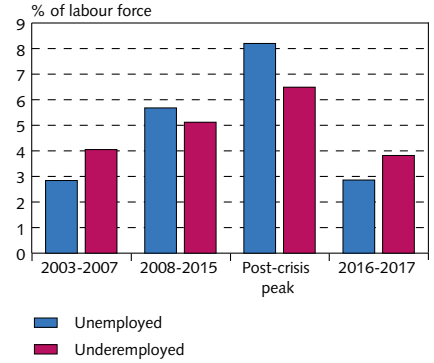
1. Quarterly averages of monthly figures.
Source: Statistics Iceland.

Chart V-2
Unemployment and potential addition to the labour force[1]
Q1/2003 - Q1/2018



1. The potential addition to the labour force includes those who are available but not seeking work, those who are seeking work but not immediately available, and underemployed part-time workers. The broken lines show the period average for unemployment with the potential addition to the labour force and the 1991-2017 average for unemployment. Seasonally adjusted figures.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-3
Unemployment and underemployment[1]

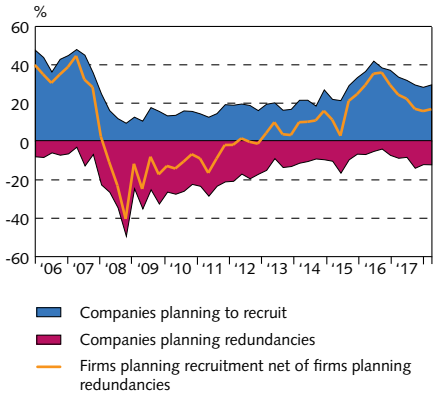


1. Underemployed workers are part-time workers who would like to work more. Seasonally adjusted figures.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-4

Companies planning to change staffing levels within 6 months[1]

Q1/2006 - Q1/2018

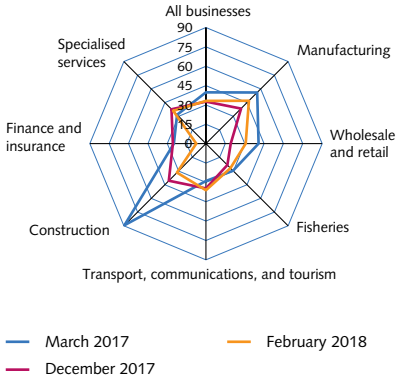


1. Seasonally adjusted figures.
Sources: Gallup, Central Bank of Iceland.

Chart V-5

Firms considering themselves short-staffed[1]

Share of businesses (%)



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

Executives continue to expect increased staffing levels

According to Gallup's spring survey of Iceland's 400 largest firms, the outlook is for continued growth in labour demand in the next six months. The share of respondents planning to add on staff exceeds the share planning redundancies by 17 percentage points, after adjusting for seasonality (Chart V-4). This share has held steady at this level in the past three surveys, after having fallen in the three surveys preceding. It remains about 8 percentage points above its historical average, indicating continued strong labour demand.

Executives in the retail and wholesale sector were more interested in recruiting than they were in the winter survey, and the share planning to add on staff net of the share planning redundancies increased by 7 percentage points between surveys. On the other hand, tourism companies' need for additional staff has eased, and the ratio of planned recruitment net of planned redundancies declined by 20 percentage points. In spite of this, tourism was the sector where most respondents said they needed to add on staff, as the share of firms planning to recruit exceeded the share planning to reduce staffing levels by 24 percentage points. As before, the share of executives planning redundancies was largest in the fishing industry, although it had fallen since the winter survey. The fishing industry was the only sector where a larger share of companies were planning to reduce staffing levels rather than to recruit.

Indicators of factor utilisation

Firms are still having difficulties filling jobs ...

About a third of firms are still having trouble filling available jobs, according to Gallup's spring survey (Chart V-5). This ratio has been broadly stable since the autumn 2017 survey and is still about 10 percentage points above its historical average. The share of companies that consider themselves understaffed increased proportionally the most in manufacturing and retail and wholesale sectors. It is now largest in manufacturing, where nearly half of survey participants consider it difficult to fill available jobs. The significant shortage of construction workers appears to have been addressed with imported labour last year, but in the spring survey nearly a third of executives in the sector still considered their firms understaffed, about the same as in other sectors that have grown rapidly with the surge in tourism; i.e., trade, transport, transit, and tourism itself, as well as various specialised services.

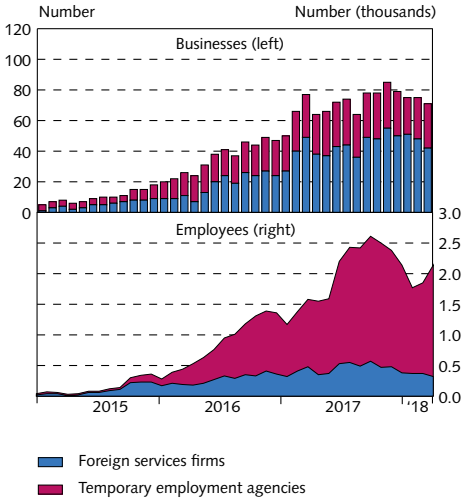
... despite significant importation of labour

2017 was a record year in terms of net inward migration. In the 20-59 age group, the number of immigrants net of emigrants was positive by 3.8% of the population. Migration figures for Q1/2018 indicate that labour supply is still increasing with the arrival of foreign workers, as the migration balance of this same group was positive by 0.8% of the population. Directorate of Labour figures on the number of workers employed through temporary employment agencies and foreign services firms also indicate that labour importation remains strong (Chart V-6). This group of workers grew markedly in summer 2017,

both in the construction sector and during the peak tourist season, but declined again over the second half of the year. It is likely that employers were able to some degree to find permanent employees, thereby reducing the need to hire workers through employment agencies. The decline could also reflect seasonal fluctuations. The number of agency-based employees increased again in 2018 to date, and including employees from foreign services firms they constituted 1.1% of employed individuals in March. The number of issued work permits rose by 15% in Q1, the same as in all of 2017.

As has been discussed in previous issues of *Monetary Bulletin*, it is considered likely that the LFS does not adequately cover the growth in the labour force due to strong growth in labour importation, partly because the survey sample is based on those with a legal address in Iceland. Statistics Iceland's recent publication of labour force figures based on pay-as-you-earn (PAYE) data and Registers Iceland's population figures support this hypothesis. According to PAYE data, the number of workers with a foreign legal address has increased markedly in the past two years (Chart V-7), to 3.2% of the PAYE register, about the same as in 2008. The share of workers with a foreign legal address peaked in 2007 at 3.9%.

Chart V-6
Temporary employment agencies and foreign services firms and their employees
January 2015 - March 2018

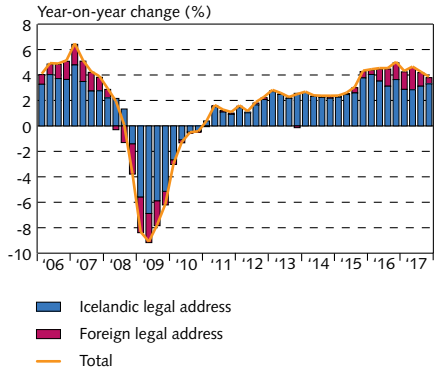


Source: Directorate of Labour.

Productivity growth normalises

Labour productivity, measured as the ratio between GDP and total hours worked according to the LFS, rose sharply in 2016-2017, or by an average of 3½% per year, well above its historical average and the post-crisis level both in Iceland and in other advanced economies. As has been discussed in previous issues of *Monetary Bulletin*, this is probably an overestimation stemming from the aforementioned underestimation of job creation in the LFS.[2] Productivity growth is not expected to be as strong in 2018. It is expected to measure just over 1%, somewhat below its historical average.

Chart V-7
Number of employed according to PAYE register data[1]
Q1/2006 – Q4/2017



1. Individuals aged 16-74 who received employment income included in the Director of Internal Revenue's pay-as-you-earn (PAYE) register, including individuals on childbirth leave and self-employed persons.
Sources: Statistics Iceland, Central Bank of Iceland.

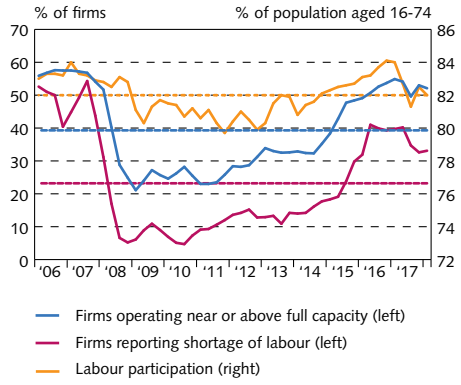
Strain on production factors even though pressures seem to be easing

The share of firms that expect to have difficulty responding to unexpected demand is still high, at over half, according to Gallup's spring survey (Chart V-8). This share was 13 percentage points above its historical average and has fallen very little, despite large-scale labour importation and investment in recent years.

Chart V-9 shows the resource utilisation (RU) indicator, which combines various indicators of factor utilisation into a single measure. The RU indicator is estimated based on information from Gallup's survey of Iceland's 400 largest firms and selected indicators from the labour market. As is discussed in Box 3, it appears to capture the business cycle quite well. It could also be a leading indicator of developments in the labour market; e.g., in a downturn, if firms choose to retain staff in whom they have invested even though their demand eases temporarily. In this case, unemployment may remain low for a

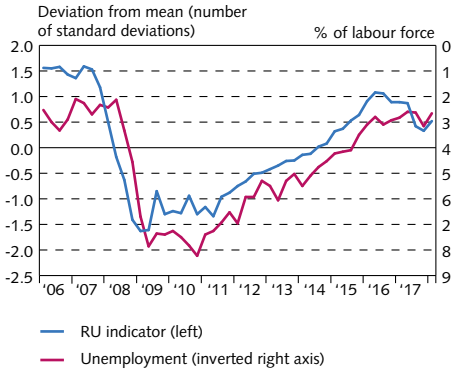
2. As is discussed in Box 2, Statistics Iceland has begun publishing new labour market data based on the national accounts. It is hoped that this will give a more reliable indication of productivity growth.

