

Clearer signs of growing tension in the economy, but inflation remains below target

Global output growth measured 3.1% in 2015, the lowest post-crisis growth rate since 2009. Furthermore, the global GDP growth outlook has continued to deteriorate, and financial markets have been volatile. At the same time, Iceland's terms of trade have improved markedly – more than in other developed countries, and particularly in comparison with other commodity exporters. Exports have grown strongly, outpacing demand growth in major trading partner countries, owing to the surge in services exports.

Domestic demand grew by over 6% in 2015, and the outlook is for similar growth this year. Growth is driven by the improvement in terms of trade, large pay increases in the recent wage settlements, fiscal easing, and the effects of the Government's debt relief measures. It is offset by monetary tightening, which has contained demand growth with higher real interest rates. The achievements of monetary policy over the past few years may also have provided inflation expectations with a stronger anchor and thus ensured that inflation has not risen as much as expected following the large wage increases in the recent wage settlements.

GDP growth is estimated at 4% in 2015, in line with the projection in the February *Monetary Bulletin*. It is expected to strengthen still further this year, measuring 4.5%, slightly more than was forecast in February. The outlook for 2017 has also been revised upwards, with GDP growth now projected at 4% instead of the 3.4% forecast in February. If the forecast materialises, 2017 will be the third year in a row with GDP growth at or above 4%. As in February, growth is assumed to ease somewhat in 2018, measuring about 3%. It will therefore be above its long-term average throughout the forecast horizon.

The domestic labour market is strong as well, as can be seen in increased job creation and a surge in the labour participation rate, which is now back to the pre-crisis peak. Unemployment has also declined markedly, and firms are having increasing difficulty filling available positions.

In spite of ever-clearer signs of increased tension in the domestic economy, inflation has remained below target for over two years. This is due primarily to deflation on imported goods and services, which has offset domestic inflationary pressures. Inflation is likely to rise when the effects of these imported factors taper off. How quickly it does so will depend on the timing and scope of the turnaround in imported inflation. According to the forecast, inflation will measure about 3% at the end of 2016 and then rise even further, to around 4½% in H2/2017, before easing back towards the target in response to monetary tightening. This is somewhat higher inflation than was forecast in February, as the outlook is now for stronger growth in economic activity than was assumed then.

I Economic outlook and key uncertainties

Central Bank baseline forecast¹

Global output growth outlook continues to deteriorate

The global economic recovery began to weaken in the latter half of 2015, and global output growth forecasts have once again been revised downwards. In its most recent forecast, the International Monetary Fund (IMF) projects global output growth at 3.2% this year, about the same as in 2015 and the slowest growth rate since 2009. The outlook for 2016 and 2017 has worsened since the last forecast, for both developed and emerging countries. If the forecast materialises, global GDP growth will pick up slightly in coming years but remain somewhat below its long-term average.

GDP growth among Iceland's main trading partners measured 1.8% in 2015, about the same as 2014. It is expected to ease this year, measuring 1.6% instead of the 1.9% provided for in the Bank's February forecast (Chart I-1). The weaker outlook for the US and the eurozone is a major factor in this development. Trading partners' GDP growth is expected to pick up in the next two years, however, and measure about 2%. The GDP growth outlook for the forecast horizon as a whole has therefore deteriorated since February, and uncertainty about the global economy has increased again. The legacy of the financial crisis therefore appears likely to be a greater drag on the global economic recovery than previously assumed, and the plunge in oil and commodity prices poses difficulties for many emerging countries. Further discussion of the global economy can be found in Chapter II, and uncertainties in the global outlook are discussed later in this chapter.

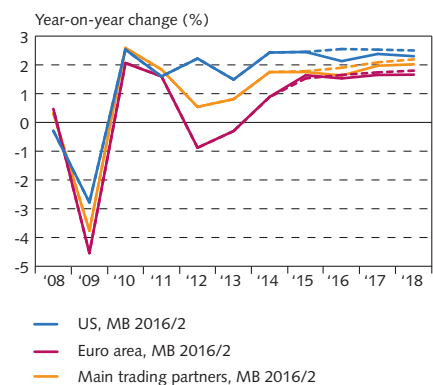
Terms of trade have improved markedly and the real exchange rate has risen

Terms of trade improved by nearly 7% in 2015 and have improved by over 10% in the past two years, more than in other developed countries (see Box 1). The improvement is due to a steep drop in import prices and a significant rise in export prices relative to those in trading partner countries (Chart I-2). As in February, it is assumed that terms of trade will improve still further this year but then deteriorate marginally in the following two years, as oil prices begin to rise and marine product prices start to taper off after the strong increase in recent years.

