MONETARY BULLETIN

2015•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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The Central Bank of Iceland, Kalkofnsvegur 1, 150 Reykjavík, Iceland
Tel: (+354) 569 9600, fax: (+354) 569 9605
E-mail: sedlabanki@sedlabanki.is
Website: www.sedlabanki.is

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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 13 May 2015

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 4.5%.

According to the Bank's newly published forecast, GDP growth will measure about 4½% this year and will average just under 4% per year over the forecast horizon, which is more than was forecast in February. A positive output gap will develop this year and peak in 2016. The recovery of the labour market has gained momentum in the recent term. Given substantial wage demands currently being put forward, it could be concluded that excess demand has already developed in the labour market, or at least that the labour market slack has narrowed more rapidly than is consistent with price stability.

Inflation is still low and has been slightly negative if housing costs are excluded. Low global inflation and a stable króna have contained inflation and offset the effects of considerable domestic wage increases. The inflation outlook has deteriorated, however, since the Bank's last forecast. The likelihood of a favourable interaction between low imported inflation and modest wage settlements appears negligible at present, as inflation expectations have risen since the last forecast, after having subsided to target at the beginning of the year. According to the Bank's baseline forecast, inflation will already have risen above the target by the beginning of 2016 and is more likely to overshoot the forecast than to fall below it. Developments taking place in wage negotiations since the forecast was prepared have further exacerbated this risk.

The Bank's interest rate reduction late in 2014 was based on a sharp drop in inflation and the decline in inflation expectations, which led to a larger rise in real rates than was considered warranted at that time by economic conditions and the near-term outlook. At that time, however, the Committee pointed out that large pay increases and strong growth in demand could undermine the recently achieved price stability and require that interest rates be raised again. Recent developments in wage negotiations, in conjunction with the increase in inflation expectations and indications of strong growth in demand, suggest that these conditions are now materialising; therefore, it is likely that it will be necessary to raise interest rates at the MPC's next meeting, which will take place in June.

Strong domestic demand growth and unrest in the labour market

In spite of recent turmoil, the global economic outlook is broadly unchanged since the February Monetary Bulletin*. External conditions have improved, however. Iceland's terms of trade are projected to improve markedly and export growth to pick up strongly this year. Revised figures from Statistics Iceland indicate that GDP growth measured 1.9% in 2014, in line with the Bank's February forecast of 2%. With this, the post-crisis contraction in GDP has reversed in full. As in February, the forecast for 2015 assumes strong GDP growth driven by domestic demand. New data on exports and domestic firms' investment plans imply that GDP growth will be stronger than was assumed in February. Growth is now forecast at 4½% this year and 3½% in 2016, about ½ a percentage point more per year than was projected in February. If the forecast materialises, output growth will average 3¾% per year over the forecast horizon, well above both the thirty-year average and the average projection for Iceland's main trading partners. By the same token, the recovery of the labour market has picked up again. The margin of spare capacity in the economy is estimated to have disappeared following a six-year slack, and a positive output gap is beginning to develop. It will peak at just over 1% of potential output in mid-2016 and then begin to narrow again as the forecast horizon progresses. A growing output gap, rising unit labour costs, and diminishing effects from the recent decline in oil prices will cause inflation to move up towards the target later this year and rise above it by the end of the forecast horizon. Although the baseline forecast provides for relatively large pay rises as a result of the ongoing wage negotiations, there is the risk of even larger wage increases. As is shown in an alternative scenario, such large pay increases could unravel the progress made in bringing inflation to target and anchoring inflation expectations. They could also undermine the economic recovery and the competitive position of the economy, and lead to a reduction in employment.*

I Economic outlook and key uncertainties

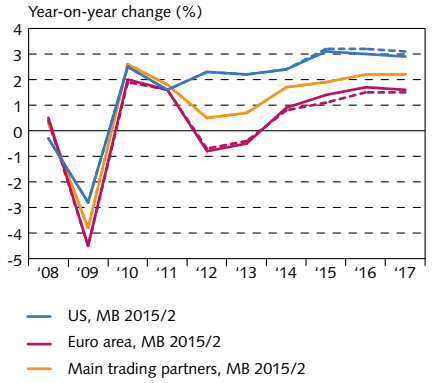
Central Bank baseline forecast[1]

Global economic outlook broadly unchanged from the February forecast …

Global output growth measured 3.4% in 2014, nearly ½ a percentage point below its thirty-year average. The outlook for 2015 and the following two years is broadly unchanged from the Bank's February forecast, although growth prospects for individual countries and regions have changed. Because of the recent decline in oil prices, the International Monetary Fund (IMF) considers the GDP growth outlook for developed countries to have improved since its October forecast. On the other hand, the IMF projects weaker growth for emerging countries, particularly oil exporters that have been hit hard by falling oil prices and countries that carry substantial debt denominated in US dollars and have therefore suffered from the appreciation of the dollar.

As with the global economy as a whole, the GDP growth outlook for Iceland's main trading partners is more or less unchanged from the February forecast. GDP growth is expected to average 1.9% this year, which is an increase of 0.2 percentage points year-on-year but 0.3 percentage points below the thirty-year average for these countries. In the US, growth is projected at approximately 3% over the forecast horizon, slightly less than was forecast in February. The outlook for the euro area has improved, however, although the growth outlook remains tepid. According to the Bank's baseline

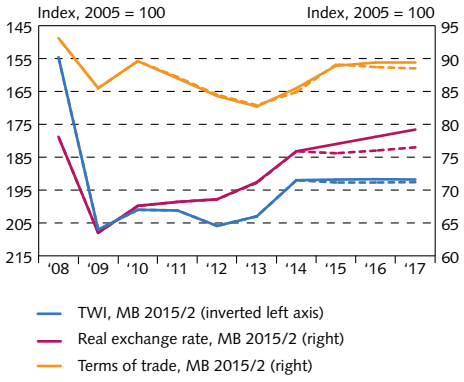
Chart I-1
Global output growth 2008-2017[1]



1. Central Bank baseline forecast 2015-2017. Broken lines show forecast from MB 2015/1.
Sources: Macrobond, OECD, Statistics Iceland, Central Bank of Iceland.

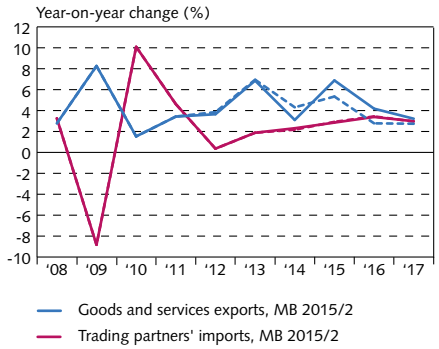
1. The analysis presented in this *Monetary Bulletin* is based on data available in mid-May.

Chart I-2
Exchange rate and terms of trade 2008-2017[1]



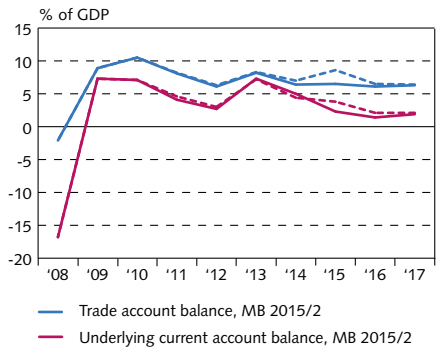
1. Central Bank baseline forecast 2015-2017. Broken lines show forecast from MB 2015/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-3
Exports of goods and services 2008-2017[1]



1. Central Bank baseline forecast 2015-2017. Broken lines show forecast from MB 2015/1.
Sources: Macrobond, Statistics Iceland, Central Bank of Iceland.

Chart I-4
Current account balance 2008-2017[1]



1. Central Bank baseline forecast 2015-2017. Broken lines show forecast from MB 2015/1.
Sources: Statistics Iceland, Central Bank of Iceland.

forecast, trading partners' GDP growth will average 2.2% per year in the next two years, which is unchanged since February (Chart I-1). Uncertainty about the global economic outlook is also broadly unchanged since February. Further discussion of the global economy can be found in Section II, and uncertainties in the global outlook are discussed later in this section.

... but Iceland's external conditions are improving

The króna remained relatively stable in trade-weighted terms, in spite of wide fluctuations in major currency exchange rates. As in previous Central Bank forecasts, it is assumed to remain stable throughout the forecast horizon (Chart I-2). Because inflation is higher in Iceland than among its main trading partners, the outlook is for the real exchange rate to rise by about 4% over the forecast horizon. By the end of the horizon, it will be at about the level prevailing during the prelude to the autumn 2008 financial crisis but about 9% below its thirty-year average.

Preliminary figures from Statistics Iceland indicate that terms of trade improved by about 9% year-on-year in Q4/2014. This was the third consecutive quarter to see an improvement, following a period of continuous erosion stretching back to the beginning of 2011. The improvement during the year turned out to be 3.4%, or 1 percentage point more than was forecast in the February *Monetary Bulletin*, owing mainly to more favourable developments in aluminium and marine product prices. The outlook is for continuing improvement in terms of trade this year, not least because of the steep decline in oil prices since mid-2014. If the forecast materialises, terms of trade will have improved by about 8% in 2017 compared to the post-crisis trough in 2013, although they will remain 13% below the pre-crisis high.

New figures from Statistics Iceland indicate that aluminium and marine product exports were slightly weaker in 2014 than had been expected. The outlook for exports in 2015 and the following two years has improved from the last forecast, however, and growth is now projected at nearly 7% this year. The rise is due primarily to increased exports of services and marine products (Chart I-3). Export growth will lose pace somewhat over the forecast horizon and is expected to align with growth in trading partner demand by the end of the period.

The 2015 trade surplus is now projected at 6½% of GDP instead of the 8½% in the February forecast, mainly because of aircraft imports. It is expected to be very close to 6% throughout the forecast horizon, as was assumed in February (Chart I-4). The underlying current account balance will also develop broadly in line with the February forecast, and a surplus of about 2% of GDP is expected in 2017. Further discussion of the real exchange rate and terms of trade can be found in Section II, and the external balance is discussed in Section IV.

Strong growth in domestic demand ahead

According to figures from Statistics Iceland, private consumption growth picked up strongly in Q4/2014, measuring 4.5% for the

quarter and 3.7% for the year as a whole. This strong growth accords well with the Bank's February forecast and is supported by rising real wages, increased employment, and improvements in households' equity position. It also appears to be in line with the Bank's assessment of the impact of the Government's debt relief measures on private consumption.[2] The outlook for 2015 and the next two years is broadly unchanged as well: growth is projected at nearly 4% this year and close to 3% per year from 2016 onwards, when the demand-side effects of the debt relief measures begin to taper off.

The outlook for investment growth in 2015 has improved since February, however. New information indicates increased investment in ships and aircraft, and the Bank's most recent investment survey suggests that firms plan considerably more investment-related spending than was indicated in the previous survey. Other indicators of investment plans point in the same direction. As a result, total investment is estimated to grow by nearly a fourth this year and business investment by nearly 30%, considerably more than was forecast in February. The pace will ease over the next two years, although growth will remain relatively strong, including in residential and energy-intensive investment. If the forecast materialises, investment will have risen to 20% of GDP by 2017, somewhat above the February forecast but about 1½ percentage points below the thirty-year average.

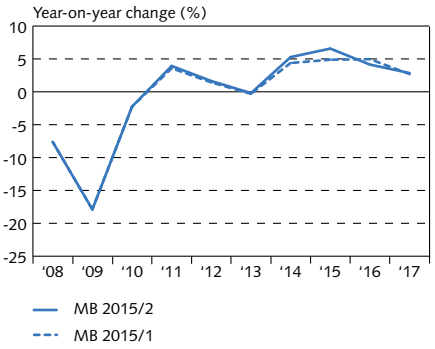
On the whole, domestic demand is forecast to grow by 6½% this year, after nearly 5½% in 2014 (Chart I-5). Growth is forecast at 4% in 2016 and 3% in 2017. If the forecast materialises, domestic demand growth will average 4½% per year during the forecast horizon, somewhat more than was assumed in February. Further discussion of private and public sector demand can be found in Section IV.

Strong output growth during the forecast horizon, and improved outlook since February

GDP growth measured 3% in Q4/2014 and 1.9% for the year as a whole. This was in line with the Bank's February forecast, which estimated year-2014 output growth at 2%. Based on yearly averages, the post-crisis contraction in GDP has therefore reversed in full. There are signs of continued strong growth in Q1/2015. According to the baseline forecast, GDP is projected to grow by 4½% year-on-year. The outlook is for broadly unchanged growth through this year, or about 4.6% for 2015 as a whole (Chart I-6). This is almost ½ a percentage point more than was forecast in February, owing to improved prospects for investment and exports.

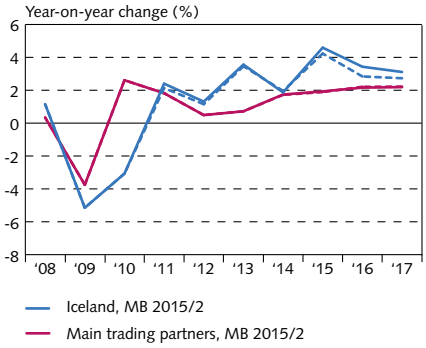
The outlook for 2016 has also improved since February. GDP growth for the year is now projected at 3.4%, about ½ a percentage point more than in the February forecast. Stronger output growth reflects a more positive contribution from net trade, which in turn is due to stronger export growth and weaker import growth. The slow-

Chart I-5
Domestic demand 2008-2017[1]



1. Central Bank baseline forecast 2015-2017.
Sources: Statistics Iceland, Central Bank of Iceland.

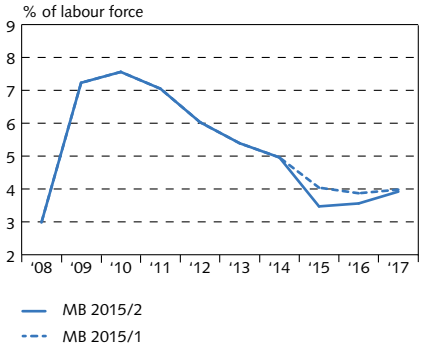
Chart I-6
GDP growth in Iceland and trading partners 2008-2017[1]



1. Central Bank baseline forecast 2015-2017. Broken lines show forecast from MB 2015/1.
Sources: Macrobond, Statistics Iceland, Central Bank of Iceland.

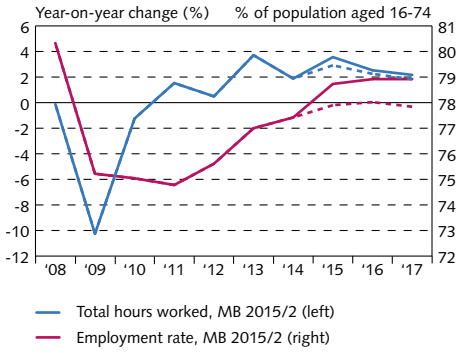
2. In *Monetary Bulletin* 2014/1, the Bank estimated that the measures would increase private consumption by 1.7 percentage points in 2014. This accords well with the change in private consumption growth during the year in comparison with the Bank's forecast from before the decision on the debt relief package was taken (*Monetary Bulletin* 2013/4), as private consumption growth turned out 1.4 percentage points higher than in that forecast.

Chart I-7
Unemployment 2008-2017[1]



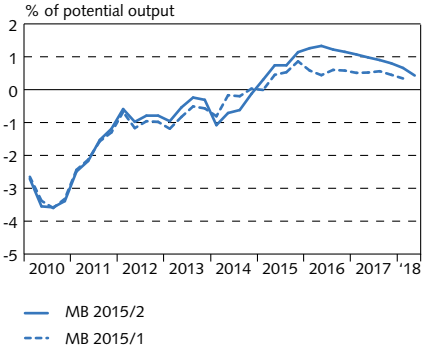
1. Central Bank baseline forecast 2015-2017.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-8
Total hours worked and employment rate 2008-2017[1]



1. Central Bank baseline forecast 2015-2017. Broken lines show forecast from MB 2015/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-9
Output gap[1]
Q1/2010-Q2/2018



1. Central Bank baseline forecast Q1/2015 - Q2/2018.
Source: Central Bank of Iceland.

down in import growth is caused by reduced imports of ships and aircraft in comparison with 2015. GDP growth for 2017 is projected at 3.1%, also about ½ a percentage point more than in the February forecast. As before, the main drivers of output growth during the forecast horizon will be private sector demand; i.e., private consumption and business investment. If the forecast materialises, output growth will average about 3.7% per year in 2015-2017, well above both the thirty-year average and the forecasted 2.1% average for Iceland's main trading partners. Further discussion of developments in GDP growth can be found in Section IV.

Labour market recovery picks up again

According to the Statistics Iceland labour force survey, seasonally adjusted unemployment measured 3.8% in Q1/2015, in line with the Bank's February forecast. Seasonally adjusted unemployment has therefore fallen by 1½ percentage points year-on-year and by more than 4 percentage points from its post-crisis peak. Jobs increased strongly in number in Q1, and total hours worked rose by over 4% year-on-year, nearly 1½ percentage points more than was forecast in February. Other labour market indicators also suggest that the recovery of the labour market has regained its previous strength after the slowdown in H2/2014.

According to the baseline forecast, unemployment will continue to decline, to about 3½% in 2015 and 2016, and then rise to its estimated equilibrium level towards the end of the forecast horizon (Chart I-7). The confidence bands on the estimate of the equilibrium rate remain large, however. Total hours worked will also continue to rise, as will the employment rate, which will measure about 79% from 2016 onwards (Chart I-8). The outlook for the labour market has therefore improved from the February forecast, in line with improved GDP growth prospects. The outlook for productivity growth during the forecast horizon is broadly unchanged since February, however: productivity growth is still forecast to average about 1% per year (see Chart I-10 below), which is about half of the thirty-year average and less than has been seen in previous economic recoveries. Further discussion of the labour market can be found in Section IV.

Spare capacity estimated to be fully absorbed after a slack of nearly six years

Because 2014 GDP growth proved to be in line with the Bank's February forecast, the assessment of the output slack for the year as a whole is broadly unchanged. The margin of spare capacity in the economy is estimated to have closed and a positive output gap will gradually develop. It is projected to peak at 1¼% of potential output around mid-2016 (Chart I-9). This is a somewhat more pronounced output gap than was assumed in the February forecast, as the outlook is for stronger GDP growth during the forecast horizon. According to the forecast, the gap should narrow gradually in the latter half of the forecast horizon and will have almost disappeared by the end of the period. As always, the assessment of the output gap is uncertain.

A discussion of the main uncertainties in the assessment is below, and a discussion of factor utilisation can be found in Section IV.

Inflation rises more rapidly than previously forecast

Inflation rose to 1.6% in March, after having fallen almost uninterrupted since early 2014. In April it retreated slightly, to 1.4%, although it was much lower, or 0%, if the housing component is excluded. Underlying inflation has also risen again. Furthermore, inflation turned out higher in Q1 as a whole than was forecast in February, or 1.1% instead of 0.5%.

Long-term inflation expectations had fallen early in the year. They appeared to be in line with the 2.5% inflation target until the end of February, whereupon they began to rise again. Although it is always difficult to interpret indicators of inflation expectations (see Box 1), the recent spurt appears to be due mainly to expectations that the ongoing wage negotiations will result in very large pay increases. The current rise in inflation expectations is more rapid than the rise occurring in connection with the spring 2011 wage negotiations. The settlements reached then provided for sizeable pay rises, but the increases under discussion now are much larger (see Box 2).

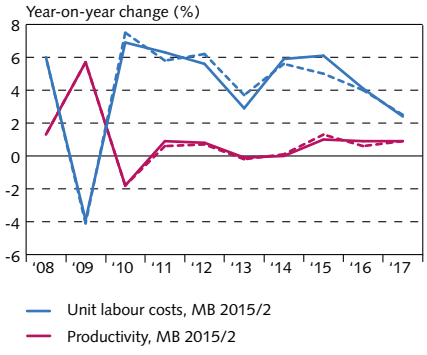
Wages rose by nearly 6% in 2014, whereas current data suggest that labour productivity remained broadly flat. Unit labour costs therefore rose sharply during the year, and the baseline forecast indicates that they will continue to do so for most of the forecast horizon. Unit labour costs are assumed to rise by an average of 4% per year during the forecast horizon, slightly more than was forecast in February and well above the level compatible with long-term price stability (Chart I-10).

As the effects of the recent drop in oil prices on measured inflation taper off, it is increasingly likely that large pay increases and a larger positive output gap will cause inflation to rise again. It is now assumed that inflation will rise to the target in the latter half of 2015, about half a year earlier than was forecast in February (Charts I-11 and I-12). According to the baseline forecast, inflation will continue to rise, measuring just over 3% from mid-2016 to the end of the forecast horizon, when it will begin to subside to the target again. As is discussed below, the outlook for the labour market is extremely uncertain, and there is the risk that wage settlements will entail much larger pay rises than is assumed here. If so, it is possible that inflation will be higher than is provided for in the forecast. The uncertainties in the inflation forecast are discussed below, and developments in global prices and domestic inflation and inflation expectations are discussed in Sections II and V.

Key uncertainties

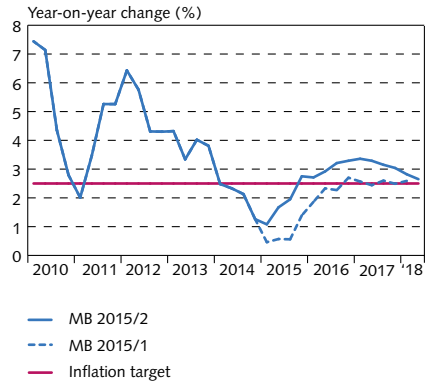
The baseline forecast reflects an assessment of the most likely economic developments over the next three years. It is based on forecasts and assumptions concerning developments in the external environment of the Icelandic economy, as well as assessments of the effectiveness of specific markets and the transmission of monetary policy

Chart I-10
Unit labour costs and productivity
2008-2017[1]



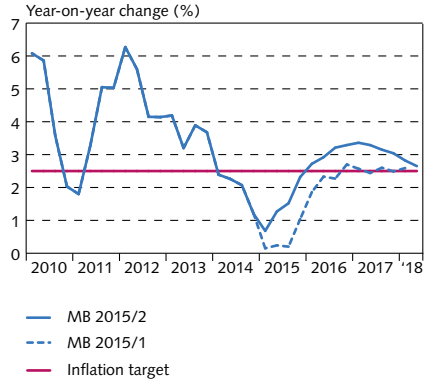
1. Productivity measured as the ratio of GDP to total hours worked. Central Bank baseline forecast 2015-2017. Broken lines show forecast from MB 2015/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-11
Inflation[1]
Q1/2010 - Q2/2018



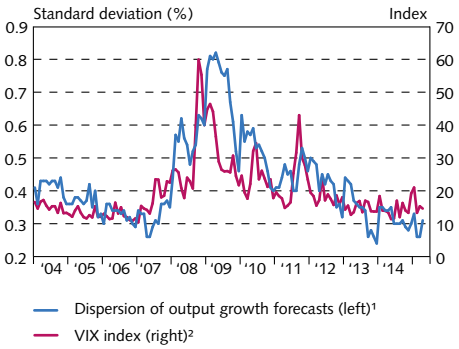
1. Central Bank baseline forecast Q2/2015 - Q2/2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-12
Inflation excluding effects of indirect taxes[1]
Q1/2010 - Q2/2018



1. Central Bank baseline forecast Q2/2015-Q2/2018.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-13
Dispersion of output growth forecasts and implied stock price volatility
January 2004 - April 2015



1. Weighted average of standard deviation in output growth forecasts compiled by Consensus Forecasts for the G7 (weighted with PPP-adjusted GDP). 2. Chicago Board Options Exchange S&P 500 Implied Volatility Index (VIX).

Sources: Consensus Forecasts, Macrobond.

to the real economy. All of these factors are subject to uncertainty. The following is a discussion of several important uncertainties in the forecast.

Global economic recovery may prove weaker than anticipated

There was substantial unrest in the global financial markets earlier this year, following the steep decline in oil prices and unusually wide swings in major currency exchange rates. Even though this uncertainty has not changed materially (Chart I-13), there are clouds on the horizon, as before. Although the depreciation of many currencies against the US dollar is a welcome boost to exports in the countries concerned, it has tested the resilience of balance sheets in many emerging economies with substantial dollar-denominated debt. Expected policy rate hikes in the US could also prove testing and undermine the fragile economic recovery, particularly if they go hand-in-hand with further appreciation of the dollar. Some geopolitical uncertainty remains as well – in connection with unrest in Eastern Europe and the Middle East, for instance – and in the eurozone, uncertainty has increased again in connection with Greece's debt problems. Looking ahead, unusually low inflation and declining inflation expectations in major industrialised countries could indicate that the global output growth outlook is overestimated and that a protracted period of stagnation lies ahead.