Chart V-8
Capacity utilisation and labour participation[1]
Q1/2006 - Q1/2018



1. Indicators of factor utilisation are from the Gallup Sentiment Survey conducted among Iceland's 400 largest companies, and labour participation data are from Statistics Iceland's Labour Force Survey. All data are seasonally adjusted. Broken lines show period averages.
Sources: Gallup, Statistics Iceland, Central Bank of Iceland.

Chart V-9
Resource utilisation and unemployment[1]
Q1/2006 - Q1/2018



1. The resource utilisation indicator (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. Unemployment is seasonally adjusted.
Sources: Statistics Iceland, Central Bank of Iceland.

period, giving the impression that capacity utilisation in the economy is still high.

The RU indicator shows that resource utilisation was significantly above average until the end of 2007, when it began to fall. Unemployment remained low until the financial crisis struck, however, whereas resource utilisation as measured by the RU indicator was already below average. The indicator implies that the slack peaked in early 2009, and from mid-2011 it indicates that resource utilisation increased again concomitant with a decline in unemployment. It also indicates that resource utilisation overtook capacity again in mid-2014, about half a year before the Bank's assessment of the business cycle indicated that the output gap had opened up again. The RU indicator peaked in mid-2016 but has fallen slightly since then, concurrent with the slowdown in GDP growth. In accordance with other indicators, the most recent RU indicator values suggest that there is still considerable strain on production factors.

Most indicators suggest that production factors will continue to be put to the test, and the RU indicator could imply that the strain is increasing again, even though growth in economic activity has eased. Strong growth in demand has been addressed with importation of labour and other inputs, which has reduced demand pressures in the economy. On the whole, the output gap is considered to have been wider in 2017 than previously thought, which reflects Statistics Iceland's revision of previous estimates of stronger output growth in 2014-2016 (see Chapter IV). The outlook is for output growth to be slightly stronger in 2018 than was forecast in February. Furthermore, the equilibrium unemployment rate is estimated to have fallen somewhat more than was assumed then, owing to strong labour importation. As a result, the output gap is projected to be slightly wider for most of the forecast horizon than was forecast in February. It is expected to measure 1.2% of potential output at the end of 2018 and then narrow gradually until it virtually closes by end-2020.

VI Inflation

Inflation measured 2.5% in Q1/2018 but eased back to 2.3% in April. Underlying inflation has risen recently and is currently in line with headline inflation. House prices have increased year-to-date, particularly in regional Iceland, and are still the main driver of inflation. The effects of the past appreciation of the króna have continued to subside, and there are signs that domestic inflationary pressures have increased. Wages are expected to rise more this year than previously anticipated, although it is still assumed that the upcoming wage settlements will be accommodated within the framework agreement in the labour market. Short-term inflation expectations have risen since the last *Monetary Bulletin*, whereas market agents' long-term inflation expectations appear broadly in line with the target.

Recent developments in inflation

Inflation close to target

Inflation measured 2.5% in Q1/2018, about 0.1 percentage points above the forecast in the February *Monetary Bulletin.* Rising house prices, particularly in regional Iceland, had the most impact on the CPI during the quarter. In March, the effect of higher house prices was close to the monthly average for H1/2017, when house price inflation was unusually strong.

Inflation measured 2.8% in March, rising above the Central Bank's inflation target for the first time in four years (Chart VI-1). The CPI rose by 0.04% month-on-month in April, however, bringing headline inflation back down to 2.3%, slightly lower than at the time of the last *Monetary Bulletin* but 0.4 percentage points higher than at the end of 2017. Developments in the CPI in April were driven mainly by rising petrol prices, with a decline in house prices pulling in the opposite direction. The CPI excluding housing was down 0.2% year-on-year in April, a smaller decline than in previous months. The difference between inflation with and without housing has been narrowing since it peaked in summer 2017. The HICP, which also excludes owner-occupied housing costs, rose 0.3% year-on-year in March.

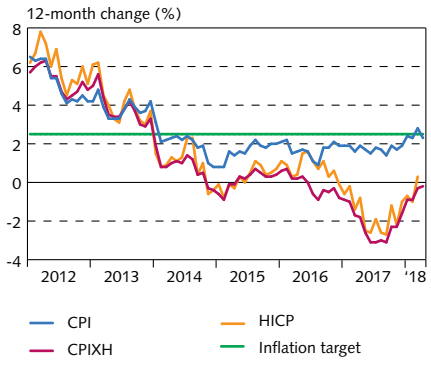
Underlying inflation and other indicators of inflationary pressures

Underlying inflation has risen in the recent term

Underlying inflation has been on the rise in the recent past (Chart VI-2). The median of various measures was 2.3% in April, up from 1.5% in April 2017 (see also Box 4). Underlying inflation is therefore in line with measured inflation at present but has risen somewhat more rapidly in the past year.

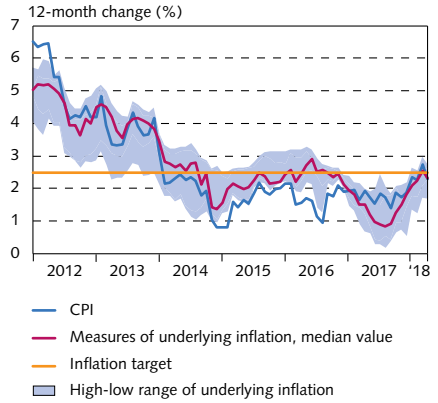
House price inflation had eased by end-2017, after having been the main driver of headline inflation in recent years (Chart VI-3). In Q1/2018, house prices rose sharply once again, however, particularly outside the capital area. The rise in owner-occupied housing costs pushed the CPI upwards by 0.6 percentage points in Q1, and

Chart VI-1
Various measures of inflation
January 2012 - April 2018



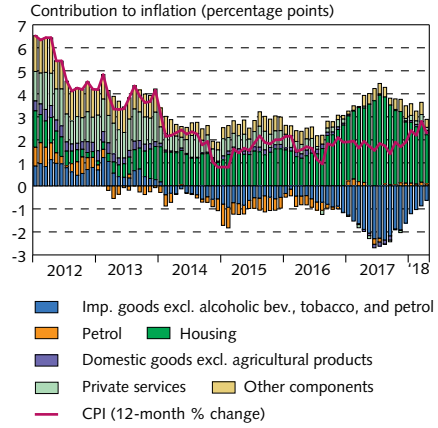
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VI-2
Headline and underlying inflation[1]
January 2012 - April 2018



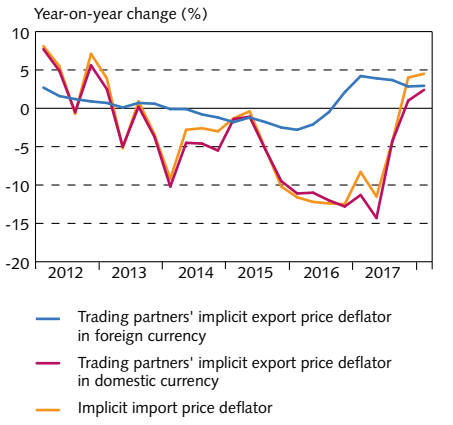
1. Underlying inflation measured using a core index (which excludes the effects of indirect taxes, volatile food items, petrol, public services, and real mortgage interest expense) and statistical measures (weighted median, trimmed mean, a dynamic factor model, and a common component of the CPI).
Sources: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

Chart VI-3
Components of CPI inflation
January 2012 - April 2018



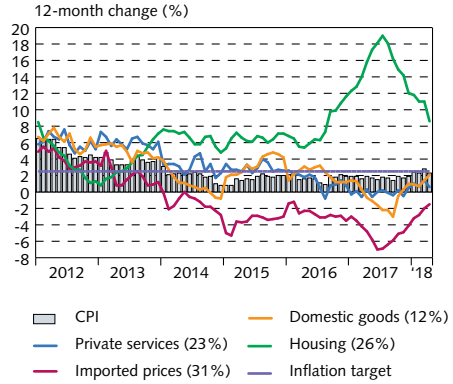
Source: Statistics Iceland.

Chart VI-4
Import prices and international export prices[1]
Q1/2012 - Q1/2018



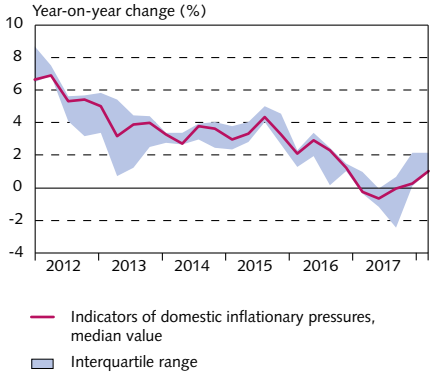
1. Central Bank baseline forecast Q1/2018.
Sources: Statistics Iceland, Thomson Reuters, Central Bank of Iceland.

Chart VI-5
Imported and domestic inflation[1]
January 2012 - April 2018



1. Imported inflation is estimated using imported food and beverages and the price of new motor vehicles and spare parts, petrol, and other imported goods. The figures in parentheses show the current weight of these items in the CPI.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VI-6
Domestic inflationary pressures[1]
Q1/2012 - Q1/2018



1. The shaded area includes five indicators of domestic inflationary pressures. The indicators are unit labour costs (moving average), the GDP price deflator, prices of private services and domestic goods, and producer prices of goods sold domestically. Central Bank baseline forecast Q1/2018 for the GDP price deflator and for unit labour costs.
Sources: Statistics Iceland, Central Bank of Iceland.