The real exchange rate has risen significantly, in tandem with improvements in terms of trade (Chart I-3). In the past two years, it has risen by over 10% in terms of relative consumer prices and almost twice that amount in terms of relative unit labour costs. The increase is smaller than was forecast in February, however, because the rise in domestic labour costs in 2015 has been revised downwards (see Box 2). The nominal exchange rate of the króna is slightly higher than was assumed in the February forecast and, as in previous Central Bank forecasts, is assumed to remain broadly unchanged throughout the forecast horizon. The real exchange rate has continued to rise, howev-

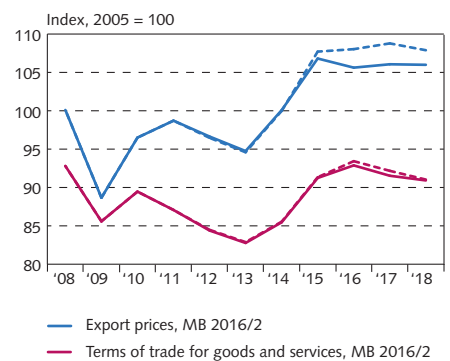
1. The analysis presented in this *Monetary Bulletin* is based on data available in mid-May.

Chart I-1
Global output growth 2008-2018¹



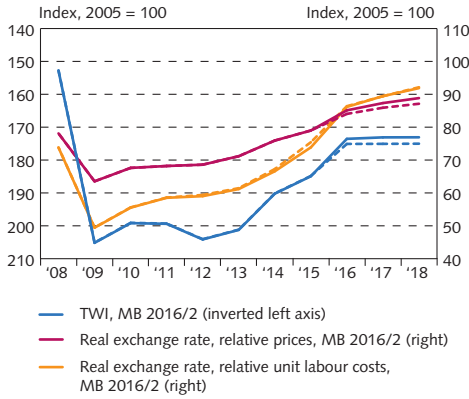
1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1.
Sources: Macrobond, OECD, Central Bank of Iceland.

Chart I-2
Export prices and terms of trade 2008-2018¹



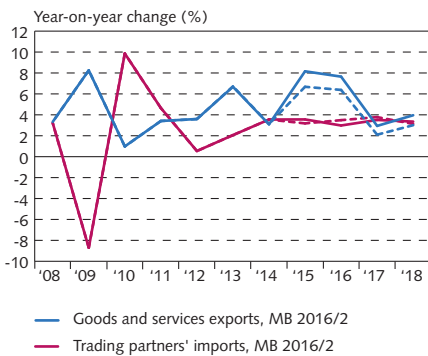
1. Price of Icelandic exports relative to trading partners' export prices (converted to the same currency using the trade-weighted exchange rate index). Central Bank baseline forecast 2016-2018. The broken lines show the forecast from MB 2016/1.
Sources: Macrobond, Statistics Iceland, Central Bank of Iceland.

Chart I-3
Exchange rate 2008-2018¹



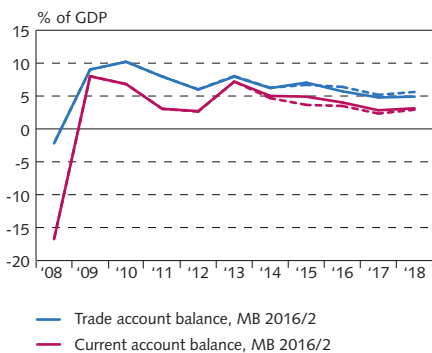
1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1.
Source: Central Bank of Iceland.

Chart I-4
Exports and global demand 2008-2018¹



1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1.
Sources: Macrobond, Statistics Iceland, Central Bank of Iceland.

Chart I-5
Current account balance 2008-2018¹



1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1. Current account balance based on estimated underlying balance 2008-2015.
Sources: Statistics Iceland, Central Bank of Iceland.

er, as domestic costs have risen more rapidly than foreign costs. If the forecast materialises, by 2018 the real exchange rate will be above its thirty-year average by about 6% in terms of relative consumer prices and 7% in terms of relative unit labour costs. As is discussed in Box 3, the recent rise in the real exchange rate probably reflects to a large extent an adjustment to a higher equilibrium real exchange rate. Further discussion of the real exchange rate and terms of trade can be found in Chapter II.

Surge in tourism the mainstay of export growth

Goods and services exports grew by over 8% in 2015, somewhat more than was assumed in the February forecast. The deviation is due primarily to stronger-than-expected exports of aluminium and services (Chart I-4). In spite of the rise in the real exchange rate and forecasts of weaker global GDP growth, the outlook is also for stronger export growth this year, or nearly 7½% instead of the 6½% in the February forecast. The improved outlook is due primarily to even stronger growth in services exports; furthermore, information from exporters indicates that miscellaneous manufacturing exports will grow more than was envisioned in February. If the forecast materialises, 2016 will be the second year in a row with service export growth in excess of 12% year-on-year. Over the past four years it has averaged more than 10% per year. As in February, it is assumed that export growth will ease slightly in the next two years, partly because of the aforementioned rise in the real exchange rate.