Global output growth could turn out stronger than the baseline forecast assumes, however, if the effects of falling oil prices on demand are stronger than currently estimated, or if the European Central Bank's recent stimulative measures in the eurozone prove more successful than is currently assumed. Although the IMF still considers the risk to the global economic recovery to be tilted to the downside, it considers the risk of a contraction in major industrialised countries to be less pronounced now than they did in October 2014.

Exchange rate developments uncertain

As before, the baseline forecast assumes that the exchange rate of the króna will remain stable throughout the forecast horizon. This implies that the trade-weighted exchange rate index (TWI) will remain broadly at the level observed since early 2014 and that the króna will be more or less at its strongest since the onset of the financial crisis. The uncertainty about near-term exchange rate movements is related mainly to possible capital outflows following the liberalisation of the capital controls. Unrest in the labour market and the possibility of substantial nominal wage increases could also weaken the króna and make liberalisation riskier. However, the króna could appreciate more than is provided for in the baseline forecast; e.g., in connection with growing economic activity, improving terms of trade, and foreign currency inflows deriving from strong export growth.

Results of ongoing wage negotiations highly uncertain

The labour market situation is extremely serious and wage demands are such that they could derail the progress made in bringing inflation and inflation expectations back to target. There is also the risk that wage increases well in excess of productivity growth will prompt

firms to seek ways to reduce wage costs by, for instance, slowing staff recruitment or even laying off workers. The recent improvement in Iceland's competitive position, which can be seen, among other things, in strong export growth despite weak output growth among trading partners, would also be under threat. Large increases in wage costs would therefore undermine the economic recovery and cut into the trade surplus that is an important prerequisite for capital account liberalisation.

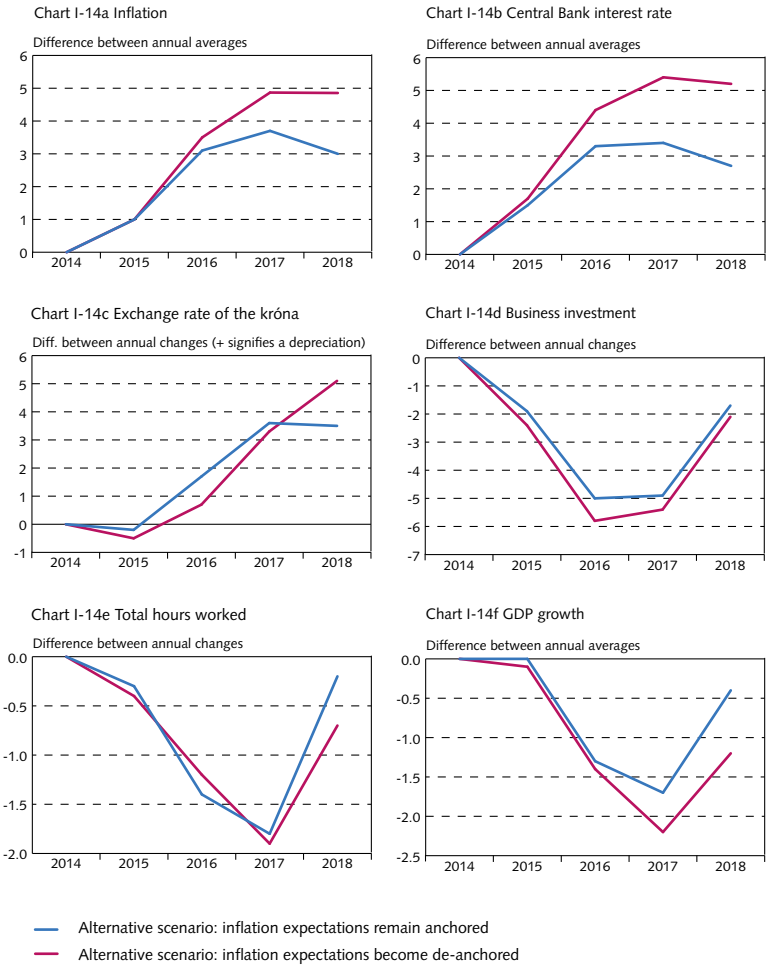
The following alternative scenario shows the possible effects of much larger wage increases than are provided for in the baseline forecast. It is based on wage settlements already concluded and most labour unions' stated demands for similar pay increases. This assumes that wages will rise by approximately 30% in a three-year contract that will take effect in mid-2015. Including wage drift, the alternative scenario assumes that wages will rise by about 11% per year, on average, during the forecast horizon, about twice the amount assumed in the baseline forecast. In addition, the alternative scenario assumes that the wage agreements will be heavily front-loaded, like the contracts used as a reference. Nearly half of the wage increase will therefore take effect this year, and about two-thirds in 2015 and 2016.

Chart I-14 shows the potential impact of such pay increases on key economic variables as a deviation from the baseline forecast in 2014-2018.[3] Two scenarios are shown. In the former, long-term inflation expectations remain sufficiently anchored at the Bank's inflation target, so that expectations move back to target relatively quickly after a short-lived rise in response to increased inflation. In the latter scenario, however, large pay increases undermine the target and expectations are temporarily de-anchored. Under such circumstances, the effects of wage increases on inflation will be much more persistent than in the previous scenario, and it will be more difficult and costlier (in terms of weaker output growth and a lower employment rate) to bring inflation back under control.

Although there is some uncertainty about productivity growth during the forecast horizon, it is clear that such large pay increases are far in excess of the level that can be supported by productivity growth. Strong cost pressures will therefore emerge, and some portion will pass through to prices, thereby increasing inflation. As Chart I-14a shows, inflation could increase compared to the baseline forecast by about 1 percentage point in 2015, almost 3 percentage points in 2016, and nearly 4 percentage points in 2017. The impact is even greater if long-term inflation expectations become de-anchored: in that case, inflation could be roughly 5 percentage points more than in the baseline forecast from 2017 onwards. Based on the current baseline forecast, this implies that inflation could rise to about 6-6½% in 2016 and 7-8% in 2017.

3. The results are based on two of the Bank's macroeconomic models: QMM and DYNIMO. Information on these models can be found in Ásgeir Daníelsson, Magnús F. Gudmundsson, Svava J. Haraldsdóttir, Thorvardur Tjörvi Ólafsson, Thórarinn G. Pétursson, and Rósa Sveinsdóttir (2009), "QMM: A Quarterly Macroeconomic Model of the Icelandic Economy", Central Bank of Iceland *Working Paper*, no. 41, and Martin Seneca (2010), "A DSGE model for Iceland", Central Bank of Iceland *Working Paper*, no. 50.

Chart I-14
Effects of large wage increases on selected economic variables 2014-2018
Deviation from baseline forecast (percentage points)



Source: Central Bank of Iceland.

The main reason inflation does not rise even more than is shown here is that monetary policy will respond with interest rate hikes. Higher interest rates will enable monetary policy to reduce demand and narrow the output gap compared to the baseline forecast. This will slow down the economic recovery. In addition, higher interest rates will support the króna. This will gradually reduce inflation and ensure that it falls back to the target. Chart I-14b shows the possible monetary policy response based on a simple forward-looking monetary policy rule. According to this rule, the Bank's interest rates could be higher than in the baseline forecast by about 1½ percentage points in 2016 and 3½ percentage points in 2017. If the anchor for inflation expectations weakens, however, and inflation expectations rise more rapidly and remain high longer, it will be necessary to raise interest rates still further, thereby creating more slack in the economy. Interest rates could be more than 5 percentage points higher from 2017 onwards than they would otherwise be.

Possible effects on the exchange rate are shown in Chart I-14c. Two offsetting types of impact are at work here: a substantial increase in domestic costs will cause the real exchange rate to rise, putting

downward pressure on the nominal exchange rate, while higher interest rates will support the exchange rate. The overall impact is that the króna will appreciate slightly this year and then begin to weaken, falling to about 8½% below the level in the baseline forecast by 2018.

The effects on the real economy are shown in Charts I-14d-f. Firms will respond to increased costs and higher interest rates by cutting back on investment (Chart I-14d) and labour use (Chart I-14e), both of which will weaken domestic demand and contribute to higher unemployment. Offsetting this will be the effect of higher wage income on private consumption, but here too, higher interest rates and reduced expected future income will weigh on current spending. The overall impact on output growth is shown in Chart I-14f. Year-2015 output growth will change very little, but from 2016 onwards, it will weaken in comparison with the baseline forecast, and by 2017 it will be more than 1½ percentage points below the baseline projection, or about 1½% instead of about 3%. As the chart shows, the greater the effects of pay rises on long-term inflation expectations, the stronger the negative impact on output growth.

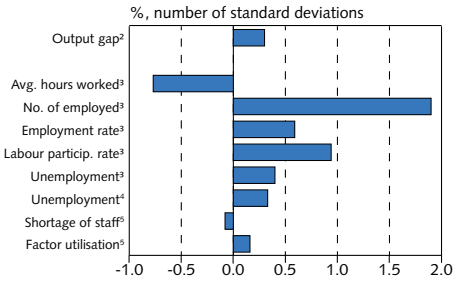
It is appropriate to emphasise that the discussion above is based on results obtained from the Bank's models, which are inevitably a simplified description of reality. Furthermore, such simulations always include some simplifying assumptions. Here, for instance, it is not assumed that large pay increases will weaken the fiscal position, although it is clear that substantial pay rises among public employees would increase expenditures, thereby jeopardising consolidation targets. The simulations also omit the possibility that uncertainty about fiscal sustainability and exchange rate stability (including in the context of the capital account liberalisation strategy) could cause risk premia on domestic financial assets to rise, thereby raising cost of funding for domestic entities (including the public sector). This could exacerbate instability and put even more pressure on the exchange rate. Furthermore, inflation could rise more rapidly than the Bank's models indicate, as it did in the wake of the spring 2011 wage settlements (see Box 2). Given all of these factors, the effects of such large pay rises could therefore be underestimated in the simulations shown here.

Uncertainty in the assessment of the business cycle position

According to the baseline forecast, the slack in the economy has disappeared. Most of the indicators used to assess factor utilisation suggest either that the slack is all but fully absorbed or that a positive output gap has already developed (Chart I-15). The number of average hours worked still appears to be below its historical average, however (see Section IV and Box 3). There is some uncertainty about the assessment of the output gap, due in part to uncertainty about estimates of recent economic activity.

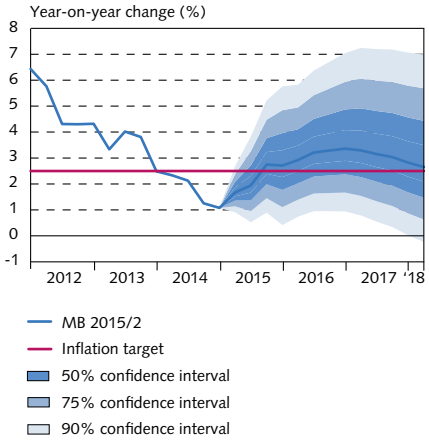
According to the baseline forecast, a positive output gap will begin to develop soon and will peak at 1¼% of potential output in mid-2016. This is in line with the outlook for the above-mentioned indicators and the prospect that the wage share will be close to its historical average this year (see Section V). This assessment is also highly uncertain. As is discussed above, the global output growth outlook is

Chart I-15
Indicators of output gap in Q1/2015[1]



1. Deviation in terms of number of standard deviations (apart from output gap). Positive figures indicate labour market pressure while negative figures indicate labour market slack. 2. Output gap in Q1/2015 as % of potential output. 3. Deviation in seasonally adjusted Q1/2015 data from the average for the period Q1/2003-Q1/2015. 4. Deviation in seasonally adjusted unemployment in Q1/2015 from estimated equilibrium unemployment. 5. The share of firms that are short-staffed and are operating near or above capacity, according to the Gallup survey among Iceland's 400 largest firms. Seasonally adjusted deviation in Q1/2015 data from the average for the period Q1/2006-Q1/2015.
Sources: Gallup, Statistics Iceland, Central Bank of Iceland.

Chart I-16
Inflation forecast and confidence intervals
Q1/2012 - Q2/2018



Sources: Statistics Iceland, Central Bank of Iceland.

uncertain, and if trading partners' economic recovery weakens, the output gap could turn out smaller in coming quarters than is assumed in the baseline forecast. The domestic economic outlook is uncertain as well, owing largely to the difficult situation in the labour market. Not only is there the risk that large pay increases will undermine the recovery, but long strikes could cut into growth as well. Furthermore, there is some uncertainty about the scope and timing of energy-intensive development projects, as is discussed in an alternative scenario in *Monetary Bulletin* 2014/4.

Inflation risk profile tilted to the upside

The uncertainties described above show clearly that the inflation outlook for the next three years could easily deviate from the baseline forecast. As is stated above, there is significant risk that pay increases will be considerably larger than is provided for in the baseline forecast. As a result, inflation could be underestimated, and bringing inflation back to target could require higher interest rates than are assumed in the baseline scenario.[4] The same can be said if the króna proves weaker during the forecast horizon than is assumed in the baseline forecast, or if the slack in the economy is overestimated. Inflation could turn out lower than forecast, however, if the slack in the economy is underestimated, if domestic demand proves weaker than assumed, or if the global economic outlook is poorer than currently expected. The same applies if weaker global output growth entails larger declines in global oil and commodity prices, at least insofar as the króna does not weaken as a result.

Chart I-16 illustrates the above-mentioned uncertainties in the inflation forecast by showing the inflation outlook according to the baseline forecast together with the confidence intervals for the forecast; i.e., the range in which there is considered to be a 50-90% probability that inflation will lie over the next three years (the methodology is described in Appendix 3 in *Monetary Bulletin* 2005/1). The uncertain outlook for the labour market implies considerable risk that near-term inflation is underestimated. That risk has increased in the recent term. This is offset in the long run by factors such as the risk of weaker economic activity than is provided for in the baseline forecast; therefore, the probability distribution is more symmetric towards the end of the forecast horizon, although the risk in the inflation forecast is still concentrated on the upside. There is a roughly 50% probability that inflation will be in the 2-4% range in one year and in the 1½-4½% range by the end of the forecast horizon.

4. The baseline forecast is based on the assumption that monetary policy will be applied so as to ensure that inflation remains close to target over the business cycle.

II The global economy and terms of trade

The global economic outlook is broadly unchanged since the February *Monetary Bulletin*. GDP growth remains weak in Iceland's main trading partner countries. Growth has picked up recently in developed countries but slowed in emerging countries. Inflation is widely very low, and many central banks have lowered interest rates and taken other measures to boost demand and prevent low inflation from spilling over into long-term inflation expectations. Currencies have been highly volatile, and oil prices have fallen markedly. Lower oil and commodity prices have had a positive impact on Iceland's terms of trade, and prices of aluminium and marine products have developed favourably in spite of steep overall declines in the commodity markets.

Global economy

Main trading partners' GDP growth firmed up in 2014

GDP growth among Iceland's main trading partners measured 1.7% in 2014, about a percentage point more than in the previous year. The economic recovery in the US and the UK appears to rest on solid ground, with GDP growth measuring 2.4% and 2.8%, respectively, in 2014 (Chart II-1). In the euro area, the recovery is weaker, although the pace picked up towards the end of the year and growth in Q4/2014 exceeded expectations (Chart II-2). GDP growth measured 0.9% for the year as a whole, which is a marked turnaround compared with 2012-2013, when it contracted by about ¾% per year, on average. The recovery varies across the eurozone, however, and some countries are still experiencing a contraction.

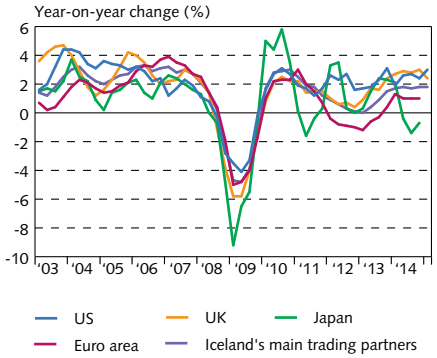
In Japan, the recovery gained momentum in Q4 as well, after two consecutive quarters of contraction following the increase in value-added taxes in April 2014. The recovery in the other Nordic countries has been rather uneven. GDP growth measured just over 2% in Norway and Sweden, as opposed to a mere 0.3% in Denmark and a contraction in Finland.

Growth has slowed in major emerging economies, particularly oil and commodity exporters such as Russia and Brazil. Emerging countries' GDP growth averaged 4.6% in 2014, almost ½ a percentage point less than in 2013. In China, growth continued to slow down, from nearly 8% in 2013 to 7.4% in 2014.

Early 2015 shows signs of increased GDP growth in the eurozone and a temporary setback in the US

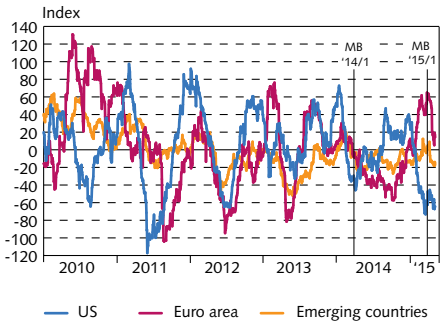
Economic indicators for the euro area have exceeded market expectations. Lower oil prices have increased real disposable income and supported private consumption. Retail sales have therefore picked up in line with improving consumer sentiment, and the depreciation of the euro has stimulated export sectors. Leading indicators imply increased GDP growth in the euro area in Q1/2015 (Chart II-3). The outlook is uncertain, however, as unemployment remains high and willingness to invest is limited. Furthermore, uncertainty about the situation in Greece has escalated once again.

Chart II-1
Global GDP growth
Q1/2003 - Q1/2015



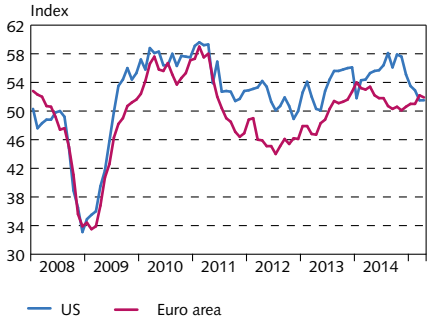
Sources: Macrobond, Central Bank of Iceland.

Chart II-2
Economic surprise index[1]
Daily data 4 January 2010 - 8 May 2015



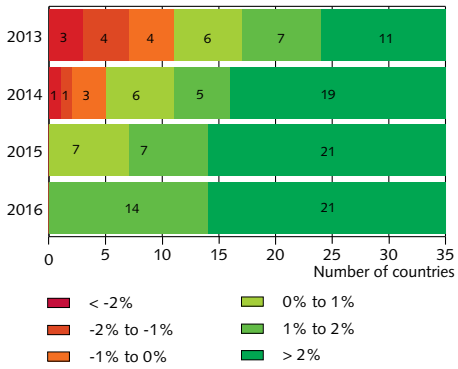
1. When the index is lower than 0, the indicators are more negative than expected; when the index is higher than 0, the indicators are more positive than expected. The index does not imply that the indicators are positive or negative.
Source: Macrobond.

Chart II-3
Leading indicators of GDP growth[1]
January 2008 - April 2015



1. In the US and the euro area, the seasonally adjusted Manufacturing Purchasing Managers' Index (PMI) is published monthly. An index value above 50 indicates month-on-month growth, and a value below 50 indicates a contraction.
Sources: Bloomberg, Macrobond.

Chart II-4
Distribution of GDP growth among 35 industrialised countries



Source: IMF.

Unlike the situation in the eurozone, economic indicators from the US have been disappointing in the recent term. Temporary factors such as inclement weather have affected the construction industry, and the appreciation of the US dollar has weakened exporters' competitive position. Quarter-on-quarter GDP growth measured only 0.1% in Q1, and indicators for the manufacturing sector show no signs of a pickup in Q2 as yet (Chart II-3). Job growth has been strong, however, with unemployment down a percentage point year-on-year, to 5.5% in March.

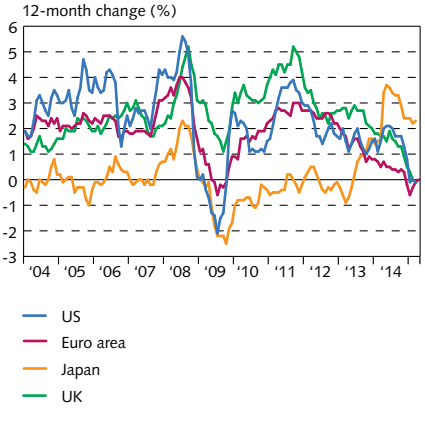
GDP growth outlook for major trading partners unchanged since February

In its new forecast, the International Monetary Fund (IMF) projects global GDP growth in 2015 at 3.5%, which is about the same as in the past two years and nearly ½ a percentage point below the thirty-year average. The GDP growth outlook is broadly unchanged from the IMF's January forecast but slightly weaker than in the October forecast, even though the Fund estimates that the plunge in oil prices will increase global growth by ½-1 percentage point this year. Other factors, such as increased pessimism about underlying growth potential, are considered to weigh heavier.

Although emerging and developing countries continue to account for the majority of global output growth, the IMF expects growth in those countries to keep slowing, to about 4.3% this year. At the same time, it is thought that GDP growth will increase in developed countries, to 2.4%, or about ½ a percentage point more than in 2014. As Chart II-4 shows, the number of industrialised countries with GDP growth in excess of 1% is expected to rise, and none of them will experience a contraction this year.

Among Iceland's main trading partners, growth will also pick up slightly, rising to 1.9%, an increase of 0.2 percentage points since 2014 and over 1 percentage point since 2013. The outlook for GDP growth in trading partner countries during the forecast horizon is unchanged since the February *Monetary Bulletin*, with growth forecast at 2.2% per year in 2016 and 2017.

Chart II-5
Inflation in selected industrialised countries
January 2004 - April 2015



Source: Macrobond.

Unchanged outlook for world trade and trading partner demand

The outlook for world trade and trading partner demand has likewise remained broadly unchanged from the February forecast. Trading partners' imports are projected to grow by 2.9% this year, about ½ a percentage point more than in 2014. The main contributor to the rise is the increased economic activity in the euro area.

Inflation has subsided somewhat more than expected, and deflation is widespread

Inflation and inflation expectations have subsided among Iceland's main trading partners and are below target levels in many of them. This development is due to the decline in oil and commodity prices, although there is a slack in output in many economies as well. Concerns about protracted deflation in the eurozone have abated with improved economic indicators following the expansion of the

European Central Bank's (ECB) bond purchase programme. According to preliminary numbers, prices were unchanged year-on-year in April, following a four-month deflationary episode (Chart II-5), and the outlook is for euro area inflation to remain low for quite some time. The ECB's March forecast assumes that prices will remain unchanged this year and that inflation will be below the bank's 2% inflation target until at least 2017. In the UK, prices were also unchanged year-on-year in March, for the second consecutive month, and prices in the US fell 0.1% from the prior year. Lower oil and food prices have been a major contributor to low inflation in major industrialised countries. The IMF estimates that the drop in oil prices has lowered inflation by 1 percentage point overall. Underlying inflation is also low. Inflation excluding energy and food prices was 1.8% in the US and about 1% in the UK, but only 0.6% in the euro area. Underlying inflation has begun inching upwards in the recent term.

Among Iceland's main trading partners, inflation averaged 0.4% in the first quarter, the lowest since 2009. It is projected at 0.6% per year overall, or 0.2 percentage points less than was forecast in February. The outlook for the forecast horizon as a whole has also been revised downwards.

Long-term interest rates at an all-time low in Europe and growing divergence in the monetary stance among developed countries …

A number of central banks in developed and emerging countries have cut interest rates recently or stepped up their bond purchases in response to declining inflation and inflation expectations and a poorer GDP growth outlook, or to defend their exchange rate pegs. Three central banks' key rates and the ECB's deposit rates were negative at the beginning of May. The Bank of Japan announced increased bond purchases in October, and in March the ECB greatly expanded its programme of corporate and government bond purchases. Financial conditions in the eurozone have therefore improved, and the contraction in lending has eased (Chart II-6).

Long-term government bond interest rates are at an all-time low in Europe and are negative in some instances (Chart II-7). In developed countries, the decline in long-term nominal rates is considered to reflect expectations of both lower long-term inflation and prolonged low real rates. Expectations that real rates will remain low for the long term could reflect increased pessimism about the GDP growth outlook, but it is also thought that term premia have declined. According to forward interest rates, market agents expect the US Federal Reserve Bank to raise rates in the latter half of 2015, followed by the Bank of England in the beginning of 2016, somewhat later than they expected previously. As before, forward rates indicate that investors expect eurozone interest rates to be held low for the foreseeable future (Chart II-8).