⅔ of that effect was attributable to the rise in regional Iceland house prices. This increase in regional Iceland is probably due in part to last year's steep rise in capital area house prices, which shifted some of the demand for housing to near-lying communities. Developments in regional house prices are very volatile, and part of the increase reversed in April. The twelve-month rise in the housing component of the CPI measured 8.6% in April, down from the peak of 19% in July 2017 (see Chapter III).

Effects of past appreciation of the króna taper off ...

The impact of past appreciation of the króna on imported goods prices has subsided in recent months. The króna has strengthened by 2% year-to-date. Imported goods and services prices are estimated to have risen by 4.5% year-on-year in Q1, whereas the annual average has fallen each year for the past five years (Chart VI-4). Imported food and beverages prices, for example, have risen by 1.2% in the past twelve months, after falling virtually unimpeded since 2015. In addition, global oil prices have risen markedly year-on-year and, by May, had reached their highest point since end-2014 (see Chapter II). On the whole, however, the price of imported goods in the CPI had fallen by 1.5% year-on-year in April, as clothing, furniture, and electronic equipment prices were lower than they were a year ago (Chart VI-5).

... and domestic inflationary pressures increase at the same time

Various indicators imply that domestic inflationary pressures have been on the rise recently, although they are still moderate (Chart VI-6). It is likely that the effects of the recent large pay rises will be partly passed through to prices as the effects of the stronger króna taper off. The price of domestic goods in the CPI has risen by just over 2% in the past twelve months, whereas it had fallen by a little more than 1%, on average, in H2/2017. Producer prices of goods sold domestically are still lower than they were twelve months ago, but the year-on-year decline is now much smaller. The contribution of private services to inflation is still limited, but this has been strongly affected by the past few years' reduction in overseas airfares, which stems largely from the vastly increased competition in passenger flights to and from Iceland. In addition, the decline in telephone services prices has begun to ease (Chart VI-7). Indicators therefore imply that domestic inflationary pressures have begun growing.

The results of Gallup's spring survey among Iceland's 400 largest companies indicated that more executives expect both input prices and the price of their own goods and services to increase (Chart VI-8). About 44% of executives expected to need to raise their prices in the next six months, the largest share in two years. The share of respondents who expected to face rising input prices has risen sharply in the recent past, with just over 63% of respondents expecting a rise in the next six months. Most likely, some of the increase since the autumn 2017 survey is due to the recent rise in global oil prices.

Wages rose more in 2017 than previously estimated

In March, Statistics Iceland published production accounts figures on developments in wages and related expenses during the period 2014-

2016, which include a minor upward revision of previous figures. Statistics Iceland also published its first estimates of increases in wages and related expenses in 2017. According to those figures, wages per hour rose by 8.3% during the year, much more than the 6.3% forecast in the February *Monetary Bulletin*. The deviation could be due in part to larger demand-related bonus payments or a larger share of overtime hours, but it should be borne in mind that Statistics Iceland's early figures have a tendency to change markedly upon revision. The increase is also much larger than both the rise in wages per hour worked according to Statistics Iceland's newly published figures and the rise in the wage index, both of which measured 6.8%. In view of this, the baseline forecast assumes that wages per hour rose by 7.5% in 2017, which is more than was projected in February but less than the production accounts suggest.

Upcoming wage settlements still expected to be accommodated within the framework agreement in the labour market

The wage agreements finalised since the last *Monetary Bulletin* have been in line with that forecast. Contracts were not reviewed or terminated in February, but there is still considerable unrest in the labour market, and deep dissatisfaction with wages and income distribution. In spite of this, it is assumed that the settlements to be negotiated late this year and early in 2019 will be consistent with the framework agreement in the labour market.

The aforementioned revision of last year's wage increases also affects average wage growth in 2018. In addition, wage drift has been stronger than was assumed in February. As a result, pay rises this year measure over 1 percentage point more than previously forecast. The estimate of productivity growth is largely unchanged (see Chapter V); therefore, unit labour costs rise more than previously projected. They are now projected to have risen by just over 5% in 2017, followed by an increase of nearly 7% this year (Chart VI-9).

Inflation expectations

Short-term inflation expectations rise again ...

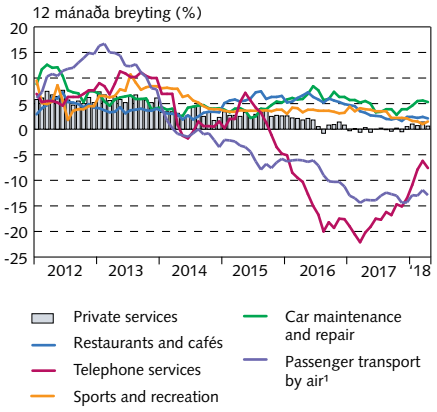
Households' and businesses' short-term inflation expectations have risen since the last *Monetary Bulletin* (Chart VI-10). According to the Gallup surveys carried out this spring, both households and corporate executives expected inflation to measure 3% in one year's time. Corporate inflation expectations had risen by 0.5 percentage points from the winter survey but had remained below 3% for the past two years. Households' two-year inflation expectations also rose by 0.5 percentage points, to 3.5%. The breakeven inflation rate in the bond market points more or less in the same direction. The two-year breakeven rate averaged almost 3% in April, some 0.3 percentage points higher than in February.[1] Market agents' short-term inflation expectations, however, have remained broadly unchanged in recent months. Accord-

1. The breakeven inflation rate is calculated based on the interest rate differential between indexed and non-indexed bonds. It should be borne in mind when interpreting the breakeven rate that it also includes a risk premium related to bond liquidity, as well as a risk premium reflecting uncertainty about inflation.

Chart VI-7

Private services and selected subcomponents of the CPI

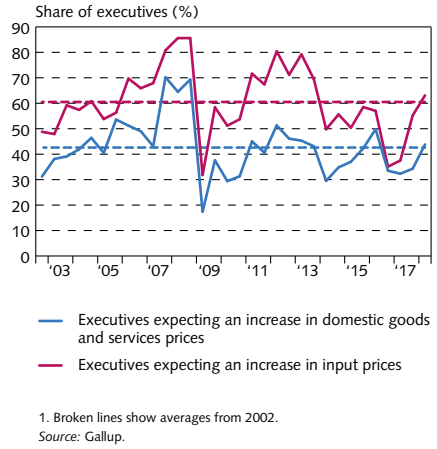
January 2012 - April 2018



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

Chart VI-8

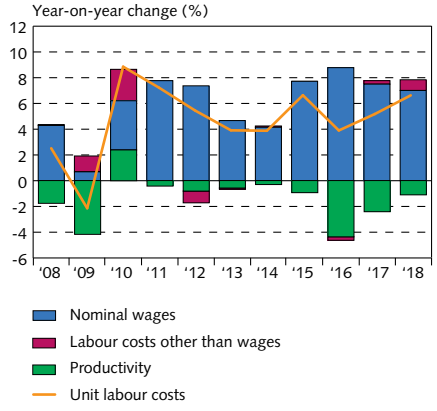
Corporate expectations of input and product prices 6 months ahead 2002-2018[1]



1. Broken lines show averages from 2002.
Source: Gallup.

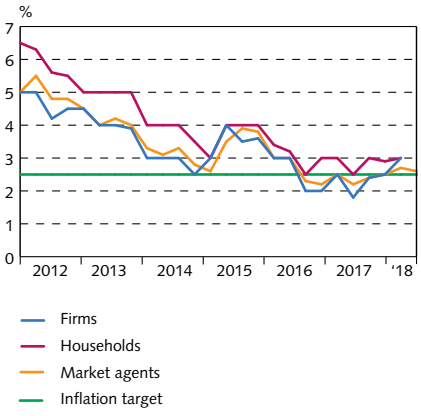
Chart VI-9

Unit labour costs and contribution of underlying components 2008-2018[1]



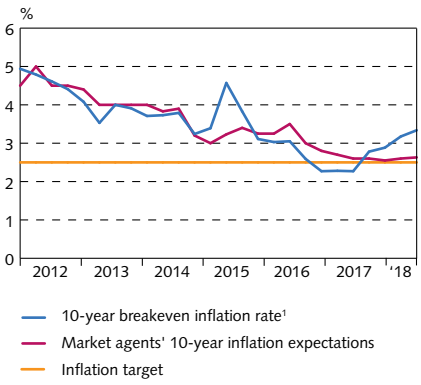
1. Labour productivity growth is shown as a negative contribution to an increase in unit labour costs. Central Bank baseline forecast 2017-2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VI-10
One-year inflation expectations
Q1/2012 - Q2/2018



Sources: Gallup, Central Bank of Iceland.

Chart VI-11
Long-term inflation expectations
Q1/2012 - Q2/2018



1. The value for Q2/2018 is the Q2 average to date.
Source: Central Bank of Iceland.

ing to the Central Bank survey conducted in early May, respondents expected inflation to measure 2.6% in one year and 2.7% two years ahead.

... while long-term inflation expectations appear broadly in line with the target

In Gallup's spring survey of household inflation expectations, respondents were asked for the first time about their long-term inflation expectations. Their responses indicated that they expect inflation to average 3.5% over the next five years. Market agents' long-term inflation expectations appear broadly in line with the target, however. According to the Bank's May survey, market agents expect inflation to average 2.6% over the next five and ten years (Chart VI-11). Their long-term expectations have therefore changed very little in the past year, whereas the breakeven inflation rate in the bond market has risen somewhat over the same period. The ten-year breakeven rate has been 3.3% in Q2 to date, as opposed to an average of 3.2% in Q1/2018 and 2.3% in Q2/2017. Given that market agents' long-term inflation expectations have held broadly steady in the recent term, it is likely that part of the rise in the breakeven rate stems from an increase in the risk premium in the bond market.