As in the Bank's previous forecasts, it is assumed that the surplus on external goods and services trade will continue to decline from its 2010 peak. In 2015, it measured 7% of GDP, which is well in line with the February forecast, but by 2018 it is projected to have narrowed to 5% (Chart I-5). With the settlement of the failed banks' estates, there is no longer any need to distinguish between the headline and underlying current account numbers. The current account surplus is projected to narrow in line with the declining trade surplus and fall from about 5% of GDP in 2016 to 3% of GDP in 2018. The settlement of the estates also entails that Iceland's net international investment position (NIIP) as measured according to international standards has improved significantly. At the end of 2015, it was negative by 14½% of GDP, the most favourable position Iceland has seen in about half a century (see Box 4). Further discussion of the external balance can be found in Chapter IV.

6% growth in domestic demand in 2015 and outlook for similar growth in 2016

Private consumption grew by nearly 5% in 2015, and indicators imply that it grew more than 7% in the first quarter of this year. This need not come as a surprise, as real disposable income has risen significantly, supported by strong wage increases and rapid job creation at a time of modest inflation. Furthermore, net household wealth has grown considerably as asset prices have risen and debt levels have fallen. The outlook is for private consumption to grow by 6% this year, somewhat more than was forecast in February, as real income increased more

rapidly in 2015 than previously expected (Chart I-6). The effects of improved economic conditions will also be felt next year, as private consumption is projected to grow by 5% instead of the 4.2% provided for in the February forecast. Although private consumption has grown strongly this year, it is still outpaced by growth in real disposable income; therefore, household saving has increased for the third year in a row. According to the forecast, households will tap their savings to a small degree over the next two years.

Investment also grew strongly in 2015. Business investment grew almost 30% year-on-year and total investment by 19%. According to the forecast, the outlook is for a sizeable increase this year as well. Indications from the recent Central Bank survey suggest that investment will remain strong in most sectors and that investment in hotel construction and ships and aircraft will increase. Business investment is projected to grow by nearly a fifth year-on-year in 2016, and total investment by about 14%. Therefore, in comparison with the February forecast, the outlook is for somewhat stronger business investment and broadly unchanged total investment. If the forecast materialises, investment will grow rapidly in 2016, for the third year in a row. The ratio of investment to GDP will therefore rise from just over 19% last year to 20% this year. According to the forecast, it will then taper off towards the end of the forecast horizon but will be higher than previously projected (Chart I-7).

Domestic demand grew by 6.3% in 2015 and is expected to maintain that pace this year (Chart I-6). As in the Bank's previous forecasts, the rate of growth is projected to ease in the next two years but to remain relatively strong. If the forecast is borne out, domestic demand growth will average 4.4% over the forecast horizon, well above the thirty-year average of 2.7%. Further discussion of private and public sector demand can be found in Chapter IV.

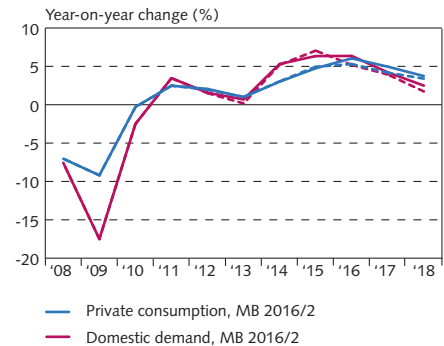
GDP growth projected at 4% or more this year and in 2017

According to preliminary figures from Statistics Iceland, year-2015 GDP growth measured 4%, well in line with the 4.1% provided for in the February forecast. Previous years' GDP growth figures were also revised upwards, and Statistics Iceland now estimates GDP growth in 2013 and 2014 at 4.4% and 2%, respectively, instead of 3.9% and 1.8%. According to these figures, seasonally adjusted GDP in Q4/2015 was more than 16% above the Q1/2010 trough and more than 3% above the pre-crisis peak.

GDP growth appears set to gain further momentum, rising to 4.5% this year. It is driven by strong growth in domestic demand and exports, although the contribution of net trade to output growth is negative for the third year in a row, with indicators implying strong import growth, partly due to sizeable imports of ships and aircraft. This is 0.3 percentage points more output growth than was forecast in February, reflecting the outlook for stronger growth in domestic demand than was projected at that time.