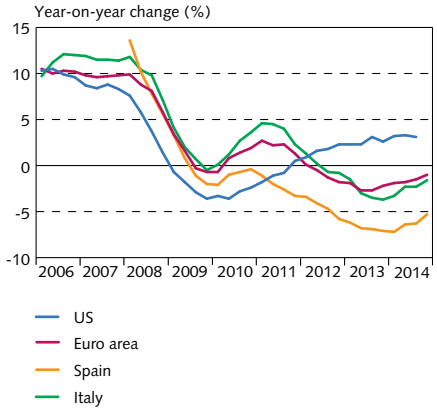
… which has surfaced in unusually wide exchange rate swings

Following the wave of interest rate cuts, capital has shifted to higher-risk investments, and from countries with low-yielding currencies and weak output growth prospects to those offering higher expected

Chart II-6

Credit growth in the US and the euro area[1]

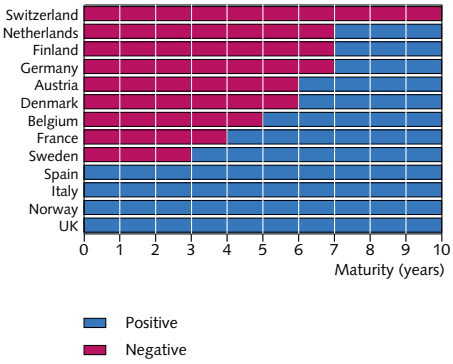
Q1/2006 - Q4/2014



1. Non-financial companies and households.
Source: IMF.

Chart II-7

Interest rates in European government bond markets

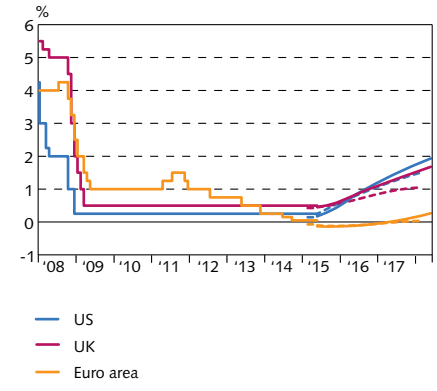


Source: Salmon, C. (2015). Financial market volatility and liquidity - a cautionary note. Speech 13 March 2015.

Chart II-8

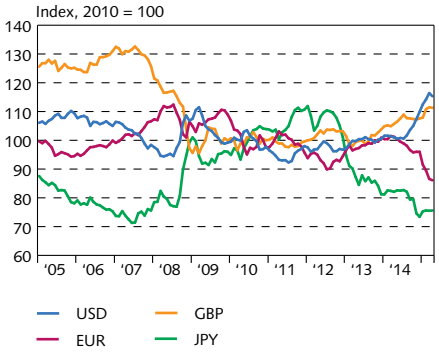
Policy rates and forward rates in the US, UK, and euro area[1]

Daily data 1 January 2008 - 8 May 2015, quarterly data Q2/2015 - Q2/2018



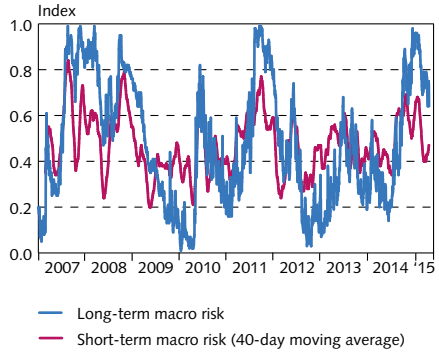
1. Forward rates are based on 6-month overnight index swaps (OIS). Solid lines show forward rates from 11 May 2015, broken lines from 30 January 2015.
Sources: Bloomberg, Macrobond.

Chart II-9
Effective exchange rate of selected currencies
January 2005 - April 2015



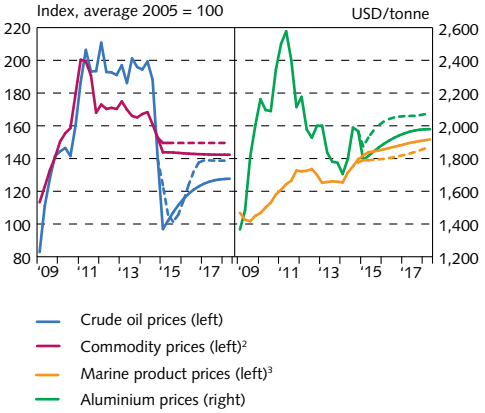
Source: J.P. Morgan.

Chart II-10
Macro Risk Index[1]
Daily data 1 January 2007 - 8 May 2015



1. A value of zero means low risk aversion, and one means high risk aversion. The Citi Index on risk aversion in global financial markets measured by emerging market sovereign spreads; the US TED spread; US and European corporate CDS spreads; and implied FX, equity, and swap rate volatility.
Source: Macrobond.

Chart II-11
Prices of marine products, aluminium, oil, and commodities[1]
Q1/2009 - Q2/2018



1. Central Bank baseline forecast Q2/2015 - Q2/2018. Broken lines show forecast from MB 2015/1. 2. Non-oil commodity prices in USD. 3. Foreign currency prices of marine products are calculated by dividing marine product prices in Icelandic krónur by the export-weighted trade basket.
Sources: Bloomberg, London Metal Exchange, Nymex, Statistics Iceland, Central Bank of Iceland.

returns. Share prices have risen in many markets, following a drop in December and January, and currency exchange rates have been relatively volatile. The US dollar, for instance, has appreciated markedly against most other currencies and has risen by nearly a fifth in trade-weighted terms in a year's time (Chart II-9). Although this is the second-largest twelve-month rise in the dollar in terms of the trade basket in fifty years, the dollar remains almost 5% below the fifty-year average. The Swiss franc has appreciated as well since the Swiss National Bank announced the abolition of the ceiling on the franc-euro exchange rate. The pound sterling has also appreciated in trade-weighted terms, whereas the euro and the yen have depreciated. The depreciation should support economic recovery in those countries, as interest rates are close to the zero lower bound, leaving limited scope for monetary stimulus through rate cuts. For this reason, the IMF is of the view that recent exchange rate movements could increase year-2015 GDP growth by approximately ⅓ of a percentage point. Such wide swings in exchange rates exacerbate uncertainty, however, and tests balance sheet strength in many emerging countries with substantial debt denominated in dollars (Chart II-10).

Export prices and terms of trade

Export prices outpaced expectations in late 2014, and marine prices rose sharply in early 2015

Foreign currency prices of marine products have risen substantially in the past twelve months, reversing a cycle of price declines that started in late 2012. The rise in the second half of 2014 somewhat exceeded expectations, and by March prices had risen by 13% year-on-year. Market agents are of the opinion that such steep price increases will not continue, as prices are already high relative to competitive and substitute products. As a result, it is assumed that the increase in marine product prices will lose pace over the course of this year. Nonetheless, it is estimated that the increase between annual averages will be about 6%, some 3 percentage points more than was forecast in February (Chart II-11).

After a slight rise in H2/2014, global aluminium prices dropped suddenly in December and have hovered around 1,800 US dollars per tonne since the beginning of the year. Prices are now 6% higher than they were a year ago, in spite of an 8% quarter-on-quarter decline in Q1/2015. Aluminium inventories have been large, and this, together with declines in the price of other metals and commodities, has been the main reason aluminium prices have not risen in recent quarters. Inventory levels have fallen in the recent term, however, and are now down a fourth year-on-year. In a departure from the pattern in the international markets, figures from Statistics Iceland indicate that aluminium prices to domestic manufacturers rose somewhat at the end of 2014; therefore, the twelve-month rise in 2014 turned out larger than had been assumed in the Bank's February forecast. In line with futures prices and international forecasts, it is now assumed that aluminium prices will rise marginally in 2015, to about 1,860 US dollars per tonne by the year-end (Chart II-11).

Oil prices appear to have bottomed out in Q1/2015 …

Oil prices were down by half year-on-year in the first quarter of 2015. Although demand tapered off in line with a weak global economic recovery, the sudden drop was due mainly to a surge in supply, particularly in the US, where new methods have been developed for oil extraction (Chart II-12). The outlook is still for oil prices to recover partly over the forecast horizon. Prices are forecast at around 60 dollars per barrel this year, rising to 73 dollars by mid-2018 (Chart II-11).

… while other commodity prices are expected to continue falling

US dollar prices of non-oil commodities have continued to give way, however, falling by about 6% quarter-on-quarter in Q1/2015 and hitting a five-year low. Metal prices declined 10% between quarters and are now down 25% year-on-year. One of the reasons is the slowdown in GDP growth in China, as the investment-driven growth in recent years has kept prices high. In March, food prices had fallen by 9% since Q4/2014. US dollar prices of commodities are forecast to fall by over 11% this year (Chart II-11).

Improvement in terms of trade exceeds expectations

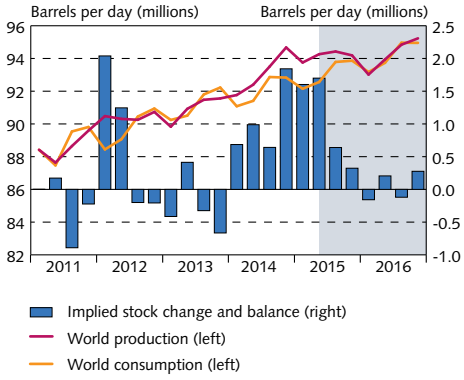
The improvement in terms of trade for goods and services that began in Q2/2014 gained momentum as the year progressed. Preliminary figures from Statistics Iceland indicate that they improved by about 9% in Q4 (Chart II-13). For the year as a whole, they improved by 3.4%, about a percentage point more than was assumed in the February forecast. The difference is due primarily to a larger increase in export prices in Q4, although import prices fell more than expected as well. An improvement of 4% is projected for this year, bringing the total improvement to 7½% in two years' time, which is in line with the February forecast. Terms of trade remain 14% below their pre-crisis peak, however.

Real exchange rate at post-crisis high

The real exchange rate rose to a post-crisis high in Q1/2015 (Chart II-13). It rose by 1.6% year-on-year due to a 0.8% rise in the nominal exchange rate, although inflation in Iceland was also 0.8 percentage points above the average for Iceland's main trading partners. In spite of this increase, the real exchange rate is still 9% below its thirty-year average in terms of relative consumer prices.

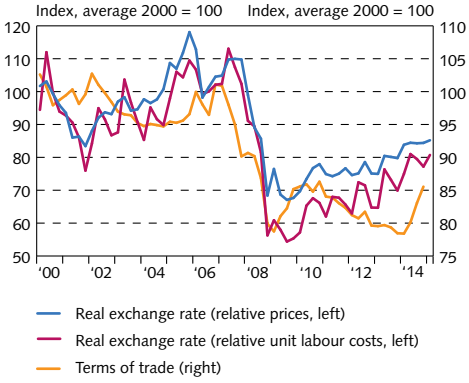
In terms of relative wage costs, it was up 7.7% year-on-year, as unit labour costs in Iceland have risen by nearly 7 percentage points more than the average in trading partner countries (Chart II-14). Therefore, the post-crisis improvement in Iceland's competitive position is rapidly disappearing. Since 2009, unit labour costs have risen much faster in Iceland than they have abroad, and the real exchange rate has risen, eroding the competitive position accordingly (Chart II-13).

Chart II-12
World liquid fuels production and consumption balance[1]
Q1/2011 - Q4/2016



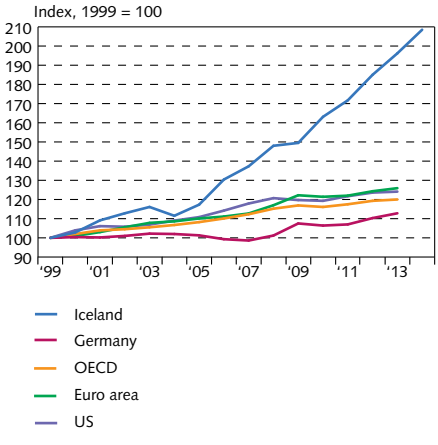
1. Forecast Q2/2015 - Q4/2016.
Source: U.S. Energy Information Administration.

Chart II-13
Real exchange rate and terms of trade
Q1/2000 - Q1/2015



Source: Central Bank of Iceland.

Chart II-14
Unit labour costs in developed countries



Sources: Macrobond, Central Bank of Iceland.

III Monetary policy and domestic financial markets

The Central Bank's nominal interest rates have been unchanged since February, but its real rate has declined with the rise in inflation and inflation expectations. Market agents expect the Bank's nominal rates to be raised this year – and more rapidly than they projected in January. Long-term nominal rates have risen while long-term real rates have fallen. Risk premia on Treasury foreign obligations have declined, however, and the terms offered to the Icelandic commercial banks in international markets have improved. The króna has remained relatively stable in trade-weighted terms but has depreciated against the US dollar, as have most other currencies. Growth in money holdings has slowed down. At the same time, credit growth to households has remained broadly unchanged, excluding the effects of the Government's debt relief measures, while corporate lending has gained pace. Asset prices have risen, and private sector debt has declined. Private sector financial conditions have therefore continued to improve.

Monetary policy

Nominal Central Bank interest rates unchanged …

At its rate-setting meetings in February and March, the Central Bank of Iceland Monetary Policy Committee (MPC) decided to keep the Bank's interest rates unchanged. Prior to the publication of this *Monetary Bulletin*, the Bank's key interest rate – the rate on financial institutions' seven-day term deposits with the Bank – was 4.5%.[1]

Since February, when the last *Monetary Bulletin* was published, overnight rates in the interbank market have remained below the centre of the interest rate corridor, close to the Bank's key rate (Chart III-1), but market turnover has been limited. Accepted yields in Treasury bill auctions have declined slightly, however. This may be due in part to increased demand stemming from the amendments made in March to the Central Bank's lists of exempted securities, which restrict offshore ISK owners' investments to Treasury bills only.

… but the real Central Bank rate has fallen …

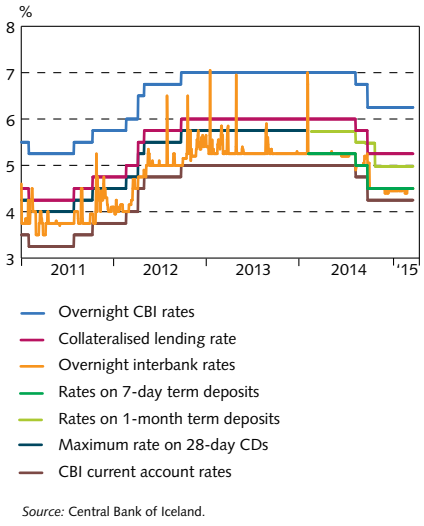
The monetary stance has eased overall, however, owing to the rise in inflation and inflation expectations (Table III-1). The Bank's real rate is now about 3% in terms of the current inflation level and 1.7% in terms of the average of various measures of inflation and inflation expectations, which is over ½ a percentage point lower than prior to the *Monetary Bulletin* in February and in May 2014. Other real rates in the market have also fallen broadly in line with the Bank's real rate (Chart III-2).

1. The MPC's voting pattern over its six-year history is discussed in Box 4.

Chart III-1

Central Bank of Iceland interest rates and short-term market rates

Daily data 3 January 2010 - 8 May 2015

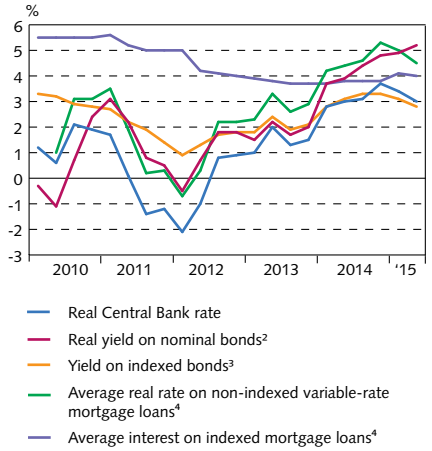


Source: Central Bank of Iceland.

Chart III-2

Real Central Bank interest rate and real market rates

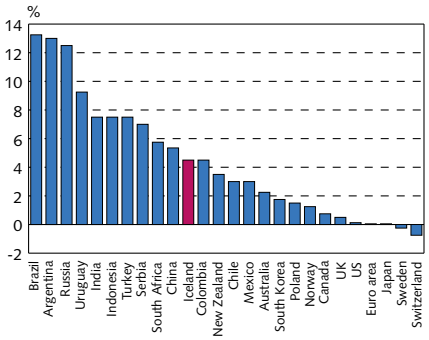
Q1/2010 - Q2/2015[1]



1. Based on data until 8 May 2015. 2. Five-year rate from the estimated nominal yield curve. 3. Five-year rate from the estimated real yield curve. 4. Simple average lowest lending rates from the three largest commercial banks. Fixed-rate period of five years or more on indexed mortgage loans.

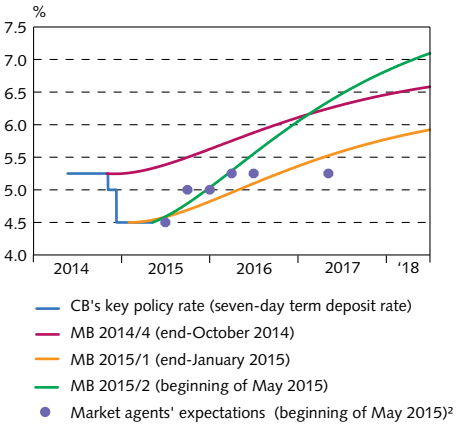
Source: Central Bank of Iceland.

Chart III-3
Selected central banks' key interest rates



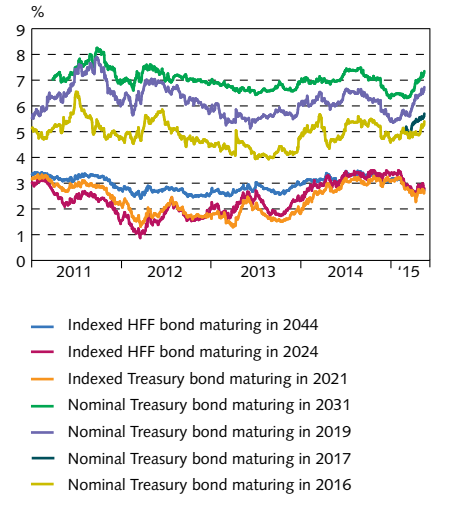
Sources: Websites of the relevant central banks, Central Bank of Iceland.

Chart III-4
Central Bank of Iceland key policy rate, forward market interest rates, and market agents' expectations concerning CB's policy rate[1]
Daily data 21 May 2014 - 30 June 2018



1. Interbank interest rates and Treasury bonds were used to estimate the yield curve. 2. Estimated from the median response in the Central Bank's survey of market agents' expectations of collateralised lending rates. The survey was carried out during the period 4-6 May 2015.
Source: Central Bank of Iceland.

Chart III-5
Nominal and indexed bond yields
Daily data 3 January 2011 - 8 May 2015



Source: Central Bank of Iceland.

… although it is still higher than in most other industrialised countries

The Central Bank of Iceland's interest rates are still higher than those in other industrialised countries, mainly because inflation and growth have been higher and the output slack smaller, and because inflation expectations remain insufficiently anchored to the inflation target. At the same time that inflation expectations have risen in Iceland and are somewhat above the target, central banks in Europe and the US are concerned that inflation expectations are too low (see Section II). Iceland's higher interest rates also reflect differing developments in economic activity, which has grown more rapidly overall in Iceland, as can be seen, for instance, in more rapid growth of nominal expenditure and wages. The Bank's key rate is closer to that found in many emerging market economies, which currently have economic conditions that are perhaps closer to those in Iceland (Chart III-3).

Table III-1 The monetary stance (%)

Real interest rates based on:[1]	*Current stance (8 May '15)*	*Change from MB 2015/1 (30 Jan. '15)*	*Change from MB 2014/2 (16 May '14)*
Twelve-month inflation	3.0	-0.6	0.0
Business inflation expectations (one-year)	1.5	-0.5	-0.8
Household inflation expectations (one-year)	1.5	0.5	0.1
Market inflation expectations (one-year)[2]	1.0	-0.9	-1.2
One-year breakeven inflation rate[3]	1.6	-1.1	-1.5
Central Bank inflation forecast[4]	1.8	-1.3	-0.7
Average	1.7	-0.7	-0.7

1. Since 21 May 2014, the Bank's key rate has been the rate on financial institutions' seven-day term deposits with the Bank, but prior to that time it was calculated as the simple average of the current account rate and the maximum rate on 28-day certificates of deposit. 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 nominal rate hike

According to the Bank's survey of market agents' expectations, carried out in early May, respondents expect a higher nominal Central Bank rate this year and next year than in the January survey (Chart III-4). The survey results indicate that market agents expect the Bank's key interest rate to remain unchanged until Q3/2015 and then rise by 0.5 percentage points, to 5%, and by a further 0.25 percentage points in Q1/2016, to 5.25%. This is 0.75 percentage points higher than according to the January survey. Indicators of market expectations based on the estimated forward yield curve point in the same direction. According to this estimate, market agents expect a 0.5-point rise in the Bank's key rate this year and a comparable increase in the first half of 2016, bringing it to 5.5%.[2]

2. Measurement problems at the short end of the yield curve introduce a measure of uncertainty into the indications provided by the yield curve. For further discussion, see Box III-1 in *Monetary Bulletin* 2013/4.

Market interest rates and interest premia

Long-term nominal interest rates have risen in spite of unchanged Central Bank rates

Yields on nominal Treasury bonds have risen by 0.4-1.2 percentage points since the last *Monetary Bulletin*, while yields on indexed Treasury and Housing Financing Fund (HFF) bonds have fallen by 0.3-0.4 percentage points (Chart III-5).[3] The five- and ten-year breakeven inflation rates in the bond market have therefore risen by 1½ percentage points (see Section V). Uncertainty about the upcoming wage settlements and concerns about pay increases far in excess of the amount compatible with the inflation target appear to weigh heavily in this development. For example, a majority of the respondents in the Bank's recent survey of market agents' assessment of conditions in the labour market considered this to be the main reason for the rise in the breakeven rate. Rates on the longest nominal bonds have risen broadly in line with short-term bond rates, which could indicate that market agents fear a sudden inflation spurt and a protracted period of above-target inflation. This rise in the breakeven inflation rate has occurred more rapidly than the one prior to the spring 2011 wage settlements (see Box 2).

Decline in bond market turnover

Turnover in the bond market has contracted in recent years. In 2014, for instance, it was down 16% from the previous year. The pension funds' increased share of the bond market under the capital controls is probably a partial cause, as their turnover is generally more limited than others' is, partly because pension funds are primarily long-term investors. Declining turnover is also due to an increase in ownership of issued bonds by non-residents locked in by the capital controls. Turnover will probably contract still further as a result of recent changes in non-residents' options for investment in domestic bonds. Mutual and investment funds' Treasury bond holdings have also declined, and outflows from bond funds have exceeded inflows, further reducing bond market turnover.

Risk premia on Treasury obligations have declined …

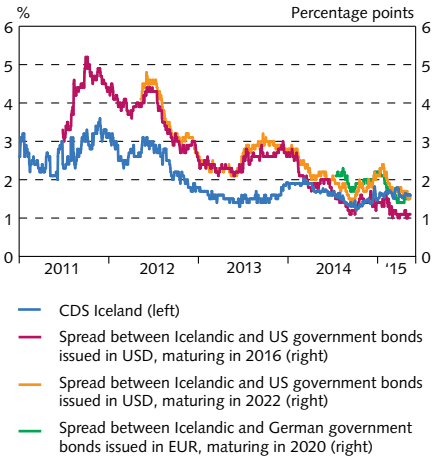
Risk premia on the Republic of Iceland's foreign obligations have declined since the February *Monetary Bulletin*, and the rise following the global financial market unrest in late 2014 has largely reversed. The CDS spread on five-year Treasury obligations has fallen by 0.1 percentage points, to the current 1.6%, slightly lower than in early May 2014 (Chart III-6). In addition, the spread between the Treasury's foreign issues and comparable bonds issued by the US and German governments has narrowed by about ½ a percentage point since late January, largely due to a decline in yields on the Icelandic bonds. The spread now measures 1-1½ percentage points and has narrowed by ½-1 percentage point since May 2014.

3. Over the same period, there was little change in yields on nominal Treasury bonds maturing in 2016, of which non-residents own about 80%. Following recent regulatory amendments, these parties are no longer authorised to purchase Treasury bonds; therefore, they are less likely to respond to changes in market expectations.

Chart III-6

Risk premia on Icelandic Treasury obligations

Daily data 3 January 2011 - 8 May 2015

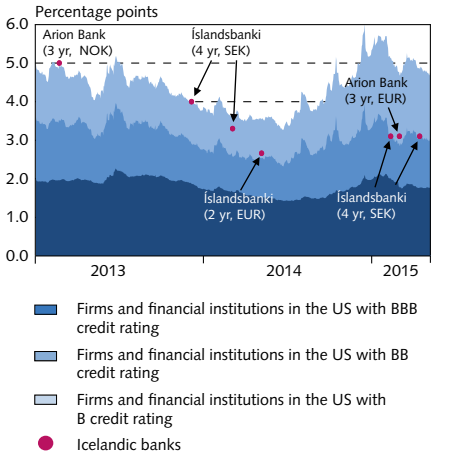


Source: Bloomberg.