Box 1

Special reserve requirement on capital inflows and private sector financing conditions

In June 2016, the Central Bank of Iceland introduced a capital flow management measure (CFM) entailing a special reserve requirement (SRR) on a portion of new inflows of foreign currency to Iceland. The SRR serves as a macroprudential tool that can reduce the build-up of systemic risks stemming from excessive capital inflows.[1] At the time, however, a key objective of the SRR was to strengthen the transmission of Central Bank interest rate changes to other interest rates, as this transmission mechanism began to break down in the wake of increased foreign capital inflows into non-indexed Treasury bonds in H2/2015. A sign of the breakdown was that Treasury bond yields fell steeply even though the Central Bank's interest rates had been raised and the Bank's Monetary Policy Committee (MPC) had signalled that further rate hikes could be expected. Due to these inflows, the monetary stance was increasingly reflected in the appreciation of the króna, as was the case during the prelude to the financial crisis in 2008. This can cause problems, as monetary policy transmission is generally less predictable when it takes place through the exchange rate channel than through the interest rate channel. The introduction of the SRR delivered the intended results, and changes in Central Bank interest rates were reflected again in Treasury bond rates, unlike the situation in 2015 (Chart 1).

It has been asserted that this objective of the SRR has not been achieved except partially and that the adoption of the requirement itself has impeded monetary policy transmission and prevented the Central Bank's rate cuts since August 2016 from being transmitted to rates offered to households and businesses, unlike what has happened with Treasury bond rates. The argument is therefore that the SRR has caused too much monetary tightening and restricted resident borrowers' access to credit to an excessive degree. This Box examines these factors.

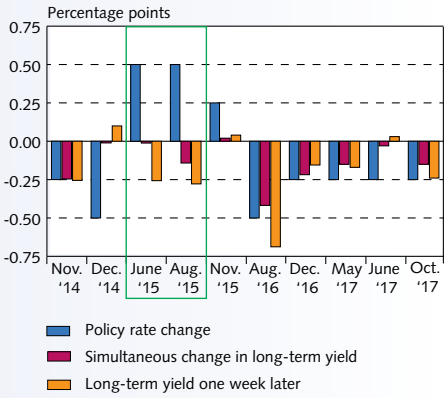
Interest rates on the commercial banks' covered bonds have developed broadly in line with Treasury bond rates

The secondary market for the commercial banks' covered bonds is considerably thinner than the domestic Treasury bond market, and the bonds themselves are much less liquid. Outstanding covered bonds have amounted to about 30% of the value of Treasury and Housing Financing Fund (HFF) bonds in the recent past, and turnover has been about 18% of Treasury and HFF bond turnover. On the whole, yields on covered bonds have developed in line with Government-guaranteed bond yields in recent years, as the Treasury bond market creates the basis for bond market pricing. Increased capital inflows in 2015 also led to a breakdown in the transmission of monetary policy to covered bond interest rates, even though the inflows had been invested only in Treasury bonds. As with Treasury bonds, it appears that monetary policy transmission to covered bond rates normalised again after the SRR was adopted. In general, yields on both short- and long-term nominal and indexed bonds have fallen in line with reductions in Central Bank rates in the recent past, which did not happen in 2015 (Charts 2 and 3). Since mid-2017, however, yields on indexed covered bonds have not fallen to the same degree as yields on comparable Treasury and HFF bonds. To some extent, this can probably be attributed to limited trading with covered bonds and a more homogeneous group of owners, both of which make prices

1. The rules on the SRR specify that 40% of new inflows of foreign currency for investment in high-yielding deposits and listed bonds and bills issued in krónur must be held in a non-interest-bearing account with the Central Bank for one year. Further discussion of the SRR can be found in Box 1 in *Monetary Bulletin* 2016/4 and Box 2 in *Monetary Bulletin* 2017/4.

Chart 1

Impact of changes in Central Bank interest rates on Treasury bond yields

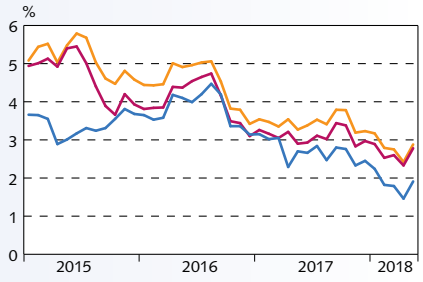


Source: Central Bank of Iceland.

Chart 2

Real Central Bank rate and real yields on non-indexed marketable bonds

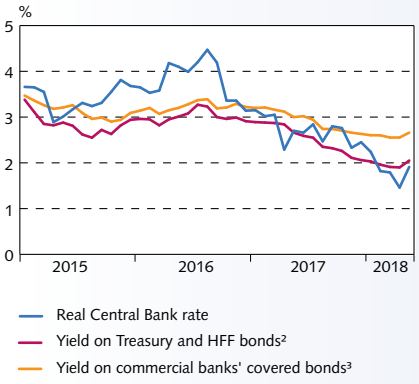
January 2015 - May 2018[1]



1. Based on data until 11 May 2018. 2. Five-year rate based on the estimated nominal yield curve. 3. Average yield on bonds maturing in 2019-2023.

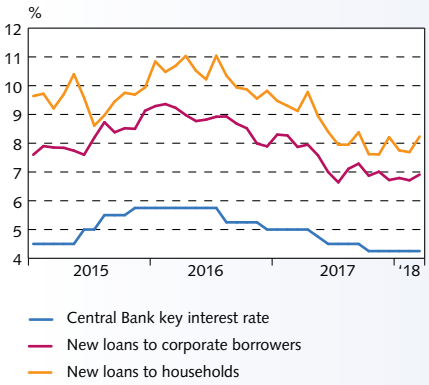
Sources: Kodiak Pro, Central Bank of Iceland.

Chart 3
Real Central Bank rate and yields on indexed marketable bonds
January 2015 - May 2018[1]



1. Based on data until 11 May 2018. 2. Five-year rate based on the estimated real yield curve. 3. Average yield on bonds maturing in 2021-2034.
Sources: Kodiak Pro, Central Bank of Iceland.

Chart 4
Central Bank key rate and commercial banks' nominal lending rates[1]
January 2015 - March 2018



1. The three large commercial banks' nominal lending rates, weighted average, by loan amount.
Source: Central Bank of Iceland.

stickier than Treasury and HFF bond prices. Furthermore, given that the pension funds hold the majority of covered bonds, less demand from them, concurrent with their increased foreign investment and emphasis on lending to fund members, could have had some impact and pushed yields higher than they would be otherwise. This is in line with the results of the Bank's recent survey of market agents, which indicate that respondents are of the opinion that indexed covered bond yields have not fallen as much as comparable Treasury and HFF bonds because of a relatively greater supply of covered bonds, a homogeneous group of investors, and decreased demand from pension funds.

Non-indexed lending rates to households have fallen in line with Central Bank rates ...

In the main, changes in Central Bank interest rates have been transmitted to rates offered to households in recent years, and this did not change after the SRR was activated (Charts 4 and 5). Credit institutions' non-indexed deposit and lending rates have fallen in line with Central Bank rates, as have variable rates on pension funds' indexed loans, which move broadly in line with indexed Treasury and HFF bond yields. On the other hand, changes in Central Bank rates have not been transmitted as effectively to other indexed rates, as the transmission mechanism is usually weaker in the case of longer-term indexed mortgage rates, and this did not change after the introduction of the SRR. Nevertheless, rates on the commercial banks' indexed loans to households have fallen in recent years and are close to an all-time low. Households' increased use of non-indexed loans and the pension funds' rising share in the mortgage lending market have strengthened the transmission of Central Bank rates to interest rates offered to households, and the SRR has not affected this in any way.

... and the SRR has not affected households' access to credit

There are no signs that the SRR has affected households' access to credit, either. As is discussed in Chapter III, credit system lending to households has grown by 5½% year-on-year in nominal terms in the recent past, as compared with annual growth of 1-2% for most of 2016 and virtually no growth at all in 2015, after adjusting for the effects of the Government's debt relief measures.

Rates on new loans to non-financial companies have moved broadly in line with Central Bank rates ...

The majority of new króna-denominated loans to non-financial companies are non-indexed variable-rate loans. Since the beginning of 2015, for instance, these have accounted for some 85% of the three large commercial banks' total lending to such companies (Table 1). As Charts 4 and 6 show, interest rates on these loans have fallen in line with the Bank's key rate. A further breakdown by maturity and loan amount shows that the average interest rate on all categories

Table 1 New króna-denominated loans from the three large commercial banks to non-financial companies (b.kr.)

Year	*Non-indexed*	*Indexed*	*Total*	*Variable-rate*	*Fixed-rate*	*Total*
2015	460.2	86.8	547.0	495.8	51.2	547.0
2016	461.0	76.4	537.4	515.7	21.7	537.4
2017	590.2	93.3	683.6	657.8	25.7	683.6
Total	1,511.4	256.5	1,768.0	1,669.4	98.6	1,768.0

Source: Central Bank of Iceland.

of non-indexed corporate loans has fallen in line with Central Bank rates, from one-year loans of less than 40 m.kr. to ten-year loans of more than 160 m.kr. On the other hand, there has been little change in rates on indexed corporate loans, but these loans are rare: since the beginning of 2015, for instance, indexed loans have accounted for only 15% of total corporate lending by the three large banks, and only 38% of those loans bear fixed interest. The share of other types of króna-denominated loans has also been negligible.

... and firms' access to credit appears normal

As is discussed in Chapter III, credit system lending to businesses has increased markedly in the recent term. In nominal terms, loans grew by 3.9% year-on-year in 2016 and 6.1% in 2017, after a continuous contraction between 2010 and 2015. In Q1/2018, nominal year-on-year growth measured 9.7%, the strongest in roughly a decade. In the recent past, credit growth has been concentrated in loans to companies in the services sector, particularly real estate firms, construction firms, and tourism-related companies, reflecting the strong investment activity in those sectors. Corporate investment has also been growing rapidly in the past few years (see Chapter IV). Based on these developments and given the overall demand pressures in the economy, it is difficult to argue that the adoption of the SRR has led to overly tight monetary policy or hindered domestic firms' access to credit.