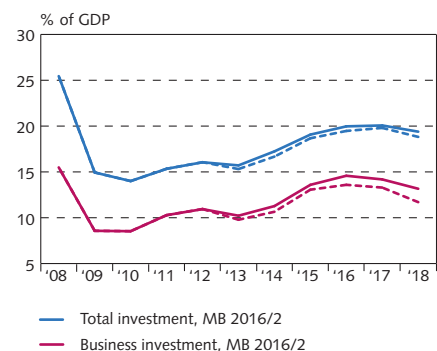
The GDP growth outlook for 2017 has also changed somewhat. Growth is now projected to measure 4% and, as before, to be driven by strong growth in domestic demand, particularly private consump-

Chart I-6
Private consumption and domestic demand
2008-2018¹



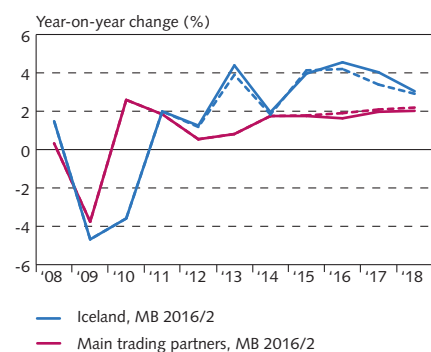
1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-7
Investment 2008-2018¹



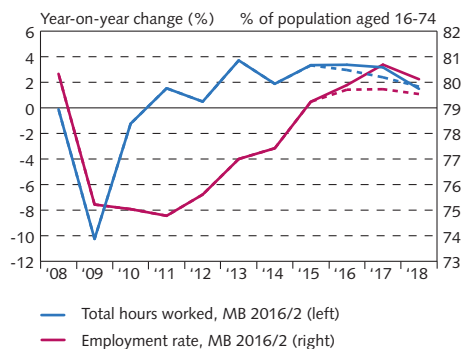
1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-8
GDP growth in Iceland and trading partners
2008-2018¹



1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1.
Sources: Macrobond, Statistics Iceland, Central Bank of Iceland.

Chart I-9
Total hours worked and employment rate
2008-2018¹



1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1.
Sources: Statistics Iceland, Central Bank of Iceland.

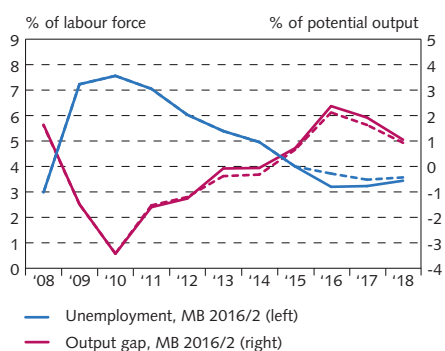
tion. This is 0.6 percentage points more than was forecast in February, owing mainly to the outlook for increased domestic demand growth and a more positive contribution from net trade. If these projections materialise, 2017 will be the third consecutive year with GDP growth of 4% or more. This is significantly above of long-term trend growth and, other things being equal, it is inevitable that the rate of growth will slow down somewhat in coming years. According to the forecast, it will ease in 2018 but remain slightly above trend growth, which is estimated at 2.7%. Further discussion of developments in GDP growth can be found in Chapter IV.

Strong job creation and a rapidly rising participation rate

Total hours worked rose by 2.3% year-on-year in Q1/2016, compared with the February forecast of 2.1%. The employment rate rose by 1½ percentage point and the participation rate by almost 1 percentage point. The participation rate measured just under 83% after adjusting for seasonality and is close to its early-2007 peak. The rising labour participation rate partially offsets the impact of the increasing number of jobs on the unemployment rate. As was forecast in February, the year-on-year decline in the unemployment rate is 1 percentage point and seasonally adjusted now measures 3.1%, down from 3.5% in Q4/2015. The unemployment rate is now below the level that is estimated to be consistent with price stability. Other labour market indicators point in the same direction.

As in February, it is assumed that total hours worked will increase by 3% this year. A greater increase is expected next year, reflecting a stronger output growth outlook (Chart I-9). The employment rate is expected to continue to rise, peaking next year at nearly 81%, close to the 2007 peak of 81.5%. The revision of the February forecast of the increase in total hours worked is in line with the changed GDP growth outlook. The outlook for productivity growth is therefore broadly unchanged, at an average of 1% per year over the forecast horizon. This is somewhat below the historical average but in line with the ten-year average (see Chart I-11 below). Further discussion of the labour market can be found in Chapter IV.