Chart III-7

Risk premia on US firms and financial institutions and Icelandic banks[1]

Daily data 2 January 2013 - 8 May 2015



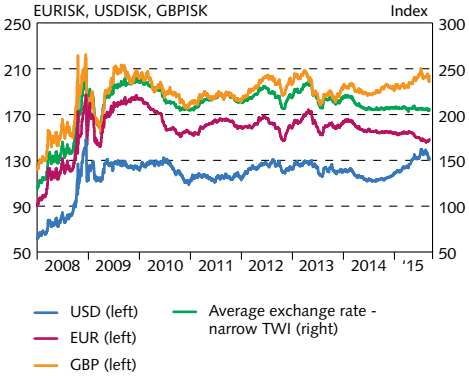
1. Credit spreads on bonds issues in USD for firms and financial institutions in the US. Credit spreads at issuance of bonds in foreign currency for Icelandic banks.

Sources: Arion Bank, Íslandsbanki, Federal Reserve Bank of St. Louis.

Chart III-8

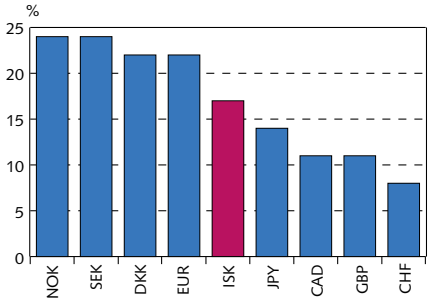
Exchange rate of foreign currencies against the króna

Daily data 3 January 2008 - 8 May 2015



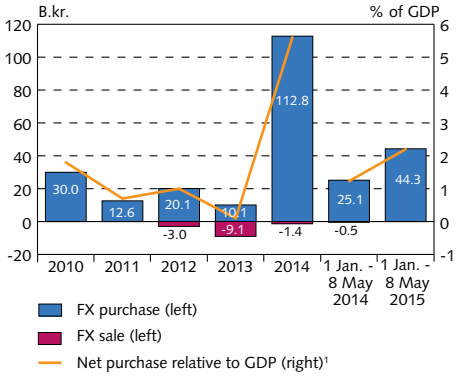
Source: Central Bank of Iceland.

Chart III-9
Depreciation of selected developed countries' currencies against the US dollar[1]



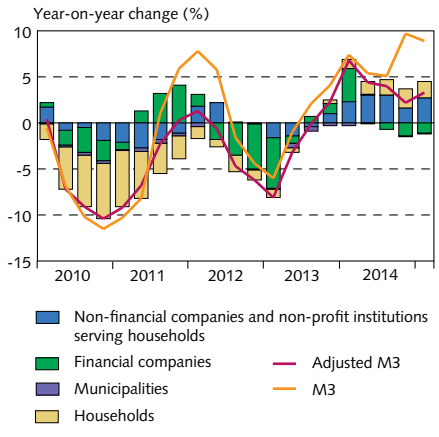
1. The chart shows the drop in currency exchange rates against the US dollar between the April 2014 and April 2015 averages.
Source: Macrobond.

Chart III-10
Central Bank transactions in the Icelandic interbank foreign exchange market 2010-2015



1. Year-2014 GDP used for 2015.
Source: Central Bank of Iceland.

Chart III-11
Components of money holdings - Adjusted M3[1]
Q1/2010 - Q1/2015



1. Adjusted for deposits held by failed banks' winding-up committees.
Source: Central Bank of Iceland.

… and domestic banks' borrowing terms in foreign markets have improved

The terms on the Icelandic banks' foreign bond issues have improved markedly since the banks received BB+ credit ratings from Standard & Poor's in the first half of 2014. Premia on these issues have moved closer to those on issues from US firms and financial institutions with comparable ratings (Chart III-7). At the end of April, Fitch Ratings gave one of the banks an investment-grade rating of BBB-, which should further improve both market access and the terms offered to resident borrowers in global markets.

Exchange rate of the króna

Króna remains stable

The exchange rate of the Icelandic króna has held relatively stable in trade-weighted terms so far this year, as it did in 2014 (Chart III-8). As this *Monetary Bulletin* went to press, the exchange rate was slightly higher than it was both in January and in May 2014. Since January, it has risen by just over 1½% against the euro and by ½% against the US dollar. The króna is, however, almost one-fifth weaker against the dollar than it was a year ago, which is in line with developments in other developed countries' currencies vis-à-vis the dollar (Chart III-9). So far in 2015, the Central Bank has continued to buy foreign currency in the market and has increased its purchases year-on-year (Chart III-10).

Money holdings and lending

Growth in money holdings eases

M3 grew by about 8.9% year-on-year in Q1/2015, but by only 3.3% adjusted for deposits held by the failed banks' winding-up boards (which gives a more accurate view of money holders' spending capacity) (Chart III-11). Twelve-month growth in adjusted M3 has been slowing in the past year and has been below nominal GDP growth for the last three quarters. To an extent, this may reflect the commercial banks' continuing sales of the assets they appropriated in the wake of the crisis. Other things being equal, such transactions reduce the money stock. Among components of M3, the increase in household deposits weighs heaviest. There was a contraction in deposits held by commercial enterprises in the fishing industry, however. Deposits held by financial institutions other than deposit money banks (DMB) contracted as well, particularly those owned by pension funds and mutual and investment funds.

Increased growth recently in corporate lending …

Net new lending (new loans net of prepayments and retirement of older loans) granted by DMBs to resident borrowers totalled about 50 b.kr. in the first quarter of 2015. While this is a large increase year-on-year, it is broadly in line with the past three quarters. A majority of the lending during Q1 (38 b.kr.) was to domestic commercial enterprises (Chart III-12), most of it to services and fishing companies. This is well above average credit growth over the past two years. The recent

rise in corporate lending accords with forecasts of increased business investment in 2015 (see Section IV).

… but broadly unchanged household lending, excluding the effects of debt relief measures

Net new DMB lending to households totalled 9.7 b.kr. in Q1/2015, a strong contraction between quarters but in line with Q1 lending in the previous two years (Chart III-12). Including the Housing Financing Fund (HFF), lending amounted to almost 100 m.kr., the smallest total for a single quarter since 2013, due to increased prepayments and debt retirement, in part due to the Government's debt relief measures. Excluding the effects of the measures, net new lending to households was broadly in line with the 2014 average.

Asset prices and financial conditions

House prices up steeply in the recent term …

House prices in the greater Reykjavík area rose by 8.5% year-on-year in 2014. They have continued to rise this year and were about 10% higher in Q1 than in the same quarter of last year. Over the same period, the number of registered purchase agreements in the capital area was up 11.5%, and rent prices rose 8.5%. The recent increase in house prices stems largely from rising condominium prices, owing to a shortage of small homes in the recent past. Single-family home prices began to rise in Q1/2015, however. One possible explanation for this is that demand for detached housing has grown because prices have become competitive with condominium prices.

… but still in line with economic fundamentals

The year-on-year rise in house prices in Q1 is somewhat larger than was assumed in the last Monetary Bulletin but well in line with economic fundamentals. For example, house prices relative to income and construction costs have been at or just above their long-term averages for some time (Chart III-13), unlike the situation in many other OECD countries.

Real commercial housing prices have also risen …

Real commercial and industrial housing prices in the greater Reykjavík area have also risen strongly in the recent term, as has turnover (Chart III-14). Prices were up about 18% year-on-year in Q1 and have almost increased by half from the Q4/2011 trough. They are now above the average for the period from 1990 to the present.

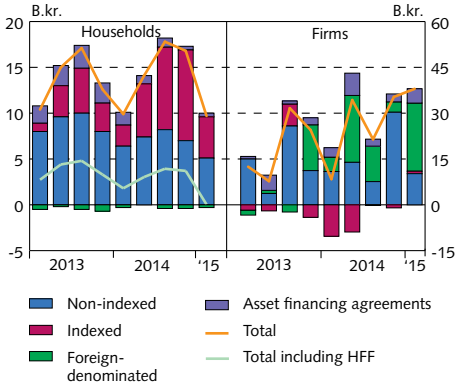
… as have share prices

Equity securities prices, like house prices, have continued to rise. The OMXI8 share price index is up by 5½% year-to-date and about 9% when adjusted for dividend payments. Turnover totalled just over 100 b.kr. in the first four months of the year, almost 13% more than over the same period in 2014. Two real estate firms were listed on the exchange in April, and another company has announced plans for listing during the year.

Chart III-12

Net new lending from DMBs to households and firms[1]

Q1/2013 - Q1/2015

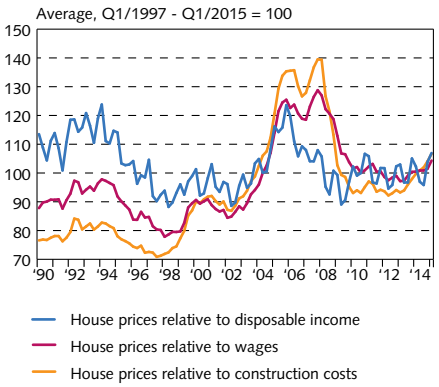


1. New loans net of prepayments. Excluding holding companies.
Source: Central Bank of Iceland.

Chart III-13

House prices, wages, disposable income, and construction costs

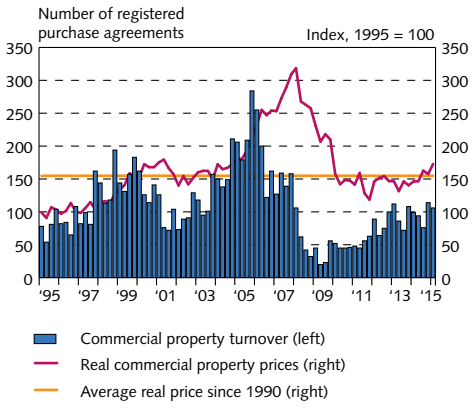
Q1/1990 - Q1/2015



Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-14

Prices and turnover of commercial property in greater Reykjavik 1995-2015[1]

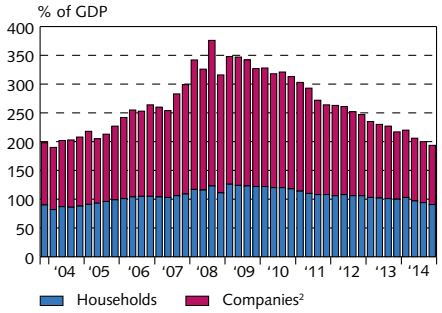


1. Through May 2006, turnover is based on the date of purchase, and from June 2006 onwards, on the registration date of the purchase agreement.
Sources: Registers Iceland, Central Bank of Iceland.

Chart III-15

Household and non-financial corporate debt[1]

Q4/2003 - Q4/2014



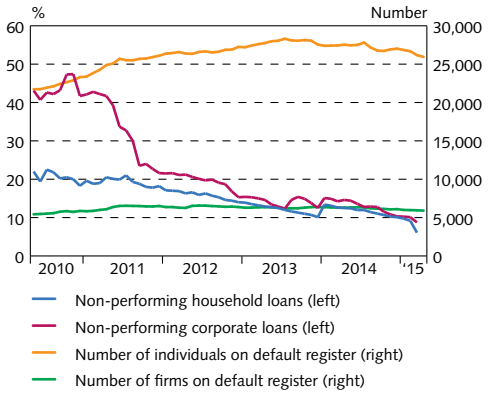
1. According to seasonally adjusted GDP figures from the Central Bank of Iceland. Debt owed to financial undertakings and marketable bonds issued. 2. Excluding financial institutions (which includes holding companies).

Sources: Statistics Iceland, Central Bank of Iceland.

Chart III-16

Number of borrowers on the default register and non-performing loan ratios[1] of the three largest commercial banks and the Housing Financing Fund[2]

May 2010 - April 2015



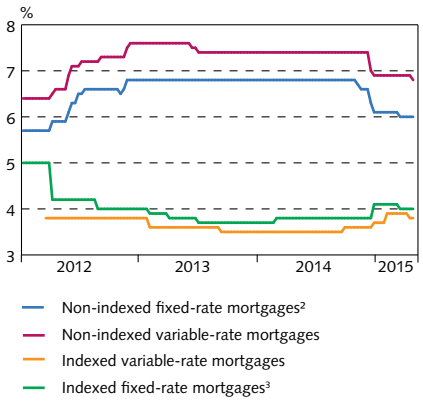
1. Non-performing loans are defined as loans that are in arrears by more than 90 days or those for which payment is deemed unlikely. If one loan taken by a customer is in arrears by 90 days or more, all of that party's loans are considered non-performing (cross-default). The January 2014 increase is due almost entirely to recent improvements to the HFF's loan portfolio reports and therefore does not reflect an actual increase. 2. Parent companies, book value.

Sources: CreditInfo, Financial Supervisory Authority, Central Bank of Iceland.

Chart III-17

Commercial banks' mortgage lending rates[1]

1 January 2012 - 1 May 2015



1. Simple average of the lowest mortgage rates from Arion Bank, Íslandsbanki, and Landsbankinn. 2. Rates are fixed for 3-5 years. 3. Rates are fixed for a period ranging from 5 years to the entire loan period.

Source: Central Bank of Iceland.

Private sector debt has declined …

Household debt declined by nearly 1% in nominal terms between Q3 and Q4/2014, or about 3½ percentage points of GDP, to 90½% of GDP. The debt ratio is at its lowest since Q4/2004 (Chart III-15). The outlook is for a further reduction in household debt, not least because of the Government's debt relief package and increased overall economic activity. On the other hand, it is likely that at least some borrowers will use the increased collateral capacity to take on additional debt. The ratio of corporate debt to GDP declined some 3 percentage points during the quarter, to just over 103%, the lowest since year-end 2003.

… and the default register has shrunk

The number of individuals on the default register has subsided to the 2012 average (Chart III-16) but is still high in comparison to the pre-crisis period. The number of personal bankruptcies rose sharply last autumn, but it was probably a temporary spike, as is discussed in *Financial Stability* 2015/1. The number of firms on the default register has declined noticeably, falling below 6,000 for the first time since March 2011. In March, the number of new private limited companies registered during the previous twelve months was up 8% from a comparable twelve-month period in March 2014, while bankruptcies have declined by 15%. The percentage of non-performing household and corporate loans from the HFF and the domestic commercial banks has fallen considerably so far this year.

Overall access to credit has eased and real borrowing rates have fallen

Young buyers have not been prominent in the real estate market in recent years, but since the second half of 2014, DMBs have offered greater latitude to first-time buyers, including higher loan-to-value ratios or supplemental loans, which could make it easier for buyers in this group to finance a home. This group also has the option of using third-pillar pension fund premiums up to a certain amount in order to purchase their first property. Proposed amendments to the Act on Price Indexation centring on shortening the permissible maximum borrowing period could limit this group's options, however, owing to the increased debt service on shorter loans. These restrictions have the greatest effect on those with limited equity and debt service capacity (see *Monetary Bulletin* 2014/2 and Box V-1 in *Financial Stability* 2014/1).

The three large commercial banks' average listed interest rates on indexed mortgages have inched downwards in the recent term, and the increase in the first two months of the year has reversed in part (Chart III-17). Interest rates on comparable nominal mortgage loans are broadly unchanged year-to-date, however, although real rates on these loans have fallen by about ⅔ of a percentage point.

IV The domestic real economy

Output growth measured 1.9% in 2014, and the post-crisis contraction in GDP has fully reversed. Last year's increased economic activity was relatively broad-based and was driven primarily by increased domestic demand rather than by net trade, as was the case in 2013. The outlook for upcoming quarters is similar to that in late 2014, with robust output growth driven largely by growth in domestic demand. GDP growth is projected at 4½% for 2015, about ½ a percentage point more than was forecast in February. The difference is due to increased investment activity and exports. The recovery of the labour market has also gained momentum, with labour demand growing considerably faster in Q1/2015 than in H2/2014. The slack in the labour market and the economy as a whole is therefore about to disappear or has already done so.

GDP growth and domestic private sector demand

GDP growth outlook in line with February forecast

Statistics Iceland published the Q4/2014 national accounts in March 2015, together with revisions of older figures. GDP growth for the year is estimated at 1.9%, and previous GDP growth figures for the first three quarters of the year were revised upwards from ½% to 1½%. The post-crisis contraction in GDP has therefore been fully reversed, although GDP per capita in 2014 was still about 2½% below the 2007 peak. Last year's GDP growth was driven mainly by private sector demand – private consumption and business investment in particular – although the contribution from other components of domestic demand was positive as well. Exports also grew markedly, led by services exports, which contributed 1.3 percentage points to GDP growth. Strong growth in domestic demand also surfaced in imports, which grew so strongly that the contribution of net trade to output growth in 2014 was negative by 3 percentage points, the largest negative contribution since 2006.

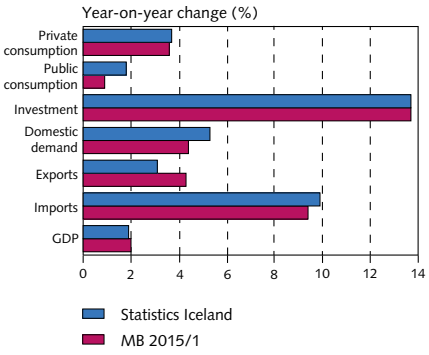
Year-2014 GDP growth turned out well in line with the forecast in the February *Monetary Bulletin*, which provided for 2% growth during the year (Chart IV-1). Developments in private consumption and investment were in line with the forecast, but public consumption and inventory changes made larger-than-expected contributions to GDP growth, in part due to revision of previous figures. This was offset by a somewhat weaker contribution from net trade.

Broad-based GDP growth in 2014

The production accounts show that 2014 GDP growth was rather broadly based, owing mainly to the contribution from the domestic services sector, which grew more in 2014 than at any time since the economic recovery began (Chart IV-2). To a large extent, this is due to growth in domestic demand during the year. In addition, the domestic services sector benefitted from the large number of tourists in the country. After the services sector, the construction industry contributed most to GDP growth. Its contribution has been growing steadily

Chart IV-1

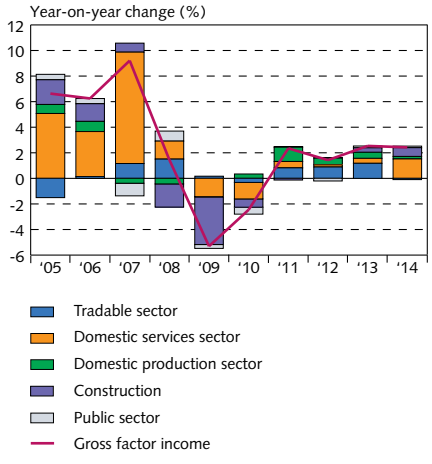
Year-2014 national accounts and Central Bank estimates



Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-2

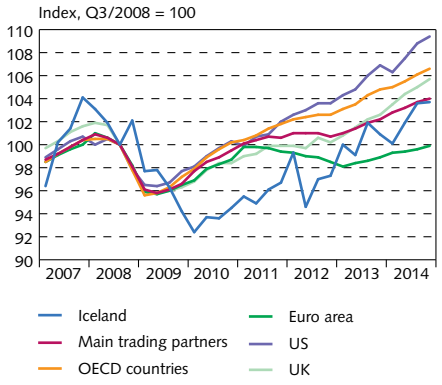
Developments in gross factor income and sectoral contributions 2005-2014[1]



1. Gross factor income measures the income of all parties involved in production. It is equivalent to GDP less indirect taxes, and plus manufacturing 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, services, and production.

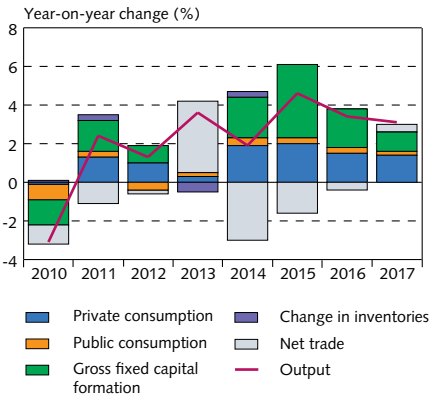
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-3
Post-crisis developments in GDP[1]
Q1/2007 - Q4/2014



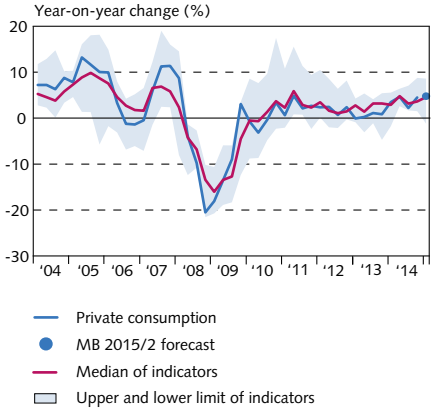
1. Seasonally adjusted data for Iceland are from the Central Bank of Iceland.
Sources: Macrobond, OECD, Central Bank of Iceland.

Chart IV-4
GDP growth and contribution of underlying components 2010-2017[1]



1. Central Bank baseline forecast 2015-2017.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-5
Indicators of private consumption[1]
Q1/2004 - Q1/2015



1. Upper and lower limit of eight indicators of private consumption. Indicators are payment card turnover, groceries turnover, share prices, housing prices, consumer goods imports, new motor vehicle registrations, wages, and unemployment. The indicators are rescaled so that their average and standard deviation are the same as those for private consumption.
Sources: Centre for Retail Studies, Statistics Iceland, Central Bank of Iceland.

in the past three years, following a sharp post-crisis contraction. In the tradable sector, there are offsetting contributions from growth in tourism-related activity and a contraction in the fishing industry. Following an excellent year in 2013, the fishing industry experienced a setback in 2014 due to a poor capelin season and a year-on-year contraction in demersal fish catches. This negative contribution was all but offset by growing tourism activity last year. Iceland's year-2014 GDP growth developed broadly in line with that in its main trading partner countries, where growth averaged 1.7% (Chart IV-3). GDP growth measured 0.9% in the euro area, 2.4% in the US, and 2.8% in the UK (see Section II).

GDP growth outlook for 2015 the strongest since 2007

The outlook is for strong growth in domestic demand this year, with all components pulling in the same direction. If the Bank's forecast materialises, domestic demand will grow by 6½%, over 1½ percentage points more than in 2014. In spite of strong growth in exports, net trade is still expected to make a negative contribution to GDP growth this year (see below). GDP growth will therefore be slightly weaker than demand growth but still significant, at 4.6%. This is about ½ a percentage point more than was forecast in February, owing mainly to the expectation of stronger growth in investment and exports during the year. If the forecast materialises, GDP growth will be the strongest since 2007. In the next two years, growth is forecast at 3-3½% per year, due mainly to growth in domestic demand (Chart IV-4).

Increased household demand due to improved conditions

Private consumption grew by 4.5% in Q4/2014 and by 3.7% for the year as a whole, which is in line with the Bank's February forecast and is the strongest private consumption growth seen since 2007. It is attributable to strong growth in real wages and improved household equity. In addition, household sentiment appears to have improved, as the Gallup survey carried out in the second half of the year showed an increase in planned major purchases. According to the same survey, the number of consumers who expect increased total income and improved work prospects in the near term rose in excess of the number with negative expectations.

Private consumption growth set for eight-year high

The outlook for private consumption growth in 2015 is broadly unchanged from the February forecast. It is assumed that the trend from last year, with increased real disposable income and improved household equity supporting growth in household demand, will continue. The main indicators of private consumption suggest that growth at the beginning of 2015 broadly kept pace with that in late 2014 (Chart IV-5). As time has passed following the financial crisis and households' position has improved, the weight of consumer durables, overseas spending, and motor vehicle purchases has increased. Indicators such as the Gallup survey of planned big-ticket purchases imply that this trend will continue in 2015. This is interesting in view of the fact that this category of household spending usually develops

in line with households' financial position, as it is easier to postpone purchases of durables than of non-durables when finances are tight (Chart IV-6). For this year, private consumption is expected to grow by nearly 4%, slightly outpacing the February forecast.

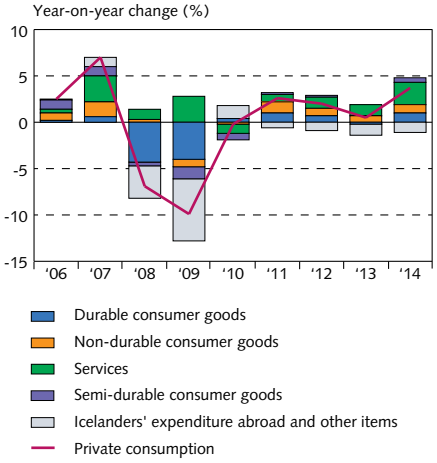
Turnaround in business investment

In recent years, investment in ships and aircraft has weighed heavily in overall developments in business investment. During the pre-crisis period, however, construction was the mainstay of the increase, and it accounted for the bulk of the post-crisis contraction as well. Construction grew year-on-year in 2013, and according to the November 2014 issue of *Monetary Bulletin*, there were a number of indications that growth had continued in 2014. According to figures from Statistics Iceland, this turned out to be so: of the 15% growth in business investment during the year, about 11 percentage points were due to construction and construction equipment (Chart IV-7). The increase in construction activity is consistent with the recent rise in optimism among corporate executives, as has been revealed in the Gallup survey among executives from Iceland's 400 largest firms. This trend also supports the Bank's assessment that the slack in the economy diminished last year, as firms are unlikely to undertake such investment unless the scope for increasing their activity is limited.