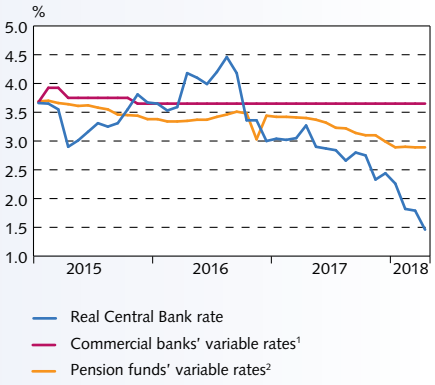
Corporate bond yields are broadly unchanged, however

The corporate bond market is very thin compared with the markets for Treasury bonds and the commercial banks' covered bonds, and most of the bonds are indexed to inflation. Corporate bond turnover has amounted to just about 1% of Treasury and HFF bond turnover in the recent term. Domestic firms' marketable bonds accounted for about 15% of total corporate debt at the end of 2017, and a large proportion of them were issued by Government-owned companies (Chart 7). Furthermore, there are few bonds with market making, which tends to hinder price formation in the market.

Among corporate bonds, turnover is greatest with real estate company bonds, whereas trading of other bonds is extremely sparse, and yields have been broadly unchanged. Real estate company bond yields have not moved in line with Central Bank rate cuts as comparable indexed Treasury and HFF bonds or commercial banks' covered bonds have. However, yields on real estate company bonds fell starting in H2/2017, albeit not as much as yields on other bonds (Chart 8). In addition to the inactivity in the market, there are other factors that complicate comparison. Unlike Treasury and HFF bonds, most real estate company bonds are redeemable, and multiple issuance of the same bonds when the length of time until they can be settled at par varies makes it difficult to compare them. In addition, market agents could consider counterparty risk elevated because house price inflation has slowed down, causing the companies' share prices to fall.

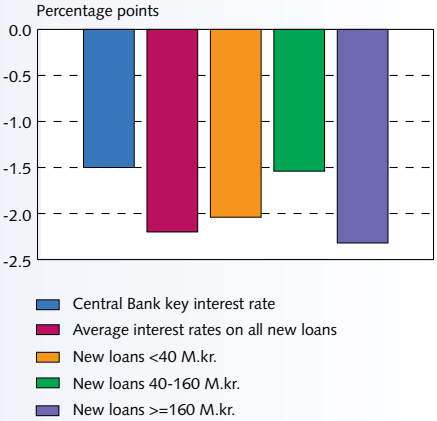
The characteristics of the corporate bond market, its limited size, and the homogeneity of the companies concerned make it difficult to assess the effectiveness of monetary policy transmission to corporate bond rates; however, it is clear that the transmission mechanism is less effective than for other bonds. Even so, this situation has changed little since the SRR was introduced, and the market has been relatively inactive for a long time, as a large proportion of domestic firms seek external financing through direct borrowing rather than through issuing bonds in the market.

Chart 5
Real Central Bank interest rate and indexed mortgage rates
January 2015 - April 2018



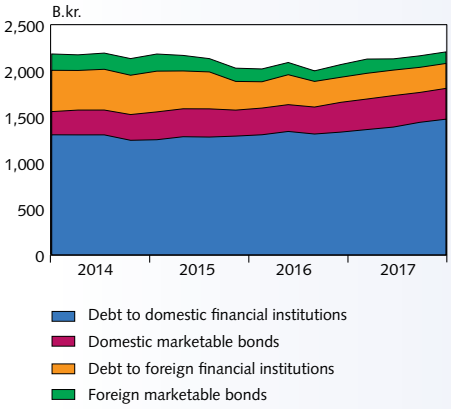
1. Simple average of the three large commercial banks' mortgage rates.
2. Simple average of the mortgage rates of Almenni Pension Fund, Frjálsi Pension Fund, Gildi Pension Fund, Lífeyrissjóður verslunarmanna, Lífsverk, The Pension Fund (Söfnunarsjóður lífeyrisréttinda).
Source: Central Bank of Iceland.

Chart 6
Impact of changes in Central Bank interest rates on corporate lending rates[1]
July 2016 - December 2017



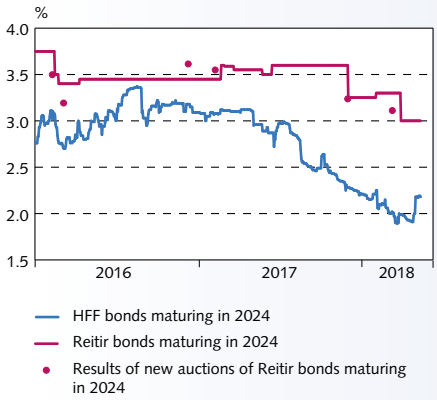
1. Weighted average interest rate on the three large commercial banks' non-indexed variable-rate loans to non-financial companies. The interest rates are weighted to reflect the principal amount of the loans.
Source: Central Bank of Iceland.

Chart 7
Non-financial corporate debt
Q1/2014 - Q4/2017



Source: Central Bank of Iceland.

Chart 8
Yields on indexed bonds issued by the Housing Financing Fund and Reitir Real Estate
1 January 2015 - 11 May 2018



Sources: Kodiak Pro, Reitir fasteignafélag hf., Central Bank of Iceland.

Summary

The introduction of the SRR in summer 2016 appears to have delivered the intended results and strengthened the transmission of changes in Central Bank rates to rates on Treasury bonds and the commercial banks' covered bonds, unlike the situation in 2015. Furthermore, the Bank's interest rate changes have been transmitted normally to most of the loan forms available to households and businesses since the SRR was activated. The effectiveness of the transmission mechanism varies by loan form, however, as before. As can be expected, transmission is strongest to non-indexed variable-rate loans to households and businesses, which is the most common type of corporate loan and is growing in popularity among households as well. Transmission to the commercial banks' indexed lending rates has been weaker.

It is difficult to find tenable grounds for the argument that the SRR has in some way affected these developments, as the effectiveness of monetary policy transmission to these loan forms has remained broadly unchanged since the SRR was activated. Changes in the Central Bank's interest rates have generally had less impact on indexed rates than on non-indexed rates, irrespective of the SRR. Furthermore, it is difficult to link developments in interest rate spreads on corporate bonds — i.e., interest rates on corporate bonds relative to Treasury bond rates — to the introduction of the SRR, as the SRR should not change the relative rates on the bonds falling within its scope, particularly if there was no history of inflows into these bonds beforehand. In fact, one of the main reasons the SRR applies to inflows into all electronically registered bonds is to minimise possible distortion in pricing of different types of bonds. There are probably other, more convincing explanations for developments in interest rate spreads on corporate bonds, as is discussed above. Finally, it is difficult to find data to support the assertion that the SRR adversely affects residents' access to credit financing, as growth in lending to households and business has been gaining momentum in the recent term and is at its strongest in a decade. By the same token, consumption growth has been strong, and business investment has grown rapidly in the recent past and appears likely to continue growing this year.

Box 2

New statistics on labour volume and productivity

In February, Statistics Iceland published new preliminary figures on the number of jobs, the number of employed persons, and the number of hours worked on a national accounts basis. The data include both employed and self-employed persons and cover individual sectors and the labour market as a whole. Concurrently, Statistics Iceland published new figures on labour productivity, based on this information. These figures are a welcome supplement to the Statistics Iceland labour force survey (LFS) and will, with time, lead to improved assessments of developments in the labour market. These figures will hereafter be part of regular national accounts publications, with the first publication covering the period from 2008 through 2017. Figures covering as far back as data continuity allows will be published as soon as possible.

The new figures are obtained by using data from the Statistics Iceland Survey on Wages, Earnings and Labour Costs (LS) together with the LFS in order to estimate relative variables. These are then used to estimate activity for the labour market as a whole, using pay-as-you-earn (PAYE) data, personal income tax returns, and individuals' wage slips, as well as the educational database, registered days at sea, and corporate income tax returns.

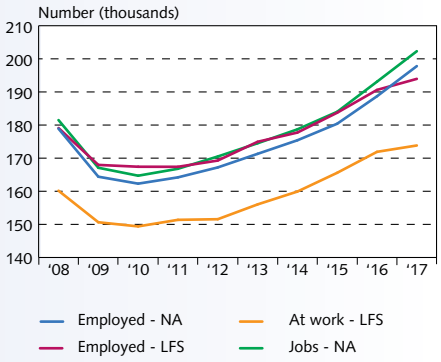
Comparison with labour force survey findings

Comparing the new annual figures with the LFS shows a difference in levels, while changes between periods are similar.[1] The Central Bank has used the number of employed persons from the LFS, but information on the number of persons at work from the same survey should be most comparable to the number of employed persons according to the national accounts.[2] It is therefore surprising how large a difference there is in the number of persons at work according to the LFS and the number of employed persons according to the national accounts measure. That said, developments in the two are relatively similar, even though the latter measure shows a larger contraction in 2009 than the former (Chart 1).