Chart I-10
Unemployment and output gap 2008-2018¹



1. Central Bank baseline forecast 2016-2018. Broken lines show forecast from MB 2016/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Outlook for lower unemployment and a wider output gap than was forecast in February

According to the forecast, unemployment will continue to fall, averaging 3.3% this year. This is about ½ a percentage point less than was forecast in February, reflecting stronger economic activity than was assumed then. For the same reason, the output gap is expected to be somewhat larger this year than was projected in February. It is expected to rise to a maximum of 2½% of potential output this year, or about ½ a percentage point more than in the February forecast. According to the current forecast, it will begin to narrow again in 2017, and the unemployment rate will rise at the same time to a level consistent with low and stable inflation (Chart I-10). As always, estimating the output gap is highly uncertain. Several uncertainties in the forecast are discussed below, and further discussion of factor utilisation can be found in Chapter IV.

Inflation outlook for H2/2017 has deteriorated in line with growing economic activity

Inflation measured 1.6% in April, down from 2.1% at the beginning of the year and up slightly since April 2015. It has therefore been below the target for more than two years, owing primarily to strong imported deflation and a stronger króna (see Box 5). In terms of the CPI excluding the housing component, inflation measured only 0.2% in April, an increase of 0.3 percentage points since April 2015. Long-term inflation expectations have been broadly unchanged in the past year. The inflation target seems to provide a firmer anchor for inflation expectations than before, which could to some extent explain why inflation has not risen as much as expected, given that a positive output gap has emerged and wages have risen sharply.

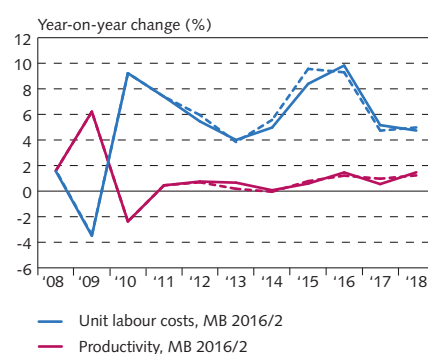
Inflation averaged 1.9% in the first quarter of 2016, in line with the February forecast. As is discussed in Box 5, import price deflation has offset domestic inflationary pressures, which can be seen in an increased output gap and large pay increases. Consequently, there is the risk that inflation will rise when these effects dissipate. As in the Bank's February forecast, inflation is projected to rise as the year progresses, reaching 3% in Q4/2016. On the other hand, the outlook is for higher inflation in H2/2017 and early 2018 than was forecast in February, mainly because economic activity is now expected to grow faster and the output gap to be larger, as is discussed above. On the other hand, the marked improvement in terms of trade in recent years is considered to increase companies' scope to absorb the cost increases stemming from pay rises (see Box 1). As before, the pay rises are the main cause of growing inflationary pressures, both directly – through firms' cost increases – and indirectly – through growing demand and a widening output gap. Unit labour costs are estimated to have grown somewhat less than previously thought in 2015; however, they are expected to rise by over 10% this year and by an average of 6½% over the forecast horizon, which is far more than is consistent with medium-term price stability (Chart I-11).

According to the forecast, inflation is expected to peak at 4½% in the latter half of 2017 (Chart I-12). It is assumed that a tighter monetary stance will ensure that it gradually subsides as the forecast horizon progresses, to below 3% by mid-2019. As before, the outlook is subject to a number of uncertainties, which are discussed below. Further discussion of global price level developments can be found in Chapter II, and developments in domestic inflation and inflation expectations are discussed in Chapter V.

Key uncertainties

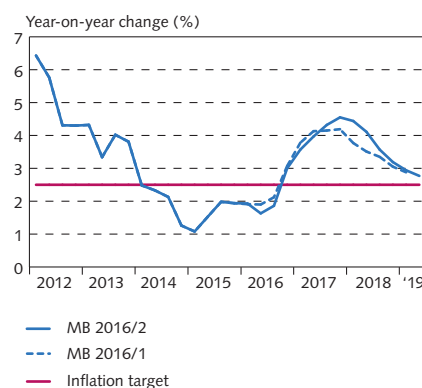
The baseline forecast reflects the assessment of the most likely economic developments during the forecast horizon. It is based on forecasts and assumptions concerning developments in the external environment of the Icelandic economy, as well as assessments of the effectiveness of markets and the transmission of monetary policy to the real economy. All of these factors are subject to uncertainty. The following is a discussion of several important uncertainties in the forecast.