Business investment growth to gain pace in 2015

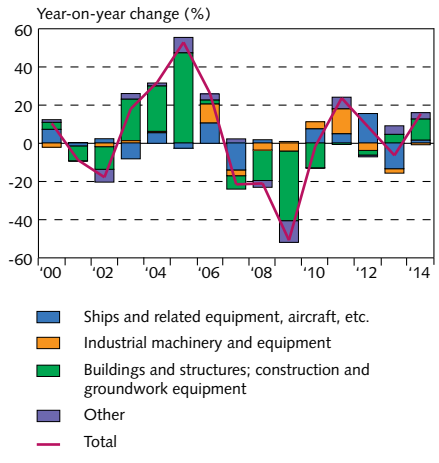
According to the Central Bank's recent survey of 99 firms, there is much more willingness to invest this year than at the time of the last survey (September 2014). The change is attributable largely to firms in the tourism and fisheries sectors (Table IV-1). This is in line with developments in other indicators of investment (Chart IV-8). Furthermore, the Bank's estimates of investment in ships and aircraft in 2015 and 2016 have changed with the acquisition of new information. This applies in particular to the large increase in aircraft purchases in 2015, reflecting both increased inflows of tourists to Iceland and increased overseas travel by Icelandic households. A portion of this investment has already been seen in Q1/2015. Next year, investment in ships is expected to be more than previously estimated. Including investment

Chart IV-6
Developments in private consumption and its main components 2006-2014



Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-7
Business investment classified by type 2000-2014
Contribution to change



Sources: Statistics Iceland, Central Bank of Iceland.

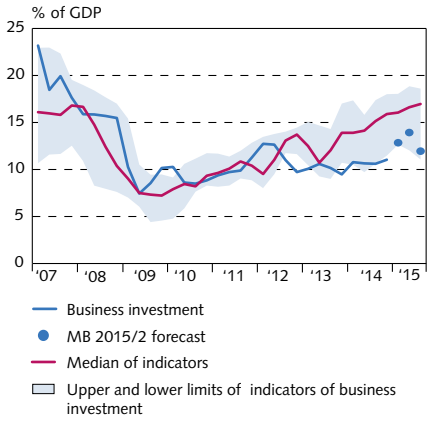
Table IV-1 Survey of corporate investment plans (excluding ships and aircraft)[1]

Largest 99 (102) firms *Amounts in ISK bn*	*2013*	*2014*	*2015*	*Change 2013 and 2014, % (last survey)*	*Change between 2014 and 2015, % (last survey)*
Fisheries (16)	8.9	5.9	8.9	-32.3 (-10.7)	50.5 (-16.9)
Industry (18)	5.9	4.7	3.8	-18.8 (-11.5)	-20.3 (-17.9)
Wholesale and retail sale (22)	5.1	5.0	5.9	-1.5 (-17.4)	17.1 (2.3)
Transport and tourism (8)	8.2	9.9	21.4	20.7 (45.3)	115.2 (43.0)
Finance/Insurance (9)	4.4	5.1	5.6	16.0 (31.9)	8.7 (6.8)
Media and IT (7)	6.1	7.3	7.0	20.1 (19.3)	-4.5 (-17.7)
Services and other (19)	8.1	13.1	10.3	61.7 (14.8)	-21.2 (12.5)
Total 99 (102)	46.5	51.1	62.9	9.9 (12.1)	22.8 (6.3)

1. In parentheses is a comparison with the last survey, in which respondents from 102 firms were asked about investment plans for 2014-2015 (*Monetary Bulletin* 2014/4).

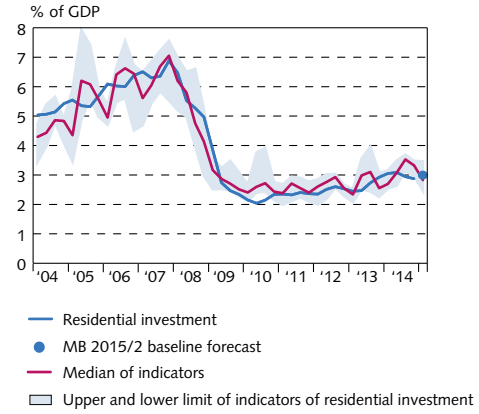
Source: Central Bank of Iceland.

Chart IV-8
Indicators of business investment[1]
Q1/2007 - Q3/2015



1. Upper and lower limits of five indicators of business investment. The indicators are imports of investment goods at constant prices and responses to four questions from the Capacent Gallup survey of Iceland's 400 largest companies. The questions centre on executives' assessment of (a) the economic outlook six months ahead, (b) how they expect demand for their goods or services to develop in the next six months, (c) whether they expect their company's investment to increase year-on-year in the current year, and (d) whether they expect their margins to increase year-on-year. In assessing the range, all variables are rescaled so that their average and standard deviation are the same as those for business investment. Two-quarter moving averages. Investment indicators are lagged by two quarters.
Sources: Gallup, Statistics Iceland, Central Bank of Iceland.

Chart IV-9
Indicators of residential investment[1]
Q1/2004 - Q1/2015



1. Upper and lower limit of three indicators of reditential investment. The indicators are imports of reinforcing steel, imports of other construction materials, and cement sales to buyers other than energy-intensive firms. In assessing the range, the variables are rescaled so that their average and standard deviation are the same as those for measured residential investment. The chart shows a two-quarter moving average.
Sources: Statistics Iceland, Central Bank of Iceland.

spending already accounted for this year, the changes total around 30 b.kr. and developments in investment in the first half of the forecast horizon are due in large part to these estimates. The Bank's projections of energy-intensive investment during the forecast horizon are broadly unchanged, however. As a result, business investment is projected to grow by nearly 30% this year, about twice the increase forecast in February.

Year-on-year residential investment growth in 2014 weaker than expected

As a share of GDP, residential investment has approximately increased by half from its post-crisis trough (Chart IV-9). In 2014, it grew by 15% year-on-year, slightly less than was forecast in the last *Monetary Bulletin*. The outlook for 2015 is also for somewhat weaker growth than was forecast in February, albeit somewhat stronger than in 2014. For example, sales of cement to buyers outside the energy-intensive sector and imports of construction materials suggest less investment in Q1 than was assumed in February. The Federation of Icelandic Industries' estimate accords with this, indicating fewer housing starts than expected in the first quarter of the year, owing to inclement weather and a shortage of tradesmen. It is now assumed that housing starts in the greater Reykjavík area in 2015 will amount to 1,700, about 300 fewer than the Federation estimated last October. The reduction will also affect investment in 2016. Other things being equal, fewer dwellings will be completed than previously estimated.

Investment a major driver of GDP growth in coming years

Investment amounted to just over 16½% of GDP in 2014, about 4 percentage points below the thirty-year average. On the other hand, the investment need is greater now, as capital stock utilisation and overall demand have increased (see the discussion on factor utilisation below). Investment is forecast to grow by nearly 23% this year, primarily due to increased business investment (Chart IV-10). This is nearly 10 percentage points more than was forecast in February. The difference is much less pronounced if ships and aircraft are excluded, however, or about 17%, as opposed to the February forecast of just under 16%.

Public sector

Continued historically weak growth in public consumption and investment

Public consumption grew by 1.8% in 2014, according to the most recent figures from Statistics Iceland, whereas the forecast in the February *Monetary Bulletin* provided for 0.9% growth. The difference is due to Statistics Iceland's revision of figures on net goods and services purchases. For instance, the central government's purchases of financial intermediation services indirectly measured (FISIM) were revised back to 2012, with nearly the entire effect coming from revisions of general purchases by municipalities and the social security system.

Public consumption growth is still projected to be historically weak in 2015 and the following two years. In the forecast, growth in net goods and services purchases has been revised in view of last year's results, as estimated changes in labour demand take more account than before of the possibility that nominal wage increases will exceed Government estimates. Government budgetary estimates are presented at nominal value; therefore, it is considered likely that the Government will respond to excess nominal wage increases with a contraction in labour demand. The forecast assumes that public sector labour demand will continue to increase, but at a slower pace than previously estimated. This is particularly the case for municipalities.

Public investment grew 7.5% in 2014, in line with the February forecast. Limited new information is available about this year's investment plans apart from plans to allocate additional funds for road maintenance. As before, it is assumed that public investment will remain broadly unchanged relative to GDP during the forecast horizon. The historically weak growth in public consumption and investment will therefore continue (Chart IV-11).

Contraction in public consumption less in Iceland than in other countries hard hit by the financial crisis

At the end of 2014, the real value of public consumption in Iceland was nearly 3% below that in 2008. Over the same period, it declined by 20% in Greece and by 10% in Ireland and Portugal. Greece has reduced public consumption more than any other European country, and much more than Iceland has. Spain and Italy are similar to Iceland in this respect, while public consumption grew in Germany and the other Nordic countries during this period (Chart IV-12).

Underlying performance slightly below the previous forecast

According to preliminary figures from Statistics Iceland, general government performance was close to being in balance in 2014, with a deficit of 0.2% of GDP. The forecast in the November *Monetary Bulletin* assumed an improvement in the underlying performance of 0.7% of GDP. Treasury performance was in balance, which is broadly in line with budgetary assumptions. Regular general government revenues were overestimated by 0.4% of GDP in the forecast, and total expenditures were underestimated by 0.3% of GDP. On a budgetary basis, it was assumed that dividend payments would total 2.6% of GDP, but according to Statistics Iceland accounts they totalled 1.2% of GDP.[1]

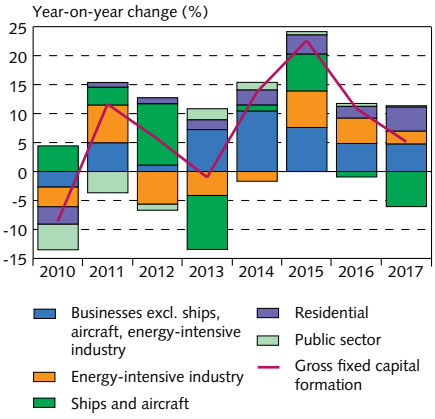
New fiscal plan for 2016-2019

In accordance with the Act on Parliamentary Procedure, a parliamentary resolution on a four-year fiscal plan was presented before Parliament for discussion for the first time in April 2015. The plan provides for an overall surplus amounting to 0.5% of GDP in 2016 and

1. Statistics Iceland's figures presented on a national accounts basis differ from figures presented on a budgetary basis in that dividends are much lower in the Statistics Iceland figures, which only include dividend payments that equal the payer's prior year profit net of asset revaluation during that year.

Chart IV-10

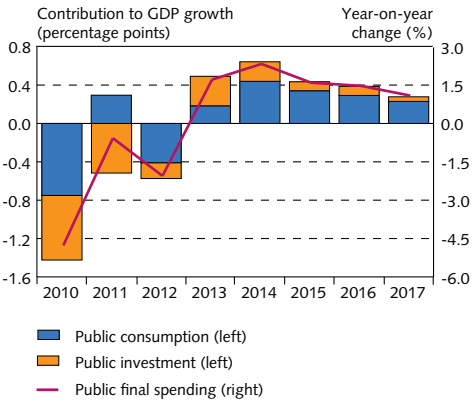
Gross fixed capital formation and contribution of its main components 2010-2017[1]



1. Central Bank baseline forecast 2015-2017.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-11

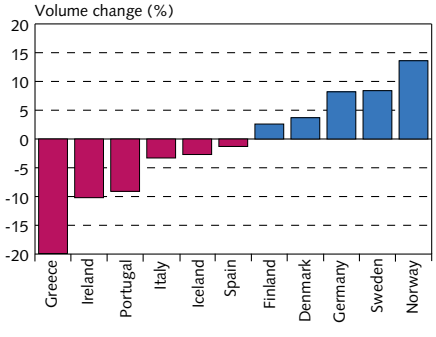
Public consumption and investment 2010-2017[1]



1. Central Bank baseline forecast 2015-2017.
Sources: Statistics Iceland, Central Bank of Iceland.

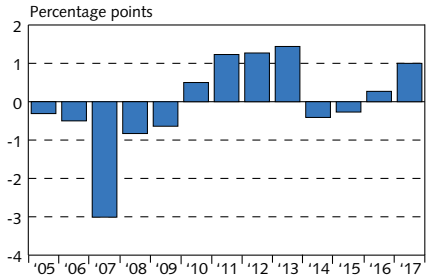
Chart IV-12

Volume change in public consumption in selected European countries between 2008 and 2014



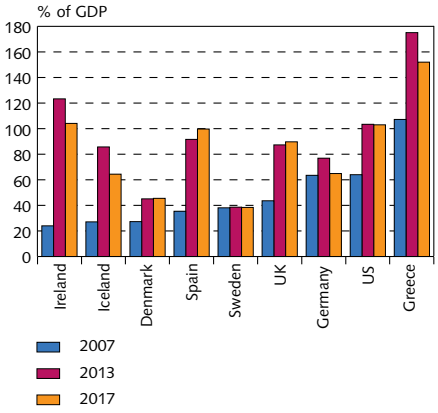
Source: OECD.

Chart IV-13
Change in central government cyclically adjusted primary balance 2005-2017[1]



1. Central Bank baseline forecast 2015-2017.
Sources: Financial Management Authority, IMF, Central Bank of Iceland.

Chart IV-14
Gross general government debt in selected countries



Sources: IMF, Central Bank of Iceland.

1.7% in 2017. This is slightly more than was assumed in the long-term plan published with the budget proposal for 2015. The same applies to the primary balance, which is projected at 3.4% of GDP in 2016 and 4.2% in 2017. It is still assumed that revenues will decline relative to GDP, but because the decline in expenditures is expected to weigh more heavily, the overall balance will improve if the assumptions are borne out. The *Monetary Bulletin* forecast, prepared on a national accounts basis, gives a very similar result (see Appendix 1).

However, there is considerable uncertainty about wage settlements in both public and private sector and therefore about their impact on the public sector balance. Furthermore, there is some uncertainty about the financing of the Government's debt relief measures, revenues from the sale of the stake in Landsbankinn, and dividend payments on the State's holding in that bank. There are large amounts of money involved; therefore, deviations from assumptions could have a profound impact on Treasury performance.

Fiscal consolidation to increase during the forecast horizon

It is assumed that fiscal consolidation will increase concurrent with improvements in the primary and overall balances. For the period 2015-2017, the primary balance is projected to improve by roughly 1 percentage points of GDP as the positive output gap emerging this year closes again (see below). The cyclically adjusted primary balance will therefore improve by a total of 1⅓ percentage points in 2015-2017 (cyclically adjusted primary balance and the primary balance are adjusted for other one-off revenues, Chart IV-13).

Public debt continues to decline

Treasury debt amounted to 75% of GDP at year-end 2014, down from 87% at the end of 2011, a reduction of 12 percentage points in only three years. At the same time, general government debt totalled around 85% of GDP, which is still high in international context (Chart IV-14). It is expected to keep falling, to 64% of GDP by 2017, and net debt is projected to fall to 45% over the same period. The legislative bill on public sector finances assumes that debt will not exceed 45% of GDP.[2]

External trade and the current account balance

Outlook for strong export growth in 2015

Exports of goods and services grew by 3.1% year-on-year in 2014. Growth was driven primarily by services exports, which were up nearly 5% between years. Goods exports grew by only 1½%, however, somewhat less than was assumed in the February forecast, owing to weaker-than-expected growth in aluminium exports in Q4. Growth in total exports was therefore just over 1 percentage point weaker than was projected in February. Export growth has been strong so far this year. It is projected at nearly 7% for 2015 as a whole, about 1½ per-

2. Net debt is defined here as total liabilities excluding pension obligations and accounts payable and net of cash and bank deposits.

centage points more than in the last forecast, mainly because services exports are expected to grow more strongly than previously assumed. The year has begun well for the tourism industry, with the number of visitors up by a third year-on-year in Q1, about the same increase as in Q1/2014. The outlook is for a significant increase in flights offered by Icelandic airlines during the year. The two largest international airlines project a year-on-year increase of about a fourth in passenger numbers. Goods exports look set to grow strongly as well. Marine product exports are expected to increase by nearly 7% year-on-year in volume terms, much more than was forecast in February, owing to a strong capelin season early in the year and the prospect of an increase in the cod quota during the next fishing year.

Strong increase in imports alongside growing domestic demand

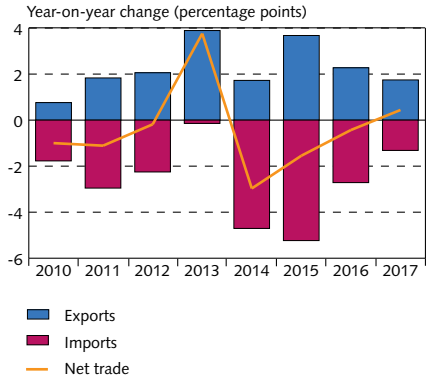
As was forecast in February, imports of goods and services grew by nearly 10% in 2014, the largest increase since 2005. This is due in part to substantial imports of ships and aircraft; however, if these items are excluded, export growth measured 8.4%, somewhat outpacing domestic demand growth. The most likely explanations for it are the rise in the real exchange rate, increased demand for consumer durables (almost all of which are imported), and growth in purchases of investment equipment.

As in the forecast for exports, it is assumed that goods and services imports will grow more than previously assumed, or about 11%, as opposed to just under 7% according to the February forecast. Although the outlook for increased import growth reflects stronger domestic demand to some extent, it is due mainly to significant growth in aircraft imports as compared with the February forecast. The increase is expected to materialise primarily in the first half of the year, totalling about 6% of goods imports. In addition, Statistics Iceland's external trade figures for Q1 show that imports of commodities and operational inputs grew markedly between years, owing partly to landings by foreign fishing vessels that sell capelin for fishmeal and oil production in Iceland. The outlook for 2015 is for goods imports to be driven to some extent by consumer goods imports, particularly motor vehicles and food and beverages, as was the case in 2014. Icelandic Tourist Board figures on Icelanders' departures via Keflavík Airport and the Gallup survey of individuals' overseas travel plans also indicate continued strong growth in services imports this year.

Contribution of net trade to GDP growth negative in 2015, as in 2014

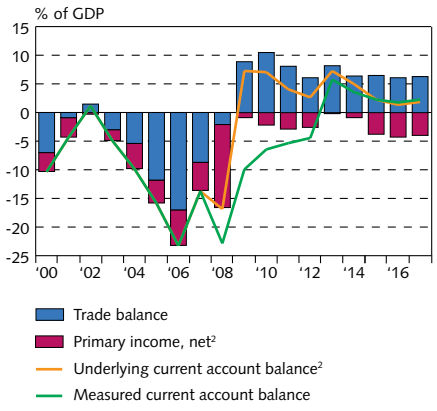
In 2014, the contribution of net trade to output growth turned out somewhat more negative than had been assumed in the Bank's February forecast, or about 3 percentage points (Chart IV-15). This is quite a turnaround from 2013, when it was positive by nearly 4 percentage points. Because of strong import growth in 2015, aircraft imports in particular, the contribution from net trade will also be negative this year, although not as strongly so as in 2014.

Chart IV-15
Contribution of net trade to GDP growth 2010-2017[1]



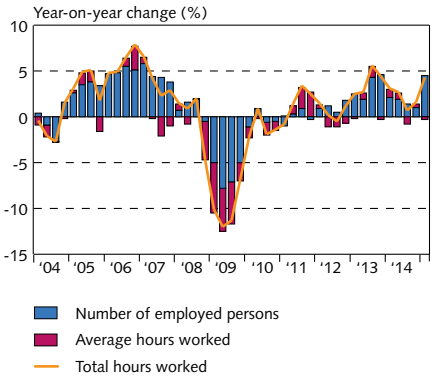
1. Central Bank baseline forecast 2015-2017.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-16
Current account balance 2000-2017[1]



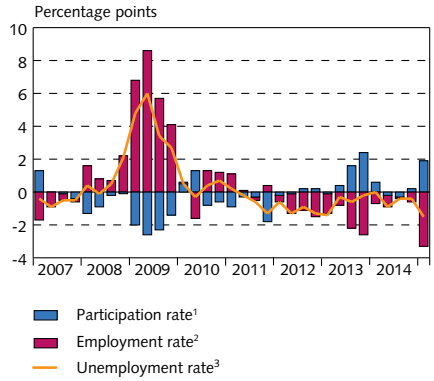
1. Secondary income included. Central Bank baseline forecast 2015-2017.
2. Excluding the calculated income and expenses of DMBs in winding-up proceedings but including the estimated effects of the settlement of their estates, and excluding the effects of pharmaceuticals company Actavis on the balance on income until 2012. Also adjusted for the failed DMBs' financial intermediation services indirectly measured (FISIM).
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-17
Changes in employment and hours worked
Q1/2004 - Q1/2015



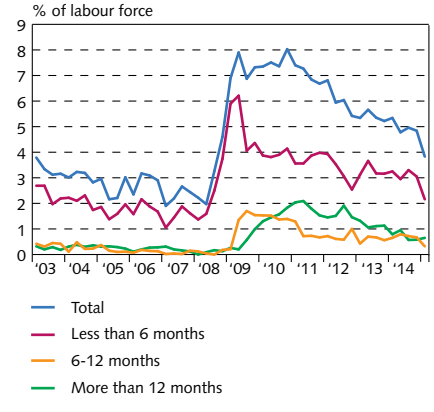
Source: Statistics Iceland.

Chart IV-18
Contribution to changes in unemployment rate
Q1/2007 - Q1/2015



1. Persons in the labour market as percentage of population aged 16-74. 2. Employed persons as percentage of population aged 16-74. 3. Unemployed persons as percentage of labour force. May not equal the sum of its components due to rounding.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-19
Unemployment by duration¹
Q1/2003 - Q1/2015



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

Trade surplus set to be smaller this year but broadly in line with February forecast in 2016 and 2017

The surplus on goods and services trade amounted to 6½% of GDP in 2014. If the baseline forecast materialises, it will be about the same this year, or some 2 percentage points less than was assumed in February. The deviation is due primarily to the above-described changes in external trade, as terms of trade are estimated to be broadly unchanged since the February forecast (Section II). The outlook for the next two years has changed very little, however, and the trade surplus is expected to remain around 6-6½% of GDP through the forecast horizon (Chart IV-16).

Underlying current account surplus projected over the forecast horizon

The underlying current account surplus totalled 100 b.kr. in 2014, or about 5% of GDP. It was some 2½ percentage points less than in 2013 but somewhat larger than was forecast in February, reflecting smaller returns on non-residents' domestic assets outweighing a smaller trade surplus. The underlying current account surplus for 2015 has been revised downwards since February, in line with the outlook for a smaller trade surplus. The outlook for the next two years is broadly in line with the February forecast, and an underlying surplus of roughly 2% of GDP is expected in 2017 (Chart IV-16). If this forecast materialises, national saving will remain above 20% of GDP over the forecast horizon (see Table 1 in Appendix 1).

Labour market

Rapid rise in labour demand

Labour demand grew much more rapidly in Q1 than in the latter half of 2014, and more than the Bank projected in February. The rise in total hours worked is due to a significant increase in the number of employed persons, as averaged hours worked declined slightly (Chart IV-17). Uncertainty about strikes and wage settlements appears not to have cut into staff recruitment – not yet, at least. According to figures from Statistics Iceland, the labour participation rate and the employment rate also rose markedly between years, and the number of persons outside the labour market declined. The slowdown in labour demand growth, particularly in Q3/2014, therefore appears to have been temporary, in line with the Bank's opinion at that time.

Seasonally adjusted unemployment according to the Statistics Iceland labour force survey (LFS) measured 3.8% in Q1/2015 and has begun to fall again, after remaining virtually unchanged since Q2/2014.[3] The fall in the unemployment rate is smaller than the rise in the employment rate, as the participation rate increased sharply (Chart IV-18). Figures on unemployment by duration show that long-term unemployment has also continued to decline year-on-year (Chart IV-19). Furthermore, inflows and outflows from the unem-

3. Unemployment as registered by the Directorate of Labour (DoL) was somewhat lower, or 3%, in Q1/2015, after adjusting for seasonality. It had declined marginally between quarters but by almost a percentage point between years.

ployment register appear to be keeping pace with one another, as the number of persons without work for six to twelve months has remained relatively stable.

In all sectors, there is greater interest in expanding staffing levels than in cutting back

Labour demand is likely to continue to increase. According to Gallup's survey among executives from Iceland's 400 largest firms, conducted in February and March, a fourth of respondents were considering adding on staff in the next six months, and just under 10% were considering downsizing. This outcome is similar to that from the November survey. There is more interest in recruiting than in laying off staff across all sectors, particularly in transport and tourism, where nearly half of companies were interested in adding on staff and only 4% considering reducing staffing levels.