Average hours worked per week are not presented on a national accounts basis but can be calculated from the number of employed persons and the number of hours worked per year. Doing this reveals a significant difference between the LFS and the national accounts measures (Chart 2). For example, employed individuals worked just under 28 hours per week in 2017 according to the national accounts, whereas the average work week for those at work according to the LFS was just under 40 hours long. It is also somewhat surprising that the average work week of all persons according to the national accounts is shorter than the average work week of the youngest age group in the LFS, most of whom are employed part-time.[3] The difference probably stems mostly from the fact that LS figures are used in the estimation and also because the time span of the measures differs;[4] furthermore, the number of hours worked could be overestimated in questionnaire-based surveys such as the LFS, where responses are based on survey par-

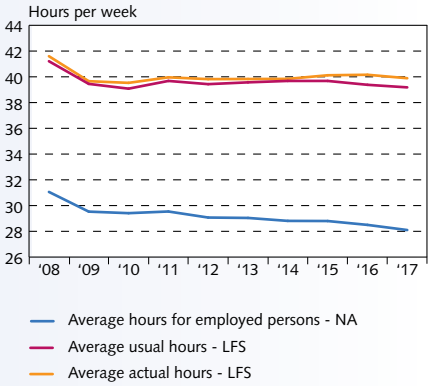
1. The difference between these estimates is to be expected, both because they are produced differently and because of conceptual differences.
2. According to the LFS, employed persons are those who worked at least 1 hour during the reference week or were absent from work they usually carry out. The LFS then defines those who were at work as employed individuals, but excluding those who were absent during the reference week in the survey. The number of employed persons according to the national accounts, however, is the number of individuals by main occupation, provided that the activities fall within the sphere of the national accounts.
3. The youngest age group is those aged 16-24, whose average work week in 2017 was 31 hours, according to the LFS.
4. The national accounts include those who have worked in each month, while the LFS is based on a reference week.

Chart 1
Various measures of employment 2008-2017



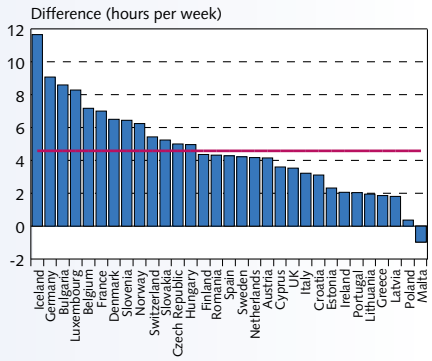
Source: Statistics Iceland.

Chart 2
Various measures of average hours worked 2008-2017



Source: Statistics Iceland.

Chart 3
Difference between average hours worked according to LFS and national accounts, 2016[1]



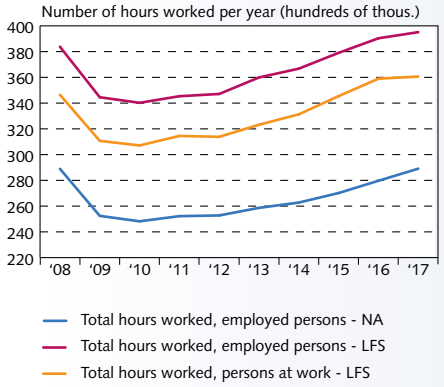
1. Red line shows the average difference across the country group. Figures for Norway are from 2015.

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

ticipants' memory and experiences and respondents may include contractually agreed breaks (such as meal breaks) as work time. Furthermore, cultural factors could cause respondents to overestimate in regions where working long hours is viewed favourably.[5] In other European countries, it is common that the number of hours worked according to labour force surveys exceeds the number according to national accounts. In 2016, the work week was, on average, 4½ hours longer in the countries for which the European statistics bureau, Eurostat, publishes figures. The difference was greatest in Iceland, as the work week was nearly 12 hours longer (Chart 3). In terms of developments in the average work week over the period, national accounts figures also show a larger contraction in hours worked over nearly the entire period.

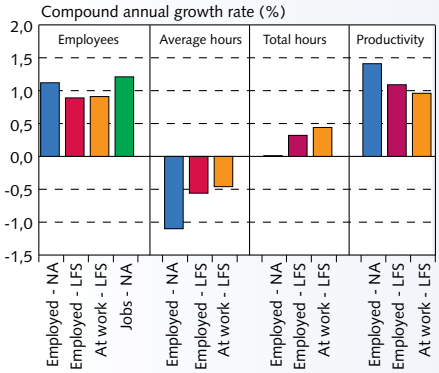
Because of a shorter work week according to the national accounts, total hours worked are much fewer than in the LFS, even though the number of employed persons in the national accounts is greater than in the LFS series showing the number of persons at work. According to the national accounts figures, it appears that the reduction in total hours worked was greater during the recession and that total hours increased more slowly during that period than in the LFS. They also indicate that total hours worked reached 2008 levels in 2017, whereas the LFS indicate that they were reached a year earlier. A slower increase in total hours worked entails a more rapid increase in labour productivity during the period according to the national accounts figures on labour volume (Chart 5), mostly due to a larger contraction in total hours in 2009.

Chart 4
Various measures of total hours worked 2008-2017



Source: Statistics Iceland.

Chart 5
Various measures of labour volume and productivity 2008-2017[1]



1. Productivity measured as gross factor income (volume index) per total hours worked.
Sources: Statistics Iceland, Central Bank of Iceland.

5. See, for example, T. Körner and L. Wolff (2016), "Do the Germans really work six weeks more than the French? – Measuring working time with the Labour Force Survey in France and Germany", *Journal of Official Statistics*, 32, pp. 405-431.

Box 3

New measure of capacity utilisation

The output gap or slack shows the difference between a country's output at any given time and the output that it could achieve with normal utilisation of production factors, referred to as potential output. Normal factor utilisation refers to the level of labour and capital utilisation that is considered consistent with wage and price stability. If output exceeds this level, pressure for more wage and price hikes will develop, and vice versa if output is below potential. An output gap or slack is therefore an important indicator of underlying inflationary pressures in the economy. Estimating capacity utilisation and developments in the potential output of the domestic economy therefore plays an important role in the Central Bank's task of maintaining low and stable inflation.

Estimating factor utilisation and the output gap

Growth in potential output is determined by underlying growth in labour supply (which reflects growth in the working-age population and its willingness to work) and growth and depreciation of the capital stock, but also by how underlying production factors are utilised; i.e., productivity growth and technological advances. Potential output is not directly observed; therefore, estimating it requires relying on a number of indicators and economic models.

Until recently, the Central Bank has estimated potential output using various versions of total-economy production functions. The production function describes how production factors are utilised in converting inputs to output, which is measured in terms of GDP (see, for example, Box IV-1 in *Monetary Bulletin* 2011/4). Also used is the estimate of the so-called natural rate of unemployment — the unemployment level consistent with wage and price stability — so as to assess whether there is a slack or a gap in the labour market (see, for instance, Box VI-1 in *Monetary Bulletin* 2013/4).

The Central Bank has also taken account of various questionnaire-based surveys in estimating factor utilisation and the business cycle position. The surveys, which cover firms' views on factor utilisation and demand for their goods and services, can provide important additional information on the business cycle position and the estimation of the output gap. For example, firms could decide to postpone layoffs during a downturn, retaining more labour than is needed for production and keeping unemployment lower than it would be otherwise. Signs of a downturn could therefore show earlier in information on labour shortages within companies or executives' responses concerning their ability to respond to increased demand. As a result, questionnaires may contain better information on the state of the real economy than can be seen in conventional labour market measures.

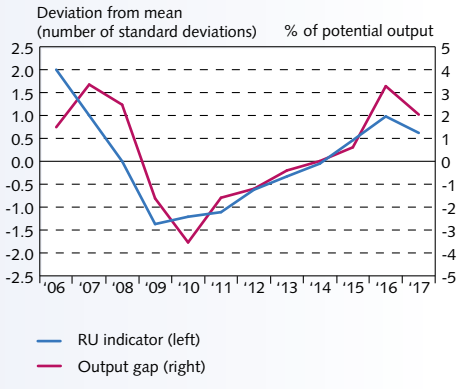
The RU indicator

In order to improve the estimation of the business cycle still further, it is possible to combine information from surveys and from the labour market to form a single metric that can be called the resource utilisation indicator (RU indicator).[1] In estimating the RU indicator, the Gallup survey carried out among executives from Iceland's 400 largest firms is used,[2] together with data on the number of jobs

1. Based on the precedent set by Sveriges Riksbank, which has for some time used similar indicator, among others, to estimate the business cycle position of the Swedish economy. See, for instance, C. Nyman (2010), "An indicator of resource utilisation", Sveriges Riksbank *Economic Commentaries*, no. 4.
2. The responses to four questions from the survey are used: whether the firm is short-staffed, how easily it could respond to unexpected demand, how its profit margins have developed in the past six months, and how it expects them to develop in the coming six months.

Chart 1

Resource utilisation indicator and ouput gap 2006-2017[1]

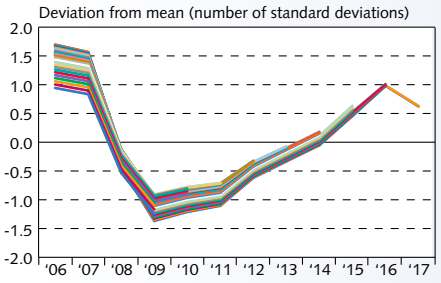


1. Resource utilisation indicator (RU indicator) is the principal component of selected indicators of resource utilisation normalized so its average is 0 and standard deviation is 1. Annual averages.
Source: Central Bank of Iceland.

Chart 2

Revisions of resource utilisation indicator 2006-2017[1]

MB 2006/1 - MB 2018/2



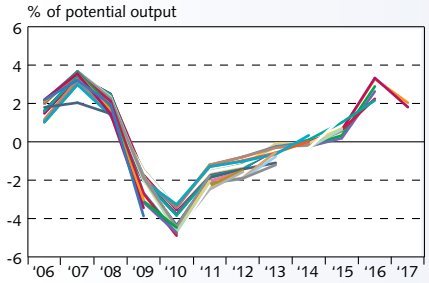
1. The resource utilisation indicator (RU indicator) is the first principal component of selected indicators of factor utilisation; it is scaled so that its mean value is 0 and the standard deviation is 1. Annual averages.

Source: Central Bank of Iceland.

Chart 3

Revisions of the output gap 2006-2017[1]

MB 2006/1 - MB 2018/2



1. Annual averages.

Source: Central Bank of Iceland.

available according to employment advertisements, data on migration, and figures from the Statistics Iceland labour force survey (LFS) on unemployment, average hours worked, the employment rate, and the underemployment rate (see, for example, Box 3 in *Monetary Bulletin* 2015/2).