Chart I-11
Unit labour costs and productivity 2008-2018¹



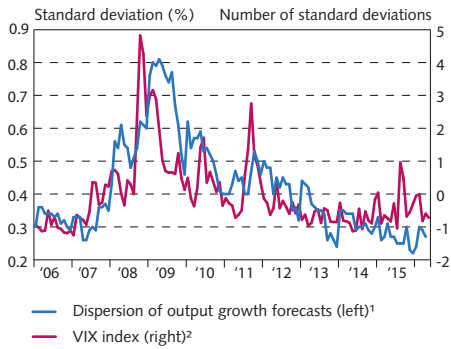
1. Productivity measured as the ratio of GDP to total hours worked. Central Bank baseline forecast 2015-2018. Broken lines show forecast from MB 2016/1.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-12
Inflation¹
Q1/2012 - Q2/2019



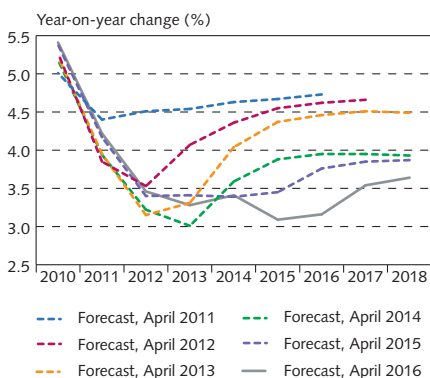
1. Central Bank baseline forecast Q2/2016-Q2/2019.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-13
Dispersion of output growth forecasts
and implied stock price volatility
January 2006 - May 2016



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). Deviation from January 2000-April 2016 average measured in standard deviations.
Sources: Consensus Forecasts, Macrobond.

Chart I-14
IMF global output growth forecast¹



1. IMF April forecasts (*World Economic Outlook*, April 2011-2016).
Source: International Monetary Fund.

The global outlook could prove overly optimistic

Volatility in the global financial markets increased somewhat at the beginning of the year, and risk premia rose across the board. There seemed to be increased uncertainty about the economic outlook in emerging countries, particularly those that rely on oil and commodity exports, and the possible spillovers to GDP growth in developed economies. This development appears to have reversed to some extent, at least in terms of the measures of financial market uncertainty (Chart I-13), although there is still some pessimism about the global GDP growth outlook, which has repeatedly been revised downwards (Chart I-14). Persistently low commodity and oil prices are considered likely to have adverse effects on a number of emerging economies, owing to tighter financial conditions in those countries and, in major industrialised countries, a lack of the economic policy tools needed to support the economic recovery and cushion against possible shocks in the near future. China's adjustment to a sustainable growth path still represents a further challenge for the global economy. Furthermore, there is still considerable geopolitical uncertainty, in addition to the effects of possible terrorist attacks in the West, a widespread decline in support for free global trade, and adverse effects of the UK's possible exit from the European Union.

In all of this international turmoil, exports from Iceland have been strong, and the export outlook has repeatedly been revised upwards – not least due to the surge in services exports. As is discussed in Box 1, terms of trade have improved more in Iceland than in other OECD countries, a development quite at odds with the experience of other commodity exporters. As a result, it is not impossible that the weak global outlook and tepid demand among trading partners will ultimately cut into export growth or undermine export prices. The outlook for exports and terms of trade as presented in the baseline forecast could therefore be too optimistic and the domestic GDP growth outlook overestimated as well.

Exchange rate developments uncertain

The baseline forecast assumes that the exchange rate of the króna will remain stable throughout the forecast horizon, but as before, it could develop very differently. It can be assumed that the risk of a severe depreciation in connection with the liberalisation of the capital controls has been reduced, although the possibility cannot be excluded that the króna will give way if residents decide to change the foreign-domestic composition of their asset portfolios. The króna could also weaken if terms of trade deteriorate again or if uncertainty in the global markets escalates still further.

To the extent that the recent rise in the real exchange rate is in excess of what can be explained by economic fundamentals, the króna could depreciate during the forecast horizon. On the other hand, the rise in the exchange rate could in large part reflect the strong domestic economic recovery and the rise in the equilibrium exchange rate (see Box 3). It could indicate that the exchange rate will remain stable or even rise still further if developments in the domestic economy continue to be more favourable than those in trading partner countries.

Capital inflows following capital account liberalisation and improvements in Iceland's sovereign credit ratings could also contribute to further appreciation of the króna.