Slow increase in average hours worked

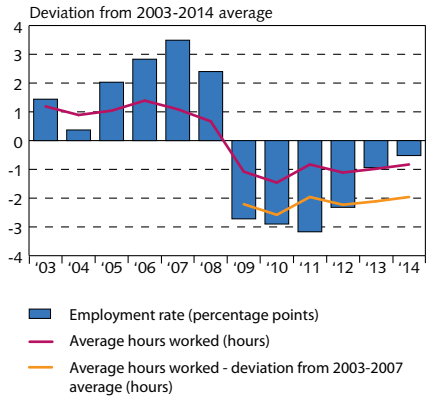
Average hours worked have risen slowly in recent years and are still well below both the 2003-2014 average and the pre-crisis average (Chart IV-20). During the period before 2008, excess labour demand was met not by lengthening the work week but primarily by increasing the number of workers, particularly imported labour. Between 2007 and 2009, the average work week was shortened by over two hours. Average hours worked began to lengthen in 2010, however, and have grown more or less steadily since then, apart from a downturn in 2012, due to the effects of the cost increases from the 2011 wage settlements. Average hours worked in 2014 were nonetheless nearly an hour below the 2003-2014 average and almost two hours below the pre-crisis average.

Responses to increased labour demand differ across sectors

Since average hours worked began to increase, total hours worked have risen in most sectors. The degree to which the increase has taken place through staff expansion versus longer average hours worked differs, however, and there appears to be no connection between this and whether the 2008-2010 contraction in total hours worked stemmed from downsizing or from reducing average hours worked (Chart IV-21).[4] During the contraction, total hours worked increased in both fishing and tourism. In the tourism sector, this trend has continued and intensified, and the sector's share in total hours worked rose from just under 4% in 2008 to almost 7% in 2014.[5] In the fishing industry, however, there was a turnaround in the latter half of the period, with reductions in both staffing levels and total hours worked. During the recovery, developments diverged in the sectors that expanded most strongly prior to the crisis: total hours worked

Chart IV-20

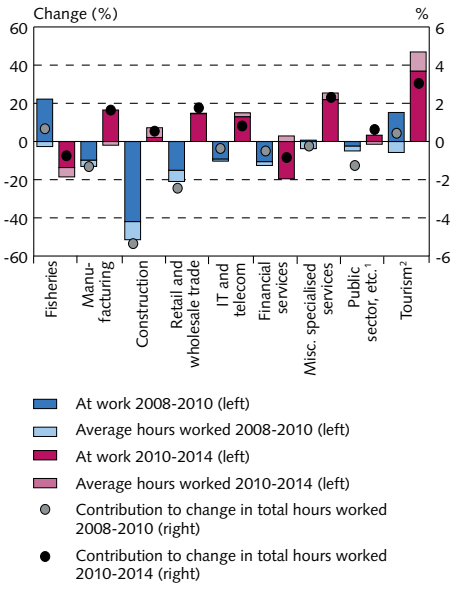
Average hours worked and employment rate 2003-2014



Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-21

Changes in the number of persons at work and in average hours worked 2008-2014, by sector, and contribution of each sector to change in total hours worked



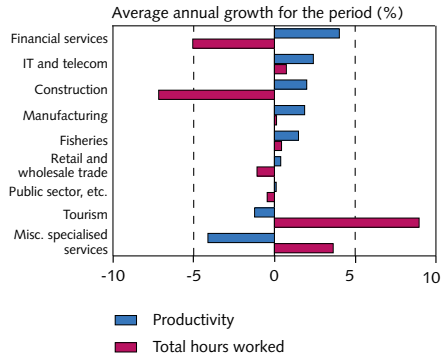
1. Public sector, etc., includes public administration and defence; education; health care and social services; and cultural, athletic, and recreational activities.
2. Tourism includes hotel and restaurant operations, air transport, and travel agency operations.

Sources: Statistics Iceland, Central Bank of Iceland.

4. This includes the total number of persons working during the reference week in their main and second jobs and their average hours, as comparable information on employed average hours worked (which is usually used in *Monetary Bulletin*) has yet to be published.
5. It is not possible to extract tourism directly from the sectoral classification. Here the tourism sector includes air transport (H:51), accommodation and food service activities (I), and travel agencies, tour operators, and other reservation services (N:79).

Chart IV-22

Productivity and total hours worked, by sector 2009-2014[1]

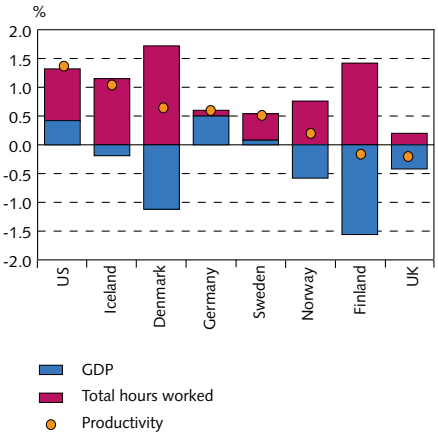


1. Productivity is calculated as gross factor income at constant prices divided by total hours worked. Gross factor income for 2014 obtained using the volume index for that year.

Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-23

Average annual productivity growth and contribution from components in selected countries 2009-2013

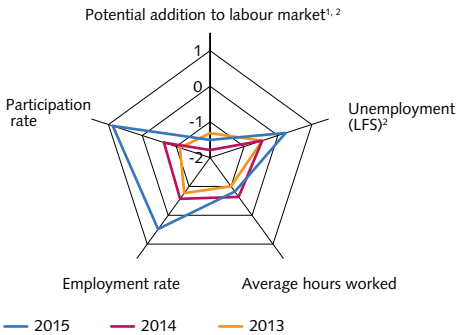


Sources: OECD, Central Bank of Iceland.

Chart IV-24

Indicators of labour market tension in the first quarter of the year

Deviation from first-quarter average in 2003-2015 (number of standard deviations)



1. Includes those who are outside the labour market and are (a) seeking work but cannot begin work within two weeks or (b) could begin work within two weeks but are not looking for work. Annual figures used as the first quarter of the following year. 2. Multiplied by -1 so that a negative deviation from the average indicates tension.

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

are still declining in the financial sector, whereas both average hours worked and the number of employed persons are rising in the construction industry.

Declining productivity in sectors with rapidly rising hours worked

Labour productivity has held unchanged for the past two years, and post-crisis productivity growth has been weak. An examination of the period beginning with the onset of the crisis reveals that productivity growth has been strongest in the sectors suffering large contractions in total hours worked, whereas the opposite is true of sectors where labour use has risen sharply (Chart IV-22).

Productivity developments in Iceland have been similar to those in many other developed economies (Chart IV-23). The explanations for this trend include high corporate debt levels and an uncertain economic outlook, which have held back investment; labour market inflexibility, which has hindered the movement of labour from declining industries to rising ones; and (at least in some countries), the rising share of low-productivity industries in the composition of production. This last explanation probably applies to Iceland to some extent, and business investment has been low in historical context. In this context, however, it should be noted that, in most developed countries, productivity growth had already slowed down before the crisis struck; therefore, there may be structural factors at work, such as changes in the age distribution or educational level of the labour force.

Indicators of factor utilisation

Some slack in the labour market remains

Owing to strong labour demand in Q1, the slack in the labour market diminished markedly year-on-year (Chart IV-24). In terms of the deviation of unemployment and the employment rate since 2003, the slack had already disappeared, but average hours worked and the measure of a potential addition to the labour market were still well below their historical averages.[6] The share of companies that report labour shortages has also increased steadily in recent years (Chart IV-25); however, over 80% still consider the labour supply adequate, as they appear to be able to import labour as needed. Furthermore, as is discussed above, there is still some scope to lengthen working hours. These results indicate that there may still be some scope to meet increased demand for labour without creating substantial wage pressures.

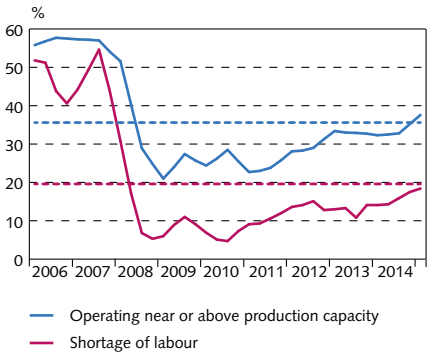
Factor utilisation increases and positive output gap develops

According to the baseline forecast, output was just below potential in 2014, in line with the Bank's February forecast. This assessment is subject to considerable uncertainty; however, a number of factors indicate that the margin of spare capacity narrowed in 2014.

6. Eurostat publishes a more detailed breakdown of the labour force which shows potential additions to the labour market. There are two groups: those who are outside the labour market and (a) are seeking work but cannot begin work within two weeks, or (b) could begin work within two weeks but are not looking for work (see also Box 3).

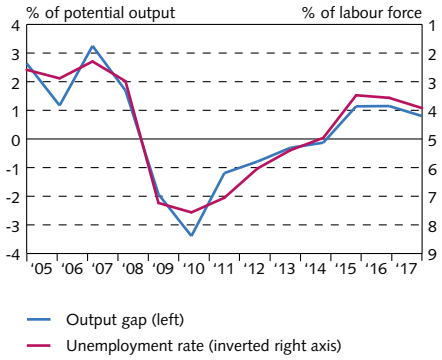
As is discussed above, indicators from the labour market imply that the slack is disappearing. Growth in labour demand has been robust year-to-date, and unemployment is probably close to its equilibrium level. Wage increases during the year also indicate that the slack in the economy is limited, and the wage share is projected to be close to its long-term average this year (see Chapter V). The share of firms reporting that they are operating at or above production capacity has risen above the average for the period since 2006 (Chart IV-25). Capital stock utilisation suggests the same. The capital output ratio fell by 2½ percentage points last year, which entails increased utilisation of the capital stock. It has fallen by over 8 percentage points from its 2009 peak. The forecast assumes that a small positive output gap had already developed in the first quarter of 2015. It is estimated to grow over the course of the year, to just over 1% of potential output during the year, and then begin to subside as the forecast horizon progresses (Chart IV-26).

Chart IV-25
Indicators of factor utilisation[1]
Q1/2006 - Q1/2015



1. According to Gallup survey among Iceland's 400 largest firms. Seasonally adjusted data. Twice a year respondents are asked if their production is near or above capacity; therefore, a linear interpolation is used to generate quarterly data. Broken lines show averages from 2006.
Sources: Gallup, Central Bank of Iceland.

Chart IV-26
Output gap and unemployment 2005-2017[1]



1. Central Bank baseline forecast 2015-2017.
Sources: Statistics Iceland, Central Bank of Iceland.

V Inflation

Inflation has been low in the recent term but has risen somewhat year-to-date, reaching 1.4% in April. Underlying inflation has also picked up but is still below the inflation target by most measures. Domestic inflation has been driven mainly by rising house prices and private services prices, but a stable króna, low inflation in trading partner countries, and a steep drop in global oil prices have pulled in the opposite direction. The outlook is uncertain, however, due in particular to considerable unrest in the labour market and expectations of large wage increases in coming years. Added to this is the uncertainty caused by still-rising house prices, stemming in part from the Government's debt relief measures. This has surfaced to a degree in the recent increase in long-term inflation expectations, indicating that expectations are still insufficiently anchored to the inflation target.

Recent developments in inflation

Inflation below target for over a year

Inflation measured 1.1% in the first quarter of the year, about ½ a percentage point higher than was forecast in the February *Monetary Bulletin*. Excluding house prices, however, the price level had fallen by 0.5% year-on-year during the quarter. The deviation from the forecast is due mainly to larger rises in house prices and domestic fuel prices than had previously been assumed. Domestic petrol prices fell by approximately a fifth after global oil prices tumbled in the latter half of 2014. Since January, however, they have risen again by roughly 9%, due in part to the considerable appreciation of the US dollar. Also, this steep drop in oil prices has passed through less than expected to price developments in domestic oil-consuming sectors.

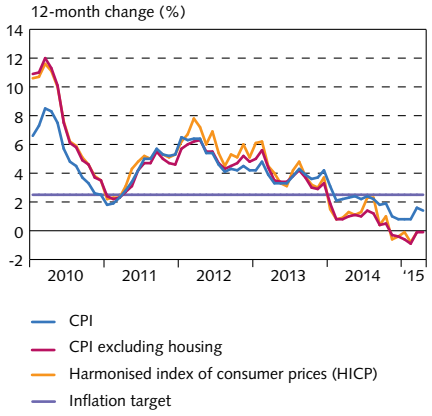
The CPI rose by 0.14% month-on-month in April, following an increase in March of 1%, the largest rise in a single month since February 2013. The main change in April was that house prices continued to rise. Twelve-month inflation measured 1.4% and therefore had nearly doubled since the last *Monetary Bulletin*, but down by almost 1 percentage point since April 2014 (Chart V-1). Inflation excluding housing has been negative by 0.1% over the past twelve months. The harmonised index of consumer prices (HICP), which excludes housing costs, had also declined by 0.1% year-on-year in March. However, HICP inflation measured 0.9% in March 2014.

Underlying inflation and other indicators of inflationary pressures

Housing and services still the main drivers of inflation

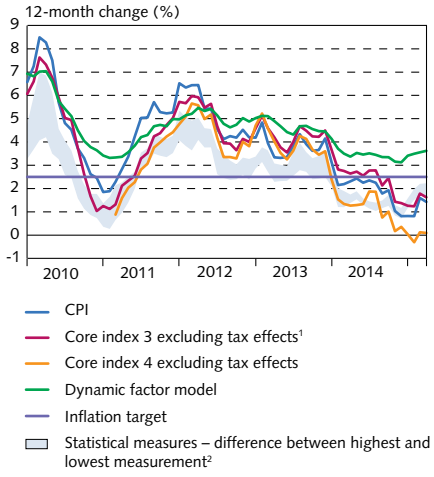
Underlying inflation has remained low in the recent term, indicating that the disinflation in 2014 was rather broadly based. Like measured inflation, it has risen somewhat since the last *Monetary Bulletin*. Underlying twelve-month inflation as measured by core index 3 (which excludes the effects of indirect taxes, volatile food items, petrol, public services, and real mortgage interest expense) measured

Chart V-1
Various measures of inflation
January 2010 - April 2015



Sources: Statistics Iceland, Central Bank of Iceland

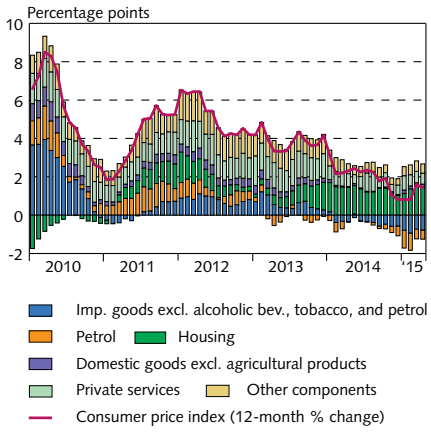
Chart V-2
Various measures of underlying inflation
January 2010 - April 2015



1. Core index 3 is the CPI excluding prices of agricultural products, petrol, public services, and the cost of real mortgage interest. Core index 4 excludes the market price of housing as well. 2. Underlying inflation is measured as the weighted median and as the trimmed mean, excluding 5%, 10%, 15%, 20% and 25% of components with the largest price changes.

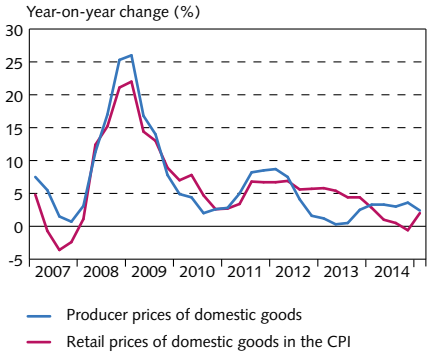
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-3
Components of CPI inflation
Contribution to inflation January 2010 - April 2015



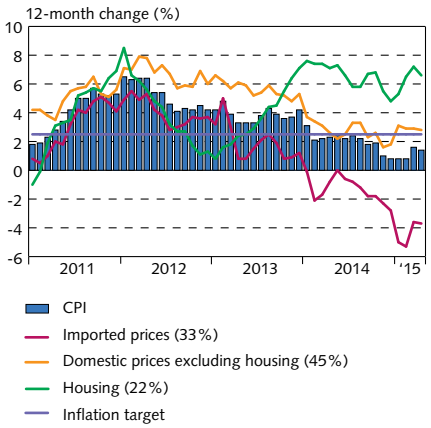
Source: Statistics Iceland.

Chart V-4
Producer and retail prices of domestic goods
Q1/2007 - Q1/2015



Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-5
Imported and domestic inflation[1]
January 2011 - April 2015



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

1.6% in April, up from 1.3% in January (Chart V-2). Statistical measures of underlying inflation also indicate a slight rise in the recent past. Using the weighted median and trimmed mean measures gives an underlying inflation figure of 1.7-2.2%, up by an average of ½ a percentage point from January. Underlying inflation measured using a dynamic factor model is higher, however, or about 3½%, and has risen slightly in the recent term (see Box 5).

Inflationary pressures therefore appear to be limited, but there are uncertainties ahead, particularly as regards the effects of pending wage settlements and house prices. Both of these are major drivers of inflation at present.[1] House prices have risen rapidly in the recent term, with the twelve-month increase measuring roughly 8½% in April, based on the market value of housing in the CPI (see Section III). Apart from housing, the CPI component that has contributed most to twelve-month inflation is the private services component, which was up 2.5% year-on-year in April (Chart V-3). Domestic cost increases – wages in particular – usually have a strong impact on this component.

Various other indicators of domestic inflationary pressures do not suggest that the outlook has changed materially, however. Producer prices of goods sold domestically were up nearly 2½% year-on-year in Q1, which is well in line with the 2% increase in domestic goods prices in the CPI over the same period (Chart V-4).

According to the results of the Gallup survey carried out among corporate executives in February and March, respondents were much more upbeat about developments in EBITDA margins in the upcoming six months than they were in both the September survey and the one carried out in February 2014. By this measure, executives seemed more optimistic than they have been since February 2007. The outlook appears to have improved in the vast majority of sectors, especially the financial/insurance and industrial/manufacturing sectors. This could be an indication that firms have some scope to absorb cost increases without passing them through to prices or slowing down staff recruitment. Whether they use that scope in this way, however, depends on market conditions at any given time.

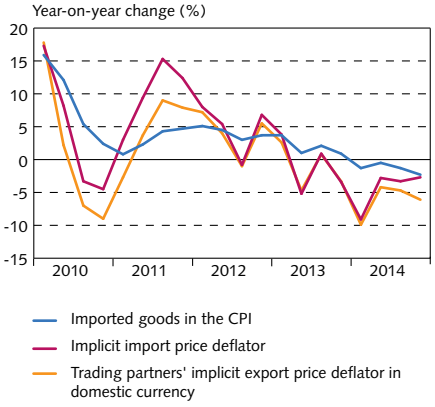
Imported inflation negative since the beginning of 2014

A stable exchange rate, low trading partner inflation, and the steep drop in global oil prices are the main contributors to the recent episode of low inflation in Iceland. Imported goods prices have fallen by 3.7% in the past twelve months and have lowered the CPI by 1.3 percentage points over this period (Chart V-5). Given the stability of the króna and the sharp drop in oil prices in the past year, plus the cancellation of excise taxes at the beginning of 2015, imported goods prices could have been expected to fall further overall than they have done. In this context, it is interesting to examine the difference

1. According to the Bank's assessment of the economic impact of the Government's mortgage debt relief package (see Appendix 2 in *Monetary Bulletin* 2014/1), the debt reduction was estimated to increase inflation by 0.2 percentage points relative to the baseline forecast in 2015 and about 0.4 percentage points per year in the following two years.

between developments in imported goods prices according to the CPI, on the one hand, and developments in the implicit import price deflator in Iceland and the implicit export price deflator of Iceland's trading partners, on the other (Chart V-6). The import price deflator reflects developments in the price of imported goods and services, whereas the majority of the imports in the CPI are goods only. Imported services prices are generally stickier than goods prices and should therefore have declined less in the recent past, particularly in view of the significant fall in global food and oil prices. However, the opposite has happened: the import price deflator has tracked export prices in major trading partner countries and, in the recent term, has fallen more than imported goods prices according to the CPI, although the two converged at the end of 2014. This may indicate that lower import prices are being passed through to retail prices more slowly than is warranted. It may be due partly to the fact that long-term inflation expectations have persistently been rather high in recent years, and well above the Central Bank's inflation target. Firms are less likely to pass cost reductions than cost increases through to prices if they expect inflation to rise in the future.[2]

Chart V-6
Imported goods and services prices
Q1/2010 - Q4/2014

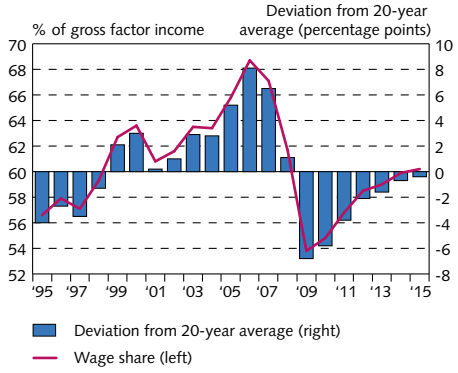


Sources: Macrobond, Statistics Iceland, Central Bank of Iceland.

Inflationary pressures from the labour market may be underestimated

In March of this year, Statistics Iceland published revised wage cost figures based on the national accounts for 2008-2013 and the first figures for 2014. As usual, national accounts figures for wages and related expenses changed somewhat upon revision. The revision in wages per man-year is minor for the period as a whole, although the impact of the revision varies from year to year. The wage share (wages and related expenses relative to gross factor income) was 59.9% in 2014, an increase of 0.9 percentage points year-on-year (Chart V-7). It was only 0.7 percentage points below its twenty-year average, and if the baseline forecast materialises, the gap will be more or less closed this year.

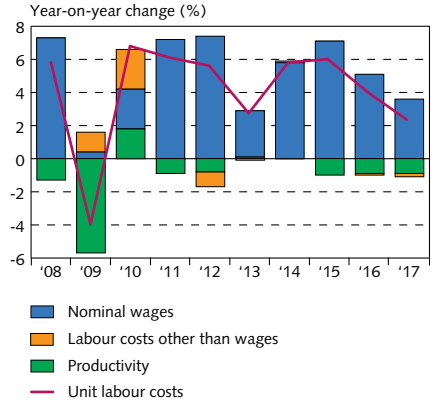
Chart V-7
Wage share 1995-2015[1]



1. The 20-year average is 60.6% (base 1997). The 2015 annual average is based on the Central Bank's baseline forecast in MB 2015/2.
Sources: Statistics Iceland, Central Bank of Iceland.

The wage index rose by 1.2% quarter-on-quarter and 6.1% year-on-year in Q1/2015, which is a somewhat larger increase than was forecast in February. Because of the great uncertainty about the outcome of the wage negotiations currently underway, this forecast assumes that pay rises throughout the forecast horizon will be similar to those assumed in the previous forecast, which provided for a front-loaded three-year agreement involving an average nominal pay increase of just over 5% per year. Although quite sizeable, this is considerably less than the wage demands currently being made.[3] Unit labour costs are assumed to rise by just over ½ a percentage point more in 2015 than was projected in February, or by 5.7%, owing to larger pay increases and slightly weaker productivity growth (see Section IV and Chart V-8).

Chart V-8
Unit labour costs and contribution of underlying components 2008-2017[1]



1. Labour productivity growth is shown as a negative contribution to an increase in unit labour costs. Central Bank baseline forecast 2015-2017.
Sources: Statistics Iceland, Central Bank of Iceland.

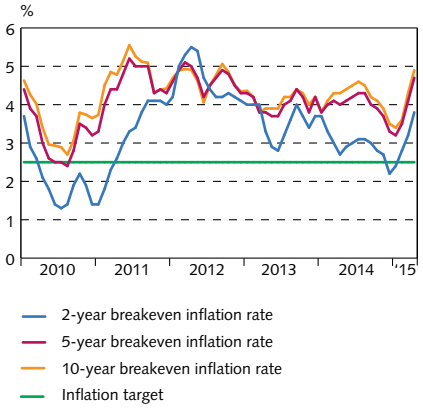
2. See the paper by Thorvardur Tjörvi Ólafsson, Ásgerdur Ó. Pétursdóttir, and Karen Áslaug Vignisdóttir (2011), "Price setting in turbulent times: Survey evidence from Icelandic firms", Central Bank of Iceland *Working Papers*, no. 54.

3. Section I shows an alternative scenario reflecting much higher wage increases than are assumed in the baseline forecast.s

Chart V-9
Inflation and inflation expectations one year ahead
Q1/2010 - Q2/2015

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

Chart V-10
Breakeven inflation rate[1]
January 2010 - April 2015



1. Forward breakeven inflation rate based on nominal and indexed yield curves (monthly averages). The breakeven rate indicates the expected annual inflation rate in two, five, and ten years.
Source: Central Bank of Iceland.