Principal component analysis weights the above information into a single measure. The RU indicator is the first principal component in the analysis; i.e., the component that explains the largest share of variability in the underlying data.[3] Further discussion on developments in the RU indicator can be found in Chapter V, but Chart 1 compares the indicator with the most recent estimate of the output gap. As can be seen, these two measures track one another closely, and the result is that the economy's position is very similar, although the RU indicator suggests that the turning points in the cycle during the financial crisis and the cyclical recovery soon afterwards started earlier than the estimate of the output gap indicates. The RU indicator also implies that the output gap was potentially somewhat wider during the run-up to the crisis than the official estimate of the output gap indicates.

One advantage of the RU indicator is that it tends to change less upon the arrival of new data than the Central Bank's output gap estimate, which can change when Statistics Iceland's national accounts figures are revised. Chart 2 shows the RU indicator calculated with the data available at the time of publication of each *Monetary Bulletin* from 2006 through 2017. As Chart 3 shows, the corresponding revision of the output gap is generally somewhat larger. The RU indicator can therefore be a useful supplement to the Bank's estimate of the business cycle position and as an input into the overall estimation of the domestic output gap. The Bank is currently assessing the degree to which this new measure could improve the estimate of historical developments in the output gap.

3. The time series that are weighted together in the principal component analysis are in different units of measure; therefore, they are standardised to have an average of zero and a standard deviation of 1 before they are weighted together.

Box 4

Underlying inflation as measured by the common component of the CPI

The Central Bank of Iceland's monetary policy objective is to keep inflation at 2½%, on average. According to the joint declaration issued by the Government and the Bank in 2001, the Bank's inflation target is based on the twelve-month change in the consumer price index (CPI), the most comprehensive measure available of Icelandic households' living expenses.

Measures of underlying inflation

A shared characteristic of all general price indices such as the CPI is that it can be difficult to determine the extent to which they reflect temporary changes in relative prices, which is generally appropriate to ignore in formulating monetary policy, as opposed to a persistent rise or fall in the general price level to which monetary policy should respond, other things being equal. For this reason, the Bank also considers a number of measures of so-called underlying inflation, or core inflation (see the discussion of how underlying inflation has developed in Chapter VI). With such measures, an attempt is made to exclude temporary price changes in individual subcomponents or price changes that can be attributed to supply-side effects or official price decisions that change the price level permanently but only have a temporary impact on measured inflation. It can be appropriate to look past price changes of this type if the Bank does not believe that they will affect the long-term inflation outlook.

No single method stands out as the best way to measure underlying inflation; therefore, the Bank utilises a number of measures, each of which has its strengths and weaknesses. These measures can be broadly divided into two categories. In the first category are core indices that exclude predefined subcomponents from the CPI, such as the price of agricultural products, petrol, and public services, as well as the effects of indirect taxes (for further information, see Pétursson, 2002). The second category comprises price indices estimated using statistical methods; for instance, the trimmed mean, where the most volatile components in a given month are excluded,[1] and the weighted median, which measures the median price change of all subcomponents of the CPI.

Estimating underlying inflation using a factor model

In recent years, the Bank has also taken account of underlying inflation as estimated using a dynamic factor model, where statistical methods are used to identify price changes that are common to all subindices of the CPI and should therefore reflect underlying developments in inflation rather than temporary fluctuations in individual subcomponents.[2] In addition to this, the Bank has begun using another measure of underlying inflation that is also based on identifying common price changes in CPI subcomponents using a factor model (see Gudlaugsdóttir and Kro, 2018). This method is a simpler version of the dynamic factor model and has been selected by the central banks of Canada and Norway as one of their main methods of estimating underlying inflation (see Khan *et al.*, 2015, and Husabø, 2017).

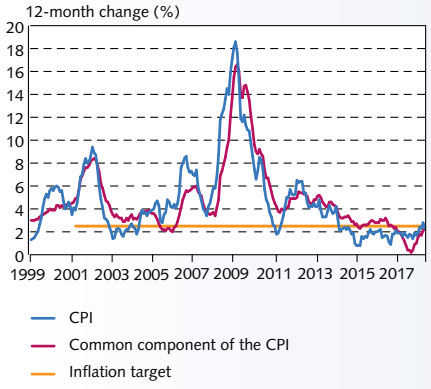
As with other factor models, measured inflation is divided into two parts: one or more factors that attempt to explain the covariance of all CPI subcomponents, and a residual that reflects idiosyncratic price changes in specific subcomponents. These idiosyncratic price changes are then filtered out and underlying inflation interpreted as the price changes that are common to all subcomponents of the CPI.

1. Unlike the core indices, the subcomponents excluded from the trimmed mean may vary from one month to another.
2. See Box 5 in *Monetary Bulletin* 2015/2 and Einarsson (2014).

Chart 1

Headline and underlying inflation

January 1999 - April 2018

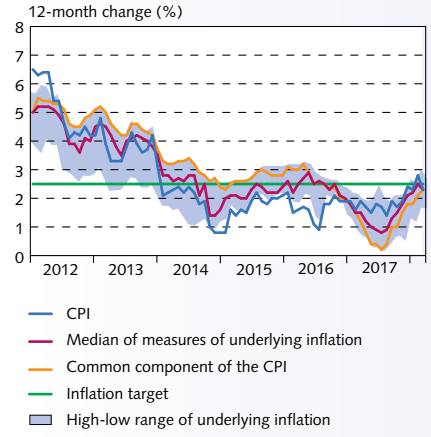


Sources: Statistics Iceland, Central Bank of Iceland.

Chart 2

Headline and underlying inflation[1]

January 2012 - April 2018



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 the common component of the CPI).

Sources: Statistics Iceland, Central Bank of Iceland.

In order to estimate the common component of the CPI, 38 subcomponents of the index are used which cover the entire consumption basket, and these are standardised so that the average twelve-month change is zero and the standard deviation is one. The common component is then estimated using the method of principal components. Further analysis reveals that the first factor suffices to explain a large share of the changes in the CPI, about 78%, and it was deemed unnecessary to add another factor. The first factor is therefore interpreted as underlying inflation, and it tracks measured inflation relatively well, as Chart 1 shows. The majority of the subindices (33 of 38) have a positive correlation to the common component, which explains an average of 50% of the variability in the subindices over the period 1999-2017. This indicates that a considerable share of price changes in the subindices can be explained with the common component. If this same relationship is examined over the period 2011-2017, however, it can be seen that the share of the variability of the subindices explained by the common component has fallen to an average of about 40%. The contribution of underlying inflation to developments in measured inflation has therefore declined, and the weight of relative price changes has increased accordingly. It is likely that this can be attributed in part to the fact that inflation has fallen and become more stable, which in turn is due in part to more firmly anchored inflation expectations (see Pétursson, 2018).

Chart 2 shows more clearly the comparison between recent developments in measured and underlying inflation. The new measure indicates that underlying inflation exceeded measured inflation at the beginning of the period, but that this turned around at the end of 2016. Since then, house prices have risen sharply and have been the main driver of measured inflation but have had a negligible impact on the common component of the CPI. Underlying inflation subsided, however, when imported goods prices fell markedly in response to the appreciation of the króna and when the rise in private services prices began to ease.

Chart 2 also compares the new measure of underlying inflation with other measures that the Bank has been using. The new measure lies at the upper boundary of the high-low range in the first half of the period. This turns around at the end of 2016, and from that time onwards, the new measure indicates lower underlying inflation than most of the others do. The difference has narrowed in the recent term, however, and all of the measures indicate that underlying inflation has been on the rise since autumn 2017. The new measure and the median value of the measures of underlying inflation indicate that underlying inflation measured 2.3% in April.

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Appendix 1

Forecast tables

Table 1 GDP and its main components[1]

	2016	*2017*	*2018*	*2019*	*2020*
Private consumption	7.1 (7.1)	7.8 (7.5)	6.3 (6.4)	3.8 (4.0)	3.1 (2.9)
Public consumption	2.3 (1.9)	2.6 (2.7)	1.9 (2.3)	2.0 (2.5)	2.1 (2.6)
Gross capital formation	22.5 (22.8)	9.3 (9.0)	6.5 (3.8)	8.9 (5.4)	2.9 (1.2)
Business investment	26.4 (26.4)	4.3 (2.6)	-2.5 (-2.0)	6.7 (3.3)	-0.3 (-3.7)
Residential investment	26.4 (29.4)	21.6 (23.1)	24.7 (21.4)	13.2 (12.0)	11.8 (14.3)
Public investment	-0.1 (-1.0)	23.4 (28.4)	27.2 (8.6)	11.5 (4.8)	3.1 (0.6)
Domestic demand	9.0 (8.9)	6.8 (7.0)	5.2 (4.4)	4.6 (3.9)	2.8 (2.5)
Exports of goods and services	10.9 (10.9)	4.8 (3.2)	3.3 (4.4)	3.2 (4.1)	2.6 (2.3)
Imports of goods and services	14.5 (14.5)	11.9 (11.0)	7.7 (7.4)	6.6 (6.3)	2.9 (1.7)
Gross domestic product (GDP)	7.5 (7.4)	3.6 (3.4)	3.3 (3.2)	3.0 (3.0)	2.7 (2.7)
GDP at current prices (ISK billions)	2,453 (2,449)	2,555 (2,540)	2,719 (2,684)	2,897 (2,847)	3,061 (2,994)
GDP at current prices (growth rate)	9.8 (9.7)	4.1 (3.7)	6.4 (5.7)	6.6 (6.1)	5.7 (5.2)
Total investment (% of GDP)	21.4 (21.3)	22.1 (22.0)	22.9 (22.0)	23.7 (22.3)	23.5 (21.8)
Business investment (% of GDP)	15.5 (15.4)	15.1 (14.7)	14.2 (13.7)	14.3 (13.5)	13.6 (12.5)
Gross national saving (% of GDP)[2]	29.2 (29.2)	25.8 (25.9)	24.2 (23.9)	24.5 (23.7)	24.6 (23.6)
Contribution of net trade to GDP growth (percentage points)	-0.8 (-0.8)	-2.7 (-3.1)	-1.7 (-1.1)	-1.4 (-0.9)	-0.1 (0.3)

1. Year-on-year change (%) unless otherwise specified (figures in parentheses are from the forecast in *Monetary Bulletin* 2018/1). 2. The sum of investment, inventory changes, and the current account balance.