Variations in the effectiveness of the interest rate channel of monetary policy

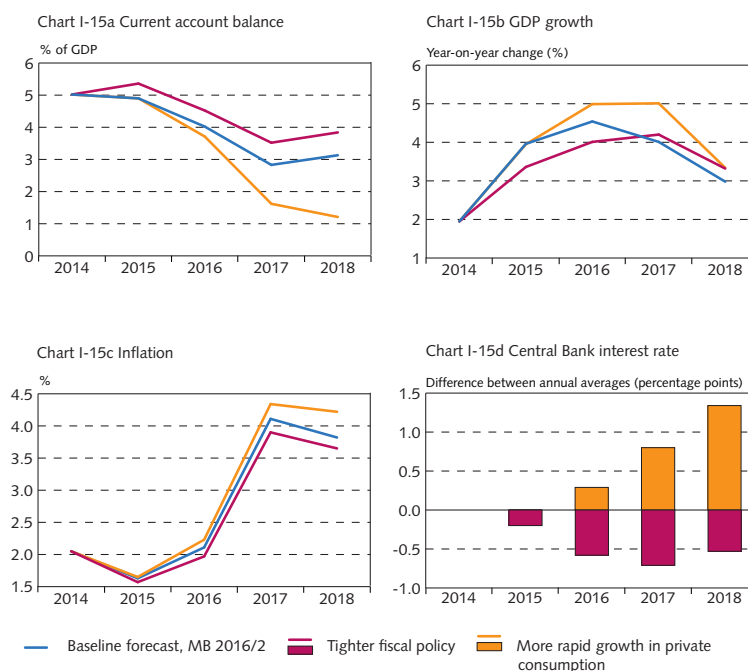
Last autumn, it appeared that flaws had developed in the transmission of monetary policy along the interest rate channel, when long-term interest rates fell steeply at the same time that the Central Bank raised short-term rates and the slope of the short- and long-term yield curve turned negative for a while. As is discussed in Box 1 of *Monetary Bulletin* 2015/4, this was due to increased capital inflows into the bond market. This development has reversed to an extent, although the yield curve is still virtually flat, and as yet, it has not spread to private sector borrowing terms to any marked degree (see Chapter III). On the other hand, it is not impossible that it will be more difficult for monetary policy to achieve the intended stance through interest rates, especially if it continues to be necessary to tighten monetary policy as has been stated. The monetary policy transmission mechanism would then shift increasingly from domestic interest rates to the exchange rate of the króna, which is to some degree unfortunate, as the exchange rate channel can be volatile, with the associated adverse effects on the tradable sector and even on financial stability, if the financial system is not even better protected.

Monetary policy could become overly strained

As is discussed in Chapter IV, the fiscal stance eased somewhat in 2015 and appears likely to continue in that vein this year. Current estimates indicate that the easing will amount to a total of nearly 2½% of GDP, or just over 50 b.kr., in terms of the cyclically adjusted change in the primary balance. As has been discussed in previous issues of *Monetary Bulletin*, it is unfortunate that fiscal easing should take place when tension has developed in the domestic economy. Other things being equal, it will put more pressure on monetary policy, thereby increasing the risk of negative side effects from an unfavourable fiscal-monetary policy mix, which would be reflected in a need for higher domestic interest rates and heightened risk of unstable short-term capital inflows.

Chart I-15 shows this more clearly. It illustrates an alternative scenario in which the cyclically adjusted primary balance remains unchanged for the entire period from 2015 through 2018. Although previous analyses indicate that the easing takes place primarily on the revenues side of fiscal policy (see Chapter IV and Box 3 of *Monetary Bulletin* 2015/4), it is assumed here that the fiscal tightening takes place on the revenues and expenditures sides in equal measure. In the alternative scenario, public consumption expenditure is assumed to have been 11 b.kr. less in 2015 than it actually was and about 26 b.kr. less in 2016, for a combined total equivalent to about 1.2% of year-2015 GDP. This difference holds throughout the forecast horizon. Individuals' income tax then rises by the same amount. The fiscal tightening therefore corresponds to approximately 1% of year-2015 GDP, which rises to 2½% of year-2016 GDP and then remains close to

Chart I-15
Alternative scenarios



Source: Central Bank of Iceland.

that level for the remainder of the forecast horizon. This ensures that fiscal policy remains neutral for the entire period.

With tighter fiscal policy, domestic demand grows by approximately 1 percentage point less per year in 2015 and 2016. The effects of the measures are both direct – through reduced public expenditure – and indirect – through weaker private consumption growth. The effects on GDP growth are smaller, however, because the reduction in demand affects goods and services imports. Tighter fiscal policy also reduces inflationary pressures, thereby enabling the Central Bank to keep interest rates lower than it would otherwise, which stimulates investment. GDP growth is therefore about ½ a percentage point less in both years, but from 2017 onwards it is slightly stronger, as the Central Bank's key rate will be 0.5 percentage points lower this year and 0.75 points lower next year. Tighter fiscal policy also means that gross national saving is greater than in the baseline forecast and the current account surplus is larger by just over ½% of GDP per year.²

Private consumption could grow more rapidly than is assumed in the baseline forecast

Private consumption has increased by almost 3% per year, on average, over the past five years, and it has gained momentum as time passes since the financial crisis. For example, it grew by 3% in 2014 and nearly 5% in 2015. The outlook for 2016 indicates even stronger growth, or about 6%, as is discussed above. Although private con-

2. A more detailed description of fiscal multipliers in the Bank's macroeconomic model can be found in the QMM handbook: Ásgeir Danielsson, Bjarni G. Einarsson, Magnús F. Gudmundsson, Svava J. Haraldsdóttir, Thórarinn G. Pétursson, Signý Sigmundardóttir, Jósef Sigurdsson, and Rósa Sveinsdóttir (2015). "QMM: A quarterly macroeconomic model of the Icelandic economy. Version 3.0." Central Bank of Iceland, *Working Paper*, no. 71, pp. 110-113.