Inflation expectations

Labour market unrest has prompted a rise in inflation expectations

By most measures, inflation expectations were at or near the inflation target when the February *Monetary Bulletin* was published. However, there are signs that they have risen markedly since then, owing to uncertainty about the labour market and expectations of hefty pay increases in the near term. The two-year breakeven inflation rate in the bond market, as calculated from the spread between interest on indexed and non-indexed bonds, averaged 3.8% in April, as compared with approximately 2½% in January. Short-term inflation expectations based on bond market spreads should be interpreted with some caution because of the shortage of indexed short-term bonds issued. Furthermore, the short- and long-term breakeven inflation rates include a risk premium related to bond liquidity, as well as a risk premium reflecting uncertainty about inflation, which has probably risen since February (see Box 1). The increase in market agents' short-term inflation expectations suggests, however, that short-term inflation expectations have in fact risen. According to the survey carried out by the Bank in early May, just before this *Monetary Bulletin* went to press, respondents projected inflation at 3½% one year ahead or 1 percentage point more than in the January survey (Chart V-9). Their expectations of inflation two years ahead were unchanged at 3%, however. The Gallup survey of corporate expectations, carried out in February and March, gave similar results, with executives projecting inflation at 3% one year ahead, or ½ a percentage point more than in December. In a comparable survey conducted among households, respondents' one-year inflation expectations were also 3%. Not only was this a reduction of ½ a percentage point between surveys, it was the lowest result since such surveys were introduced. Both corporate and household inflation expectations two years ahead were virtually unchanged at 3% and 4%, respectively. Furthermore, it appears that uncertainty about inflation one year ahead has grown somewhat since the latter half of 2014, as can be seen in the increased dispersion in participants' responses.

Long-term inflation expectations have also increased

There are indications that long-term inflation expectations have also risen in the recent past. These expectations appear to be sensitive to various short-term factors such as expectations of large pay increases in connection with labour market disputes. Moreover, inflation expectations seem to have risen more rapidly now than they did in connection with the spring 2011 wage negotiations (Box 2). The five- and ten-year breakeven inflation rates in the bond market averaged almost 5% in April, an increase of 1½ percentage points since January. Market agents' long-term inflation expectations also rose slightly. They projected that inflation would average 3.2% in the next five and ten years. Progress has been made in anchoring inflation expectations in the recent term, but work remains to be done in order to ensure that they remain at target in the long run.

Box 1

Risk premia and estimates of inflation expectations in the bond market

Reliable measures of inflation expectations – i.e., the inflation rate that households and businesses expect in the future – are important for the conduct of monetary policy. Among other things, inflation expectations affect firms' pricing decisions and workers' wage demands. For instance, workers are likelier to demand large nominal wage increases when they expect high inflation. Firms are also likelier to agree to such demands if they expect large general price increases. Inflation expectations are therefore an important determinant of inflation. In order to keep inflation at the target for a sustained period, the Central Bank must ensure that expectations about future developments in inflation are also close to target.

Methods of measuring inflation expectations

Inflation expectations are usually measured in two ways: with surveys and through analysis of the yield curve in the bond market. The Central Bank of Iceland uses both of these methods. Experience has shown that there can sometimes be a discrepancy between survey findings and the indications from the bond market (Chart 1). This is partly because the breakeven inflation rate in the bond market is based on a comparison of interest on nominal and indexed bonds, which includes, in addition to inflation expectations, a risk premium that can vary over time.[1] As a result, it is not possible to determine inflation expectations directly from the interest rate spread; only the sum of inflation expectations and the risk premium can be directly observed. This risk premium can be divided into two parts. The first part contains the compensation that risk-averse investors demand in order to consider investments in indexed and nominal bonds equally attractive; that is, the risk premium that accompanies investment in nominal bonds due to uncertainty about the inflation outlook. This part of the risk premium is often called the *inflation risk premium*. The other part of the risk premium reflects factors such as varying relative bond liquidity, including differing demand and supply effects and possible differences in tax treatment. In Iceland, it may also reflect differences in default risk because of uncertainty about the position of the Housing Financing Fund (HFF), the main issuer of indexed bonds. This part of the risk premium is commonly referred to as the *liquidity premium*. In general, the inflation risk premium can be expected to be positive, while the liquidity premium can be either positive or negative, depending, for instance, on how relatively deep the markets for indexed and nominal bonds are.

At first glance, it might seem as though surveys give a cleaner measurement of actual inflation expectations. The reliability of such surveys depends on a number of factors, however, such as respondents' inflation awareness, the size of the survey sample, and the number of respondents. Nor is it a given that all respondents will have the same measure of inflation in mind when they respond. Therefore, survey-based inflation expectations contain possible measurement errors. Surveys of inflation expectations are also generally carried out every few months, while observations from the yield curve are available much more frequently. Furthermore, inflation expectations from the bond market are based on actual trades in the market. Both methods therefore have their advantages and disadvantages.

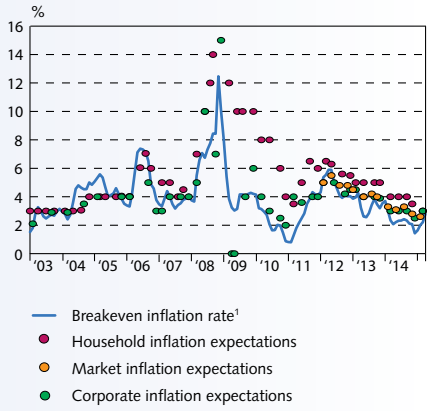
Information from the bond market and from survey questionnaires can be used together in order to obtain a more reliable estimate of the risk premium and therefore a more accurate estimate of inflation expectations. This Box discusses estimates of the risk premium according to international research and what it could be in Iceland.

1. Estimates of market participants' inflation expectations obtained from inflation swaps are also available in many other countries.

Chart 1

Inflation expectations and one-year breakeven inflation rate

January 2003 - April 2015

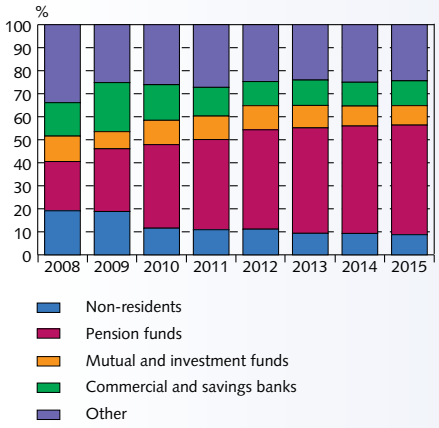


1. Forward breakeven inflation rate based on nominal and indexed yield curves (monthly averages). The breakeven rate indicates the expected annual inflation rate in one year's time.

Sources: Gallup, Central Bank of Iceland.

Chart 2

Owner classification of Government-guaranteed bonds 2008-2015[1]



1. Based on data until 31 March 2015.
Source: Icelandic Securities Depository.

International studies of risk premia in the bond market

There are a number of international studies that estimate the size of risk premia. Most studies focus on the US market, and they indicate that the one-year risk premium is in the range of 0-⅓ of a percentage point and the ten-year premium ½-1 percentage point.[2] Studies of the UK bond market give similar results, or five- and ten-year risk premia in the ¾-1 percentage point range, whereas studies of the euro area give lower results, or a ten-year premium of about ¼ of a percentage point.[3] All of these studies indicate that risk premia can vary over time, and many indicate as well that they rise further along the yield curve (i.e., they are higher for longer bonds). They also imply that risk premia increase as inflation grows more volatile and uncertainty about the inflation outlook increases.

Possible reasons for higher risk premia in Iceland

It is likely that risk premia are higher in Iceland than in other industrialised countries. For instance, inflation has been more volatile in Iceland. In addition, bond liquidity is probably less in Iceland because of the small size of the domestic bond market. As a result, relatively small trades can have a significant effect on prices – and therefore on risk premia – without any actual change in inflation expectations.

The supply and demand effects resulting from the capital controls have also reduced the liquidity of some bond series in recent years and distorted their pricing to an extent. The effects on shorter nominal Treasury bonds are due largely to the fact that, in recent years, the vast majority of them have been held by non-resident investors, whose assets are locked in by the capital controls.[4] The additional restrictions recently placed on these non-residents probably exacerbate the problem. The effects of the capital controls are not limited to the short end of the yield curve, however; they affect price formation on longer bonds as well. In all likelihood, the controls have stimulated pension funds' demand for domestic Treasury and HFF bonds, as is reflected in a doubling of their proportional holdings since 2008 (Chart 2). The steady demand from these large funds has reduced market turnover, with the associated impact on price formation, particularly in the case of indexed Treasury and HFF bonds, whose issuance has been limited in recent years. Because of the funds' size and the rules governing their accounting, price formation in the market for indexed bonds is probably less effective than it would otherwise be, which could surface, for example, in wide bid-ask spreads.

Estimating risk premia in the Icelandic bond market

With the methodology described in Gürkaynak *et al.* (2010), it is possible to estimate risk premia in the domestic bond market from survey questionnaire results and the spread between indexed and non-indexed bonds. The one-year premium can be estimated, but it is more difficult to obtain a reliable estimate of longer-term premia because of a shortage of surveys of long-term inflation expectations over a long enough period of time. As a rough estimate, the one-year risk premium appears to have been about ½ a percentage point, on average, from January 2002 through April 2015. In line with international research, the estimate implies also that the

2. See, for example, Ang *et al.* (2008), Buraschi and Jiltsov (2005), Chen *et al.* (2010), Chernov and Mueller (2012), D'Amico (2008), Durham (2006), and Campbell and Viceira (2001).
3. See, for example, Campbell and Shiller (1996), Shen (1998), and Joyce *et al.* (2010) for the UK, and Hördahl and Tristiani (2012, 2014), for example, for the euro area.
4. Non-residents now own nearly 60% of issued Treasury bonds maturing in the next four years.

premium fluctuated during the period, with a standard deviation of 1½ percentage points. This is a somewhat higher short-term premium than is indicated by the studies cited above, but it accords well with the results of a Central Bank's survey among market agents, conducted in late January. According to that survey, market agents estimated the one-year inflation risk premium at 0.4, on average, and the two- and five-year premia at 0.5 and 0.8 percentage points, respectively.

The above-described empirical estimates of the risk premium should be interpreted with some caution, however, owing to a shortage of short-term indexed Treasury and HFF bonds, which increases the uncertainty at the short end of the real yield curve and thereby the uncertainty about short-term premia. Changes in the spread between nominal and real rates need not necessarily reflect changes in inflation expectations or risk premia; they may simply reflect changes in observed inflation. This highlights the importance of further research into risk premia in the Icelandic bond market. The above-described results indicate, however, that the bond market risk premium in Iceland is probably somewhat higher than that in other developed countries, which is unsurprising given Iceland's history of high and volatile inflation.

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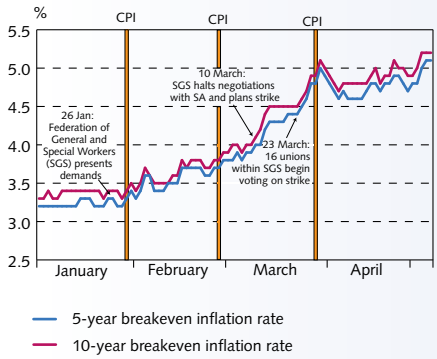
Box 2

Inflation expectations in the run-up to wage settlements: comparison with 2011

Chart 1

Breakeven inflation rates[1]

Daily data 2 January 2015 - 8 May 2015

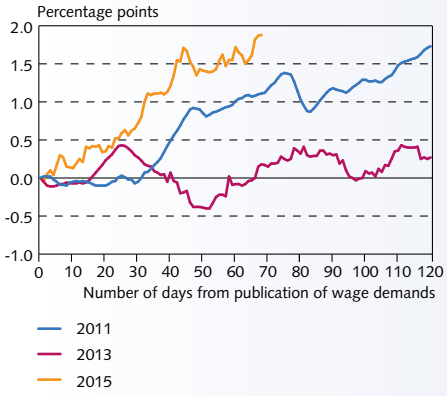


1. Vertical lines indicate when the consumer price index was published. Forward breakeven inflation rate based on nominal and indexed yield curves. The breakeven rate indicates the expected annual inflation rate in five and ten years.

Source: Central Bank of Iceland.

Chart 2

Change in breakeven inflation rate from beginning of wage negotiations[1]



1. The breakeven inflation rate is based on the five-year breakeven rate in the bond market five years ahead; i.e., expectations concerning average inflation in 2020-2025. As of 6 December 2010 for the 2011 settlements, 4 November 2013 for the 2013 settlements, and 27 January 2015 for the 2015 negotiations.

Source: Central Bank of Iceland.

Inflation expectations were close to the Bank's inflation target by most measures at the end of 2014. However, there are signs that they have risen again recently, both in terms of the breakeven inflation rate in the bond market and in terms of market agents' and corporate executives' expectations. According to the survey carried out recently by the Central Bank, market agents' short-term inflation expectations have risen by almost 1 percentage point, to 3½%, and long-term expectations have risen by 0.2 percentage points, to 3.2%. Furthermore, the five- and ten-year breakeven inflation rates in the bond market have risen by almost 2 percentage points since the end of January, to just over 5% in early May.

It is likely that a large share of this increase in inflation expectations is due to concerns that the ongoing labour dispute will result in large pay increases, which would inevitably lead to a sizeable increase in inflation (see Section I). As Chart 1 indicates, news coverage of the labour market situation appears to have made a strong impact on the breakeven inflation rate, which is in line with market agents' responses to the Bank's May survey, where a majority of respondents considered the labour market situation to be the main cause of the rise in the breakeven rate during the year.

It is interesting to compare developments in the breakeven inflation rate with those during the run-up to the wage settlements in early 2011. The situation then was in some respects similar to that at the beginning of 2015: inflation was low, and wage negotiations were pending. However, the slack in the economy was more pronounced then, and unemployment was considerably higher. On the other hand, it could be assumed that inflation expectations are more firmly anchored to the inflation target now than they were then, as inflation has been low and stable for some time, whereas in spring 2011 it had been low only for a short period. The nominal pay increases being demanded now are considerably larger, however, and inflation expectations appear to have risen further and faster: the long-term breakeven rate has risen by almost 2 percentage points in three months, just over ½ a percentage point more than over a similar period in 2011 (Chart 2).

This is cause for major concern in view of the near-term inflation outlook. As yet, inflation is still relatively low, but the experience of 2011 should be a word to the wise. At the beginning of 2011, inflation was 1.8%, slightly above its current level, and had been close to the target for just a short period. By mid-2011 it had risen to 5%, and it peaked at 6.5% early in 2012. This differs markedly from developments in the wake of the end-2013 wage settlements, which provided for relatively modest pay increases. At that time, inflation expectations changed little (Chart 2), and inflation remained close to the target.

Box 3

New data to estimate slack or tension in the labour market

At present, Statistics Iceland only publishes figures on the status of the working-age population (16-74 years) as defined by the International Labour Organization (ILO); that is, the number of persons employed, unemployed, and outside the labour market.[1] Employed persons have been classified according to whether they are employed full- or part-time, and persons outside the labour market have been classified according to whether they are students, retirees, disability pensioners, or homemakers, or whether they on sick leave or childbirth leave.

Further classification of working-age persons

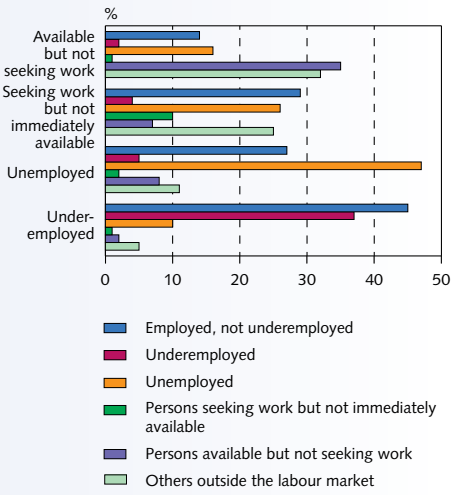
Eurostat publishes a more detailed classification of working-age persons. First of all, part-time workers are divided into two groups: those who are satisfied with their working hours and those who work part-time but are willing and able to work more and can are therefore partially unemployed.[2] People falling into this group are classified as "underemployed." The second category identified by Eurostat includes those persons outside the labour market who fall into two sub-groups: those who are seeking work but cannot begin working within two weeks, and those who could begin working within two weeks but are not actively seeking a job. The former sub-group includes, for instance, those who cannot work because they cannot find childcare, and the latter includes, among others, people who have given up looking for work. Both sub-groups are classified as being outside the labour market because they do not fulfil the ILO criteria for unemployment. They are considered more attached to the labour market than others classified as being outside the labour market, however, and are in many ways similar to those defined as unemployed by ILO criteria. These two latter groups are often referred to as the potential additional labour force (PAF). Underemployed persons are also considered a potential addition to the labour force even though they are already part of it, as they would like to increase their working hours and can be viewed as part-time unemployed. The classification gives a more complete description of people's status than the conventional three-group classification and is therefore an important supplement to the criteria that can be used to assess the slack or tension in the labour market.

How strong is labour market attachment?

These three groups' attachment to the labour market varies, however, as can be seen in an examination of the probability of their moving to another category after a given period of time (for instance, a year). Although the likelihood of such a transfer between categories has not yet been estimated for Iceland, Eurostat has published such estimates based on EU labour force surveys (Chart 1).[3] As expected,

Chart 1

Probability of labour status transition within the EU[1]

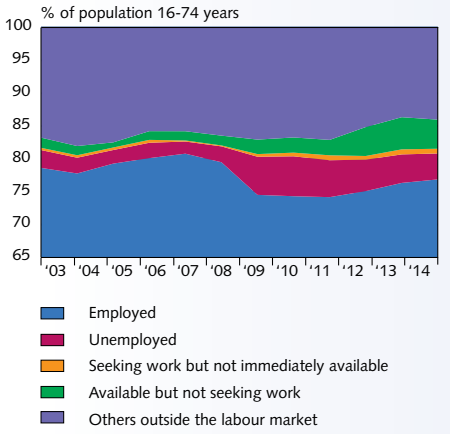


1. The y-axis shows the initial status, and the columns show the status one year later.
Source: Eurostat.

1. People are considered employed (to have work) according to the ILO definition if they worked one hour or more during the reference week or were absent from work that they usually carry out. Those considered unemployed by ILO criteria are those without jobs who fall into one of the following categories: (1) have actively sought work in the last four weeks and are available to begin work within two weeks; (2) have found a job but have not yet begun work; (3) are waiting to be called to work; and (4) have given up looking for work but would be available to begin working within two weeks if offered a job. People are classified as outside the labour market (economically inactive) according to the ILO definition if they are out of work and do not satisfy the requirements for being considered unemployed.
2. A distinction is made according to whether those wishing to work more hours are employed part-time or full-time. Those who are employed full-time and want to work more want more income, not necessarily longer working hours, whereas those who are employed part-time and want to work more are classified as underutilised labour force.
3. The calculations are based on a comparison of the status of persons in the labour market in each quarter of 2009 and in the same quarter of the following year. Published in "New measures of labour market attachment". *Statistics in Focus*, Eurostat 57, 2011.

labour market attachment is greatest among the underemployed, and much stronger than for the other two groups, as the underemployed are already working. After a year, the underemployed are likeliest to have moved into the category of the employed (and satisfied with their working hours), although they are also highly likely to remain in the same category. Although the probability of their moving to the unemployed category is small, it is greater than for other employed persons. Individuals who are seeking work but cannot begin work immediately are equally likely to have become employed, to be classified as unemployed according to the ILO definition, or to be no longer seeking work (25-29%) in one year's time. It is relatively unlikely that individuals in this group will still be there one year on (10%). On the other hand, those who are not actively seeking work but could begin immediately are very likely to be in the same position a year later and are more or less equally likely to be no longer available for work in one year's time. This group's attachment to the labour market is therefore not very strong, although there is some likelihood that its members will have become more active and received a job or will be classified as unemployed after one year.

Chart 2
Classification of persons of working age



Source: Eurostat.

Developments in Iceland

As yet, Eurostat only publishes data for Iceland on the groups outside the labour market; it does not publish data on the underemployed. In order to estimate the size of these groups in Iceland, it is interesting to examine two different years: for 2014 and for 2007 when there was significant tension in the labour market and most people who were willing and able to work were probably employed (Chart 2).[4] To facilitate comparison, both categories are calculated as a percentage of the population aged 16-74. In 2014, 80.8% of persons in the 16-74 age group were in the labour market, as opposed to 82.6% before the crash. By the same token, 76.9% were employed and 3.9% unemployed according to ILO criteria in 2014, as opposed to 80.8% and 1.9%, respectively, in 2007.[5] The percentage of those classified as a potential addition to the labour force and for whom there are figures for Iceland – that is, those seeking employment but unable to begin working within two weeks and those able to begin work but not seeking employment – was just over 5.2% in 2014, as opposed to 1.6% in 2007. If these groups had been included with those defined as unemployed according to ILO criteria, unemployment would have measured over 9% in 2014 and 3.4% in 2007. If they had been at work, however, the employment rate would have been 82% in 2014, and not just under 77%.

It is surprising how little change there was in these two groups during the period prior to 2008, given the substantial excess demand for labour during the pre-crisis upswing. As expected, the groups grew somewhat during the post-crisis period, peaking in 2013 at 5.7% of the population aged 16-74 and then tapering off somewhat in 2014, almost entirely due to a decline in the number of persons who could work but are not seeking employment. Those who could work but are not actively seeking employment appear to have increased in number since 2011-2013, perhaps indicating that more people have given up on finding a job. In 2014, this measure of the potential addition to the labour market was still well below its historical average, although the group declined in size year-on-year (see Section IV).

4. Figures used here are from the Eurostat labour force survey and may differ from Statistics Iceland figures.
5. It is conventional to measure unemployment as the number of jobless persons as a percentage of the labour force. By this criterion, the unemployment rate was 4.9% in 2014 and 2.2% in 2007.

Box 4

Monetary Policy Committee voting pattern: six years' experience[1]

In early 2009, changes were made to the monetary policy framework in Iceland and the current structure put into place. The Act on the Central Bank of Iceland was amended so that monetary policy formulation and decisions on the application of the Bank's policy instruments would thenceforth be carried out by a five-member Monetary Policy Committee (MPC) instead of the previous three-member Board of Governors. Sitting on the Committee are three representatives from the Central Bank – the Governor, Deputy Governor, and Chief Economist – and two external experts in the field of macroeconomics and monetary policy.

The changes in the monetary policy framework were implemented in the wake of the financial crash of autumn 2008, when over nine-tenths of the Icelandic banking system failed at a time of global financial crisis. Experience from the financial crisis, both in Iceland and elsewhere, indicated a need for further strengthening of the overall monetary and macroeconomic policy framework. In addition, the Central Bank had been unsuccessful in controlling inflation for most of the period from the adoption of the inflation target in 2001 until the onset of the crisis in 2008. There were many reasons for this. For instance, monetary policy lacked credibility, and inflation expectations were insufficiently anchored to the inflation target (see Central Bank of Iceland, 2010 and 2012, among others). As a result, it was important that the new framework should enhance the credibility of monetary policy while simultaneously ensuring its independence.

The current framework has now been in place for just over six years, and the votes of the MPC for the period 2009-2014 are publicly available (see the Bank's *Annual Reports* for this period).[2] Examining how the Committee's decision-making took place and how individual members cast their votes during this period may reveal whether there are any discernible voting patterns and whether such patterns are similar to those found in other countries with comparable frameworks.

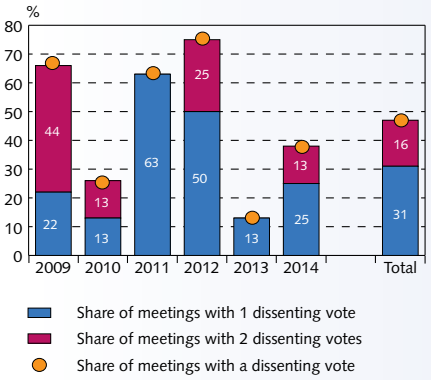
Change in monetary policy framework

Research and international experience indicate that a monetary policy committee comprising several members is preferable to a single decision-maker (see Blinder, 2009). Such committees can vary in structure, however. They usually fall into two categories. In the first category are individualistic committees, whose members vote in accordance with their own opinions and whose results are obtained by majority vote. Such committees do not place particular emphasis on achieving unanimity on the decision, and each member is responsible for his or her vote. The monetary policy committees in the UK and Sweden, as well as that in the US since the mid-2000s, are examples of individualistic committees. Falling into the other category are collegial committees, which emphasise unanimity about decisions, at least publicly, with the entire committee supporting the decision. Formal voting does not always take place, and the voting patterns are not disclosed when they do take place. Norges Bank's

1. This Box is based on a paper by Karen Áslaug Vignisdóttir, soon to be published in the Bank's *Economic Affairs* series.
2. The experience of the current arrangement appears to have been positive: Inflation was close to 20% when the MPC was established, but it has been at or below target since February 2014. As is discussed in Box I-1 in *Monetary Bulletin* 2014/2, volatility has diminished in the Icelandic economy. Long-term inflation expectations appear to have remained at or above 4% for most of the period, however, which indicates that there is still progress to be made in ensuring lasting price stability in Iceland. Furthermore, the liberalisation of the capital controls is an unresolved issue. The controls have supported exchange rate stability and the economic recovery that has been achieved over this period.