Sources: Statistics Iceland, Central Bank of Iceland.

Table 2 Global economy, external conditions, and exports[1]

	2016	*2017*	*2018*	*2019*	*2020*
Marine production for export	-2.0 (-2.0)	-3.9 (-3.8)	4.0 (4.0)	2.0 (2.0)	2.0 (2.0)
Aluminium production for export[2]	-3.0 (-3.0)	4.9 (4.5)	1.0 (0.5)	1.0 (1.0)	1.0 (1.0)
Foreign currency prices of marine products	0.2 (0.2)	-0.8 (-0.9)	3.5 (2.5)	2.7 (2.0)	2.0 (2.0)
Aluminium prices in USD[3]	-13.7 (-13.7)	20.3 (20.1)	13.0 (9.0)	1.7 (1.0)	1.0 (1.0)
Fuel prices in USD[4]	-15.6 (-15.7)	23.3 (23.6)	19.9 (12.8)	-3.1 (0.0)	-2.1 (0.0)
Terms of trade for goods and services	2.4 (2.4)	1.7 (1.6)	-0.4 (0.0)	1.8 (1.0)	0.9 (0.1)
Inflation in main trading partners[5]	1.0 (1.0)	1.7 (1.7)	1.8 (1.7)	1.8 (1.8)	1.9 (1.9)
GDP growth in main trading partners[5]	1.8 (1.8)	2.4 (2.3)	2.4 (2.3)	2.2 (2.1)	2.0 (1.9)
Main trading partners' imports[5]	3.4 (3.4)	4.0 (3.9)	4.4 (4.1)	4.2 (3.9)	3.5 (3.8)
Policy rates in main trading partners (%)[6]	0.1 (0.1)	0.2 (0.2)	0.6 (0.5)	0.8 (0.8)	1.1 (1.0)

1. Year-on-year changes (%) unless otherwise specified (figures in parentheses are from the forecast in *Monetary Bulletin* 2018/1). 2. According to Statistics Iceland's external trade data. 3. Forecast based on aluminium futures and analysts' forecasts. 4. Forecast based on fuel futures and analysts' forecasts. 5. Forecast based on Consensus Forecasts, Global Insight, IMF and OECD. 6. Forecast based on main trading partners' forward policy rates.

Sources: Bloomberg, Consensus Forecasts, Global Insight, IMF, New York Mercantile Exchange, OECD, Statistics Iceland, Thomson Reuters, Central Bank of Iceland.

Table 3 Current account balance and its subcomponents[1]

	2016	*2017*	*2018*	*2019*	*2020*
Trade balance	6.3 (6.3)	4.1 (3.7)	2.1 (2.5)	1.4 (2.0)	1.6 (2.2)
Balance on primary income[2]	1.4 (1.4)	-0.5 (-0.2)	-0.8 (-0.6)	-0.7 (-0.5)	-0.6 (-0.4)
Current account balance	7.7 (7.7)	3.7 (3.5)	1.3 (1.9)	0.8 (1.5)	1.0 (1.8)

1. % of GDP (figures in parentheses are from the forecast in *Monetary Bulletin* 2018/1). 2. The sum of primary and secondary income.

Sources: Statistics Iceland, Central Bank of Iceland.

Table 4 Public sector finances[1]

	2016	2017	2018	2019	2020
Overall Treasury balance	12.3 (12.3)	1.2 (0.9)	0.8 (1.4)	0.6 (1.3)	0.5 (1.2)
Primary Treasury balance	15.1 (15.1)	4.0 (3.3)	3.2 (3.9)	2.3 (3.6)	2.1 (3.2)
Primary Treasury balance excluding one-off items[2]	3.3 (3.5)	2.2 (1.7)	1.5 (2.9)	0.9 (2.9)	0.3 (2.8)
Overall general government balance	12.7 (12.7)	1.5 (1.1)	1.0 (1.6)	0.8 (1.5)	0.6 (1.4)
Primary general government balance	15.6 (15.6)	4.5 (3.8)	3.9 (4.6)	2.9 (4.3)	2.7 (3.8)
Total general government debt	53 (53)	42 (45)	40 (39)	37 (37)	37 (37)
Net general government debt[3]	41 (41)	35 (35)	32 (29)	29 (28)	29 (27)

1. % of GDP on an accrual basis (figures in parentheses are from the forecast in *Monetary Bulletin* 2017/4). 2. One-off items are stability contributions, accelerated write-down of indexed mortgage loans, special payment to LSR-A division and dividends in excess of the National Budget 3. Net debt is defined here as total liabilities excluding pension obligations and accounts payable and net of cash and bank deposits.

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

Table 5 Labour market and factor utilisation[1]

	2016	2017	2018	2019	2020
Unemployment (% of labour force)	3.0 (3.0)	2.8 (2.8)	2.9 (2.8)	3.0 (3.2)	3.4 (3.5)
Employment rate (% of population aged 16-74)	81.1 (81.1)	80.3 (80.3)	79.7 (80.0)	79.5 (79.6)	79.1 (79.2)
Total hours worked	3.0 (3.0)	1.2 (1.2)	2.2 (2.3)	1.6 (1.7)	1.0 (1.2)
Labour productivity[2]	4.4 (4.3)	2.4 (2.2)	1.1 (0.9)	1.4 (1.3)	1.7 (1.5)
Unit labour costs[3]	4.0 (4.6)	5.2 (4.3)	6.7 (5.5)	4.6 (4.9)	2.4 (2.7)
Wage share (% of gross factor income)	61.4 (60.7)	64.3 (63.2)	66.6 (65.1)	67.4 (66.3)	67.0 (66.5)
Real disposable income	9.2 (9.2)	8.0 (7.1)	7.2 (5.9)	4.9 (5.9)	2.3 (2.2)
Output gap (% of potential output)	3.3 (3.4)	2.0 (1.7)	1.2 (1.1)	0.9 (0.8)	0.3 (0.2)

1. Year-on-year change (%) unless otherwise specified (figures in parentheses are from the forecast in *Monetary Bulletin* 2018/1). 2. GDP per total hours worked. 3. Wage costs divided by productivity.

Sources: Statistics Iceland, Central Bank of Iceland.

Table 6 Exchange rate and inflation[1]

	2016	2017	2018	2019	2020
Trade-weighted exchange rate index[2]	179.9 (179.9)	160.3 (160.3)	158.0 (158.9)	154.3 (156.0)	154.3 (154.4)
Real exchange rate (relative consumer prices)[3]	89.1 (89.1)	99.7 (99.7)	101.9 (101.4)	105.1 (103.6)	106.0 (105.6)
Real exchange rate (relative unit labour costs)[3]	85.9 (85.7)	99.9 (98.8)	106.5 (103.5)	112.0 (108.6)	111.9 (109.9)
Inflation (consumer price index, CPI)	1.7 (1.7)	1.8 (1.8)	2.6 (2.6)	2.6 (2.2)	2.8 (2.8)
Inflation (CPI excluding effects of indirect taxes)	1.7 (1.7)	1.5 (1.5)	2.5 (2.5)	2.6 (2.7)	2.8 (2.8)

1. Year-on-year change (%) unless otherwise specified (figures in parentheses are from the forecast in *Monetary Bulletin* 2018/1). 2. Narrow trade-weighted basket (index, 31 December 1991 = 100). 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. Average 2005 = 100.

Sources: Statistics Iceland, Central Bank of Iceland.

Table 7 Quarterly inflation forecast (%)[1]

Quarter	*Inflation (year-on-year change)*	*Inflation excluding effects of indirect taxes (year-on-year change)*	*Inflation (annualised quarter-on-quarter change)*
		Measured value	
2017:2	1.7 (1.7)	1.5 (1.5)	3.7 (3.7)
2017:3	1.7 (1.7)	1.4 (1.4)	1.0 (1.0)
2017:4	1.8 (1.8)	1.6 (1.6)	2.5 (2.5)
2018:1	2.5 (2.4)	2.4 (2.3)	2.5 (2.4)
		Forecasted value	
2018:2	2.4 (2.5)	2.3 (2.5)	3.4 (4.2)
2018:3	2.7 (2.7)	2.6 (2.6)	2.2 (1.7)
2018:4	2.9 (2.6)	2.8 (2.5)	3.5 (2.2)
2019:1	2.6 (2.2)	2.6 (2.7)	1.5 (0.7)
2019:2	2.5 (2.2)	2.5 (2.7)	2.8 (4.3)
2019:3	2.5 (2.1)	2.5 (2.6)	2.4 (1.4)
2019:4	2.6 (2.2)	2.6 (2.7)	3.5 (2.5)
2020:1	2.8 (2.7)	2.7 (2.7)	2.3 (2.6)
2020:2	2.9 (2.8)	2.9 (2.8)	3.6 (4.9)
2020:3	2.9 (2.8)	2.8 (2.8)	2.0 (1.1)
2020:4	2.8 (2.8)	2.7 (2.8)	3.1 (2.6)
2021:1	2.6 (2.5)	2.5 (2.5)	1.6 (1.6)
2021:2	2.5	2.4	3.2

1. Figures in parentheses are from the forecast in *Monetary Bulletin* 2018/1.

Sources: Statistics Iceland, Central Bank of Iceland.