Chart 1

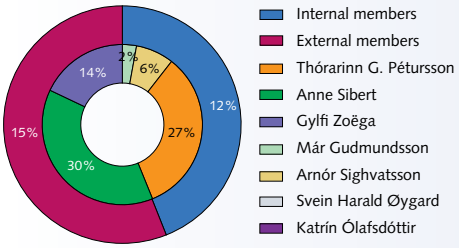
Average number of MPC votes dissenting from the majority 2009-2014



Source: Central Bank of Iceland.

Chart 2

Share of meetings where MPC members dissent from the majority 2009-2014



Source: Central Bank of Iceland.

MPC is an example of such a committee, and the European Central Bank operates under a collegial framework as well.

The change in Iceland's monetary policy framework in 2009 entailed broad-based reforms in the formulation of monetary policy and the communication of policy decisions. Current legislation stipulates that the MPC must meet at least eight times a year, and decisions are based on a thorough assessment of developments and prospects for the economy, monetary affairs, and financial stability. Each interest rate decision is preceded by in-depth one- to two-day meetings during which Bank staff give presentations to the MPC on recent developments in the economy and financial markets, as well as other topics of importance, as appropriate. Sometimes the Committee requests external presentations on topics under consideration. The objective is to ensure that all points of view are included and that decisions are based on solid professional reasoning and are as transparent and foreseeable as can realistically be expected. According to the MPC's rules of procedure, after listening to the other members' position, the Governor proposes an interest rate decision that he considers likely to garner majority support. If members are not unanimously in agreement, they vote on the proposals that have been presented, and a simple majority determines the outcome. The minutes of the Committee's meetings are made public two weeks after each decision, and the votes cast by each Committee member are revealed in the Bank's *Annual Report* the following year. The monetary policy framework in Iceland is therefore similar to that in the UK and Sweden.

Voting patterns

During the period 2009-2014, the MPC held 49 rate-setting meetings. The Committee chose to keep interest rates unchanged at just over half of these meetings; it lowered them in 35% of instances and raised them in 12% of instances. The decision was unanimous in just over half of the instances, including eight meetings featuring a unanimous decision to reduce rates and one unanimous decision to raise them.[3]

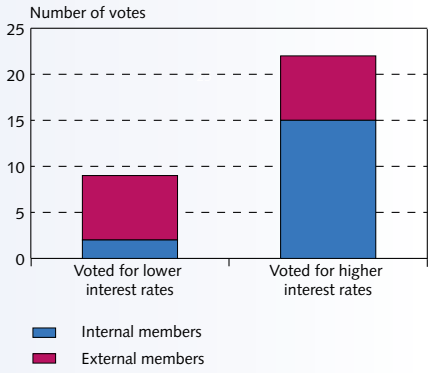
An examination of the decisions with split votes reveals that ¾ of the decisions taken in 2012 were disputed, followed by ⅔ of the decisions from 2009. Decisions with split votes were fewest in 2013, when there was only one that was not unanimous (Chart 1). In addition, analysis of the voting pattern over the entire period shows that one member dissented from the majority at nearly a third of the meetings, and in about ⅙ of instances there were two dissenting votes. It is therefore clear that individual members have held divergent points of view in the six years since the MPC's establishment, as the objective of a committee comprising several members is to present differing views, thereby increasing the likelihood that the decision will be an informed one.

Closer examination of the dissenting votes reveals that Anne Sibert, one of two external members from February 2009 through February 2012, was most often in the minority, or in 30% of instances (Chart 2), followed by Thórarinn G. Pétursson, Chief Economist of the Central Bank, in 27% of instances. An internal member has been in the minority in 12% of instances and an external member in 15% of instances. Már Gudmundsson, Governor of the Central Bank, was in the minority once and Deputy Governor Arnór Sighvatsson three times. No external member has been in the minority since November 2012, when the monetary tightening cycle came to an end. Further-

3. There were six interest rate increases during the period, including three instances where one member preferred to keep rates unchanged and another two instances where one member wanted to raise rates by more than was ultimately decided.

more, when there has been a decision with a split vote, the majority has consisted more often of internal and external members than of internal members only. In the instances when two members dissented from the majority, internal members constituted a majority in only one-fourth of cases. Therefore, there do not appear to be signs of bloc voting among internal and external members, and furthermore, the Governor's position does not seem to be excessively strong, given the frequency of dissenting votes from other internal Committee members. On the other hand, closer examination of minority votes seems to reveal some difference in the voting behaviour of internal versus external members. When internal members dissented from the majority, they chose rates higher than the Governor's proposal more often than lower rates (Chart 3). This is not true of the external members, whose dissenting votes were split equally between higher and lower rates than were chosen by the majority. Internal members therefore appear to have tended towards a tighter monetary stance than external members did.

Chart 3
Pattern of votes dissenting from the majority
2009-2014



Source: Central Bank of Iceland.

Voting pattern in Iceland similar to that in other countries

The MPC's voting pattern over the past six years appears to be well in line with those in other countries with a similar decision-making framework. In 2007, Mervyn King, then-current Governor of the Bank of England (BoE), gave a speech on the ten-year experience of the BoE's monetary policy committee. In that speech, he mentioned members' divergent opinions on monetary policy, stating that he considered those opinions to reflect differing interpretation of economic developments. Sometimes the economic situation had been extremely unclear, complicating the interpretation of data and leading to divergent views within the committee, thereby leading to a larger number of meetings without a unanimous decision. On the other hand, a situation could arise where the state of the economy and the nature of shocks to the economy is undisputed and the response to them obvious, giving rise to a period of consensus among MPC members. King also shows that minority votes are far more numerous at the BoE than in, for example, the monetary policy committees in the US, Sweden, and Japan, and the same was true of the ratio of meetings where at least a fourth of members were in the minority. A comparison of the voting pattern in Iceland with the information revealed in the speech shows that the relative frequency of instances with one dissenting vote was similar to that in Sweden in 1999-2007, and about half that in the UK over the same period. On the other hand, the percentage of instances in which at least a fourth of Icelandic members voted against the majority is similar to that in the UK and higher than in Sweden.

The results of Gerlach-Kristen's (2009) study of the voting patterns at the BoE indicate that, as in Iceland, external members have a tendency to vote for lower interest rates than internal members do, particularly during economic contractions. Unlike in Iceland, she also finds that external members were in the minority at the BoE more often than internal members were. Gerlach-Kristen considers it likely that this stems from external members' tendency to be more recession-averse than internal members. Differences in loss functions from one member to another could also explain the difference in voting patterns, and it was possible that internal members placed greater emphasis on price stability than external members did. This appears to be in line with the findings of Jung (2011), whose study of the voting patterns of several MPCs indicates that internal members at the BoE respond more aggressively than external members to the risk of elevated inflation following economic shocks.

Conclusion

The changes made to Iceland's monetary policy framework in 2009 have probably improved monetary policy conduct and enhanced its credibility. Transparency has also been greatly increased, and the procedure for decision-making seems consistent with best practice.[4] The voting patterns of the Icelandic MPC and the differences in the voting behaviour of internal versus external members during the Committee's tenure also appear to be similar to those prevailing in neighbouring countries with the same MPC structure.

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4. See, for example, Dincer and Eichengreen (2014), who compare developments in monetary policy transparency at a number of central banks, including Iceland's, in recent years. They find, for example, that Iceland has seen one of the greatest improvements in monetary policy transparency over the last few years.

Box 5

Estimating underlying inflation using a dynamic factor model

The terms core inflation and underlying inflation are often used in discussions of monetary policy formulation and conduct. The terms are based on the idea that it is possible to isolate the components of inflation that are temporary from those that are more persistent and therefore likely to be difficult to control if inflation deviates too far from the inflation target. An increase in vegetable prices due to inclement weather, for instance, has a temporary effect on inflation which is corrected when the weather improves and therefore does not call for a monetary policy response. Other price changes are more persistent and are related to expectations of inflation, which affect households' pricing of labour and firms' pricing of goods and services. Other things being equal, inflation driven by such factors would call for a monetary policy response. The aim of estimating underlying inflation is to construct measures of inflationary pressures in the economy that look past temporary factors.

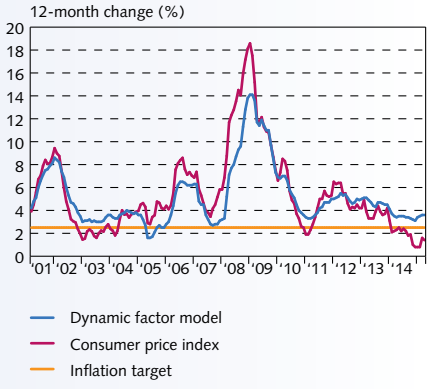
There are a number of methods available for measuring underlying inflation, but because there is no single method that clearly outperforms the others, central banks generally employ several of them. Two types of methods have been used to create the measures published in Iceland: exclusionary and statistical measures. Exclusionary measures attempt to exclude short-lived effects by omitting various components of the CPI. Usually, the most volatile components are excluded, or those that are considered to reflect supply shocks – such as oil prices or changes in indirect taxes, or prices set by the government. Statistical measures also exclude volatile CPI components but usually omit only the most volatile components in any given month. These can change from one period of time to another; therefore, the omitted components are not always the same ones, as they are with exclusionary measures.

At the request of the Central Bank, Statistics Iceland has for several years published four different measures of underlying inflation based on the exclusion method: core index 1, which excludes agricultural products and petrol; core index 2, which excludes public services as well; core index 3, which adds real mortgage interest expense to the list of exclusions; and core index 4, which also excludes the market value of housing.[1] In addition, the Bank calculates various statistical measures of underlying inflation: several trimmed mean measures, which exclude 5-25% of the components that change the most in price on a month-to-month basis, and a weighted median measure based on the price change of individual CPI components.

In a recent research paper, a new measure of underlying inflation for Iceland based on the so-called dynamic factor model is introduced.[2] In this factor model, 230 components of the CPI are used to find a single factor common to all of the components, which should reflect overall inflation developments. The results are shown in Chart 1. As can be seen, the measure tracks observed inflation relatively closely. The fluctuations are less pronounced, however, and the disinflation in 2014 is not as strong as it is in terms of observed inflation. This suggests that a portion of the moderation in observed inflation is due to temporary factors that will probably reverse. As Chart 2 shows, core index 3 also suggests this, although it, along with other measures, indicates a more rapid decline in underlying inflation than is obtained with the dynamic factor model.

In the paper, this new measure is compared with existing meas-

Chart 1
Underlying inflation according to the dynamic factor model
March 2001 - April 2015



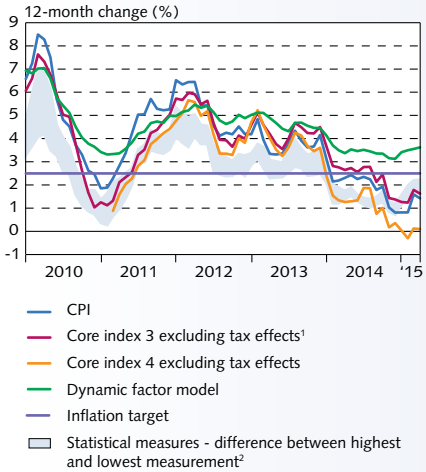
Sources: Statistics Iceland, Central Bank of Iceland.

1. An analysis of core indices 1 and 2 can be found in Thórarinn G. Pétursson (2002). "Evaluation of core inflation and its application in the formulation of monetary policy." *Monetary Bulletin* 2002/4.
2. Bjarni G. Einarsson (2014). "A Dynamic Factor Model for Icelandic Core Inflation". Central Bank of Iceland, *Working Paper*, no. 67.

Chart 2

Various measures of underlying inflation

January 2010 - April 2015



1. Core index 3 is the CPI excluding prices of agricultural products, petrol, public services, and the cost of real mortgage interest. Core index 4 excludes the market price of housing as well. 2. Underlying inflation is measured as the weighted median and as the trimmed mean, excluding 5%, 10%, 15%, 20%, and 25% of components with the largest price changes.

Sources: Statistics Iceland, Central Bank of Iceland.

ures of underlying inflation in Iceland, based on four characteristics. First, the measure should have a long-term average comparable to that for observed inflation, as it should reflect the same long-term trends as observed inflation. Second, it should have a lower standard deviation, as underlying inflation should measure the underlying trend in inflation, which should be less volatile. Third, it should be an unbiased predictor of future inflation. Finally, a measure of underlying inflation should be accessible without a significant lag, and new data should not lead to large revisions of existing estimates.

This comparison indicates that the dynamic factor model for underlying inflation is better than other measures over the period from March 1997 (which is as far back as core indices 1 and 2 extend) in that it has the same sample average as CPI inflation, as the core indices do, but the standard deviation is lower. For shorter sample periods corresponding to the first measurements with other measures of underlying inflation, the dynamic factor model matches average inflation less closely but is generally the measure with the smallest standard deviation, while the core indices have a comparable or even larger standard deviation than observed inflation. The trimmed mean and weighted median measures have a smaller standard deviation than observed inflation but match the mean of CPI inflation poorly. On the other hand, those measures have the greatest correlation with the output gap, which is often considered to have forecasting value for future developments in inflation, as it is a measure of domestic demand-side pressures.

The results also indicate that, of all measures, only the dynamic factor model and core index 1 are unbiased predictors of observed inflation. In addition, these two measures appear not to be affected by developments in observed inflation; therefore, they are weakly exogenous with respect to observed inflation. One of the drawbacks of the dynamic factor model, however, is that the estimation of underlying inflation for a specific period is subject to change when new data are added. That said, the results of the study indicate that the estimation of underlying inflation in Iceland is robust to the inclusion of new data.

Therefore, in Iceland, as elsewhere, no single measure of underlying inflation excels in all respects. The results of the study indicate, however, that the dynamic factor measure should be a valuable addition to the measures currently used by the Central Bank.

Appendix 1

Forecast tables

Table 1 GDP and its main components[1]

	2013	2014	2015	2016	2017
Private consumption	0.5 (0.8)	3.7 (3.6)	3.9 (3.7)	3.0 (3.0)	2.8 (2.8)
Public consumption	0.7 (0.8)	1.8 (0.9)	1.4 (1.4)	1.2 (1.1)	1.0 (1.2)
Gross capital formation	-1.0 (-2.2)	13.7 (13.7)	22.6 (13.7)	10.9 (15.8)	5.1 (4.2)
Business investment	-6.7 (-8.6)	15.1 (13.3)	29.7 (14.6)	12.2 (17.3)	1.3 (0.8)
Residential investment	10.8 (10.8)	14.9 (21.7)	18.6 (22.3)	11.5 (20.3)	23.0 (15.8)
Public investment	12.5 (12.5)	7.5 (7.8)	3.4 (2.9)	3.5 (3.5)	1.8 (1.8)
Domestic demand	-0.2 (-0.3)	5.3 (4.4)	6.6 (4.9)	4.1 (5.0)	2.9 (2.7)
Exports of goods and services	6.9 (6.9)	3.1 (4.3)	6.9 (5.3)	4.2 (2.8)	3.2 (2.7)
Imports of goods and services	0.3 (0.4)	9.9 (9.4)	11.1 (6.8)	5.7 (7.0)	2.7 (2.7)
Gross domestic product (GDP)	3.6 (3.5)	1.9 (2.0)	4.6 (4.2)	3.4 (2.8)	3.1 (2.7)
GDP at current price levels (ISK trillions)	1.9 (1.9)	2.0 (2.0)	2.2 (2.2)	2.3 (2.3)	2.5 (2.4)
Growth rate of nominal GDP	5.7 (5.6)	6.0 (5.1)	9.9 (9.7)	7.0 (5.5)	6.5 (5.3)
Total investment (% of GDP)	15.4 (15.1)	16.6 (16.4)	18.7 (17.2)	19.8 (19.3)	20.1 (19.5)
Business investment (% of GDP)	10.0 (9.6)	10.9 (10.3)	12.7 (10.8)	13.5 (12.3)	13.2 (12.0)
Underlying gross national saving (% of GDP)[2]	22.5 (21.9)	21.7 (19.8)	21.0 (20.1)	21.2 (20.6)	22.1 (20.9)
Contribution of net trade to GDP growth (percentage points)	3.7 (3.7)	-3.0 (-2.1)	-1.6 (-0.3)	-0.4 (-1.7)	0.4 (0.2)

1. Year-on-year change (%) unless otherwise specified (figures in parentheses are from the forecast in *Monetary Bulletin* 2015/1). 2. The sum of investment, changes in inventories, and the underlying current account balance.

Sources: Statistics Iceland, Central Bank of Iceland.

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

	2013	2014	2015	2016	2017
Marine production for export	8.0 (8.0)	-12.8 (-11.0)	6.8 (5.0)	3.0 (2.0)	2.0 (2.5)
Aluminium production for export	3.0 (3.0)	1.8 (1.7)	4.0 (3.7)	2.0 (2.0)	2.0 (2.0)
Foreign currency prices of marine products	-4.9 (-4.9)	7.2 (5.4)	6.0 (3.0)	2.0 (1.0)	2.0 (2.1)
Aluminium prices in USD[2]	-4.8 (-4.8)	2.0 (0.3)	-1.6 (4.6)	3.9 (5.1)	3.6 (0.9)
Fuel prices in USD[3]	-0.9 (-0.9)	-7.5 (-7.5)	-41.5 (-39.5)	14.3 (16.3)	5.6 (9.3)
Terms of trade for goods and services	-1.9 (-1.9)	3.4 (2.4)	4.0 (4.9)	0.5 (-0.4)	0.1 (-0.2)
Inflation in main trading partners[4]	1.6 (1.6)	1.1 (1.1)	0.6 (0.8)	1.6 (1.7)	1.8 (1.9)
GDP growth in main trading partners[4]	0.7 (0.7)	1.7 (1.7)	1.9 (1.9)	2.2 (2.2)	2.2 (2.2)
Main trading partners' imports[4]	1.9 (1.9)	2.3 (2.2)	2.9 (2.9)	3.4 (3.4)	3.0 (3.0)
Short-term interest rates in main trading partners (%)[5]	0.5 (0.5)	0.5 (0.5)	0.5 (0.5)	0.8 (0.8)	1.4 (2.4)

1. Year-on-year change (%) unless otherwise specified (figures in parentheses are from the forecast in *Monetary Bulletin* 2015/1). 2. Forecast based on aluminium futures and analysts' forecasts. 3. Forecast based on fuel futures and analysts' forecasts. 4. Forecast from Consensus Forecasts and Global Insight. 5. OECD forecast for three-month money market rates in Iceland's main trading partner countries.

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

Table 3 Current account balance and its subcomponents[1]

	2013	2014	2015	2016	2017
Trade balance[1]	8.2 (8.3)	6.4 (7.0)	6.5 (8.6)	6.1 (6.5)	6.3 (6.4)
Headline balance on primary income[2]	-2.4 (-2.8)	-2.8 (-4.0)	-4.2 (-4.4)	-4.3 (-4.0)	-4.0 (-3.9)
Underlying balance on primary income[3]	-0.2 (-0.6)	-0.9 (-2.1)	-3.8 (-4.4)	-4.3 (-4.0)	-4.0 (-3.9)
Headline current account balance[2]	5.8 (5.5)	3.6 (3.0)	2.3 (4.2)	1.8 (2.5)	2.3 (2.5)
Underlying current account balance[3]	7.3 (7.2)	5.0 (4.4)	2.3 (3.8)	1.4 (2.1)	1.9 (2.1)

1. % of GDP (figures in parentheses are from the forecast in *Monetary Bulletin* 2015/1). 2. Calculated according to IMF standards. The sum of primary and secondary income. 3. Adjusted for the calculated revenues and expenses of the DMBs in winding-up proceedings. The services account balance is also adjusted for the failed DMBs' financial intermediation services indirectly measured (FISIM). During the forecast horizon, the estimated effects of the settlement of the failed banks' estates are included.

Sources: Statistics Iceland, Central Bank of Iceland.

Table 4 Public sector finances[1]

	2013	2014	2015	2016	2017
Overall Treasury balance	-1.8 (-1.8)	0.0 (2.0)	0.1 (-0.4)	0.3 (0.4)	1.2 (1.0)
Primary Treasury balance	2.0 (3.0)	3.2 (3.1)	3.2 (2.8)	3.0 (3.4)	3.7 (3.7)
Overall public sector balance	-1.7 (-1.7)	-0.2 (1.9)	-0.1 (-0.2)	0.0 (0.6)	1.1 (1.5)
Primary public sector balance	2.1 (3.1)	3.1 (3.0)	3.1 (2.9)	2.8 (3.9)	3.7 (4.4)
Total public sector debt	86 (86)	82 (83)	74 (81)	69 (73)	64 (70)
Net public sector debt[2]	63 (63)	59 (65)	53 (59)	49 (53)	45 (53)

1. % of GDP on an accrual basis (figures in parentheses are from the forecast in *Monetary Bulletin* 2014/4). 2. 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]

	2013	2014	2015	2016	2017
Unemployment (% of labour force)	5.4 (5.4)	5.0 (5.0)	3.5 (4.0)	3.6 (3.9)	3.9 (4.0)
Employment rate (% of population aged 16-74)	77.0 (77.0)	77.4 (77.4)	78.7 (77.9)	78.9 (78.0)	78.9 (77.8)
Total hours worked	3.7 (3.7)	1.9 (1.9)	3.6 (2.9)	2.5 (2.3)	2.2 (1.8)
Labour productivity[2]	-0.1 (-0.2)	0.0 (0.1)	1.0 (1.3)	0.9 (0.6)	0.9 (0.9)
Unit labour costs[3]	2.8 (3.6)	5.9 (5.7)	6.1 (5.0)	4.1 (4.0)	2.4 (2.4)
Real disposable income	0.5 (0.7)	6.2 (4.6)	4.2 (6.1)	4.2 (3.7)	3.5 (2.2)
Output gap (% of potential output)	-0.3 (-0.6)	-0.1 (0.0)	1.1 (0.9)	1.1 (0.6)	0.8 (0.4)

1. Year-on-year change (%) unless otherwise specified (figures in parentheses are from the forecast in *Monetary Bulletin* 2015/1). 2. Output per total hours worked. 3. Wage costs over productivity.

Sources: Directorate of Labour, Statistics Iceland, Central Bank of Iceland.

Table 6 Exchange rate and inflation[1]

	2013	2014	2015	2016	2017
Trade-weighted exchange rate index[2]	218.9 (218.9)	206.9 (206.9)	206.6 (207.6)	206.6 (207.6)	206.6 (207.6)
Inflation (consumer price index, CPI)	3.9 (3.9)	2.0 (2.0)	1.9 (0.7)	3.0 (2.3)	3.2 (2.5)
Inflation (CPI excluding effects of indirect taxes)	3.7 (3.7)	2.0 (2.0)	1.4 (0.4)	3.0 (2.3)	3.2 (2.5)

1. Year-on-year change (%) unless otherwise specified (figures in parentheses are from the forecast in *Monetary Bulletin* 2015/1). 2. Narrow trade basket.

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	
2014:2	2.3 (2.3)	2.3 (2.3)	3.5 (3.5)
2014:3	2.1 (2.1)	2.1 (2.1)	0.9 (0.9)
2014:4	1.3 (1.3)	1.2 (1.2)	-0.4 (-0.4)
2015:1	1.1 (0.5)	0.7 (0.1)	0.4 (-2.0)
		Forecasted value	
2015:2	1.7 (0.6)	1.3 (0.2)	5.9 (3.9)
2015:3	1.9 (0.6)	1.5 (0.2)	1.9 (0.8)
2015:4	2.7 (1.4)	2.3 (1.0)	2.8 (2.9)
2016:1	2.7 (1.9)	2.7 (1.9)	0.3 (-0.2)
2016:2	2.9 (2.3)	2.9 (2.3)	6.8 (5.9)
2016:3	3.2 (2.3)	3.2 (2.3)	3.1 (0.5)
2016:4	3.3 (2.7)	3.3 (2.7)	3.1 (4.7)
2017:1	3.4 (2.6)	3.4 (2.6)	0.5 (-0.7)
2017:2	3.3 (2.4)	3.3 (2.4)	6.5 (5.3)
2017:3	3.2 (2.6)	3.2 (2.6)	2.5 (1.2)
2017:4	3.0 (2.5)	3.0 (2.5)	2.6 (4.3)
2018:1	2.8 (2.6)	2.8 (2.6)	-0.3 (-0.3)
2018:2	2.7	2.7	5.8

1. Figures in parentheses are from the forecast in *Monetary Bulletin* 2015/1.

Sources: Statistics Iceland, Central Bank of Iceland.