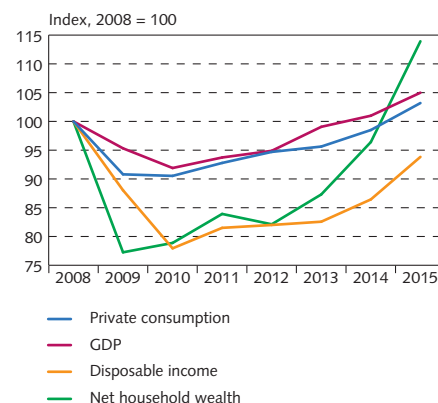
sumption growth has been significant in the recent past, it is outpaced by disposable income, which is estimated to have grown by nearly 9% in real terms in 2015 and by an average of nearly 4% per year over the past five years. Net household wealth has increased even further, with rising asset prices and declining debt. In real terms, it has grown by more than 10% per year in the past two years and by an average of nearly 8% per year in the past five years. Household income and wealth have therefore grown well in excess of private consumption growth, and household saving has therefore increased. This comes after income and wealth contracted more than private consumption in the wake of the financial crisis, showing clearly how households use income and equity to smooth out fluctuations in private consumption over time (Chart I-16).

Chart I-16 also shows that private consumption growth has been broadly in line with GDP growth in the recent term. The ratio of private consumption to GDP has therefore remained relatively stable and has been somewhat below the historical average (Chart I-17). On average, private consumption at current price levels has been slightly more than 56% of nominal GDP over the past thirty years, but in the last five years the ratio has been just under 52%, more than 4 percentage points below the long-term average (the deviation in the ratio of private consumption to disposable income from the historical average is very similar).³ According to the baseline forecast, this ratio is assumed to rise in coming years but to remain somewhat below the historical average throughout the forecast horizon.

It is not impossible that households will choose to use a larger share of their income and increased wealth for private consumption than is assumed in the baseline forecast and that private consumption will therefore grow more rapidly than is projected. Although it can be expected that a share of this additional consumption spending will be directed at imported goods and services, it is clear that more rapid private consumption growth will also affect domestic production and place greater strain on domestic factors of production than is currently forecast. Demand will therefore be stronger and the output gap wider, which will lead to increased inflationary pressures and call for higher interest rates in order to keep inflation close to target over the medium term.

This can be seen more clearly in Chart I-15, which presents an alternative scenario in which the private consumption-to-GDP ratio rises faster than in the baseline forecast and has reached the historical average by the end of the forecast horizon. As a result, private consumption will grow somewhat more rapidly, but this is offset by higher interest rates, which cut into investment. Higher interest rates also cause the exchange rate of the króna to rise, thus reducing exports. On the whole, however, GDP increases significantly; it will be ½ a percentage point more in 2016 and 1 percentage point more in 2017. A portion of the increased demand is directed at imports; therefore,

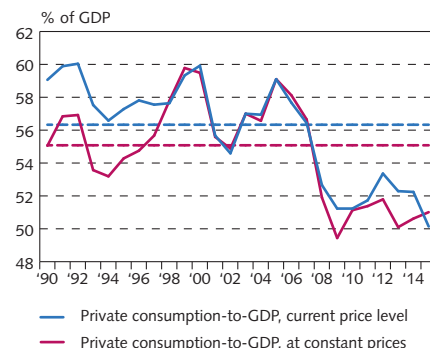
Chart I-16
Private consumption, income, and wealth
2008-2015¹



1. Net wealth is the sum of households' housing and financial wealth (excluding pension fund rights), net of household debt (year-end figures). All at constant prices.

Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-17
Private consumption relative to GDP
1990-2015¹



1. Broken lines show 30-year average (1986-2015).

Source: Statistics Iceland.

3. A similar result is also obtained in comparison with the estimated equilibrium ratio of private consumption to GDP. See Ásgeir Danielsson (2009), "QMM: A steady state version", Central Bank of Iceland, *Working Paper*, no. 44. According to the updated estimate of the equilibrium values in the model, the steady-state ratio of private consumption to GDP is about 56% (see Box 3).

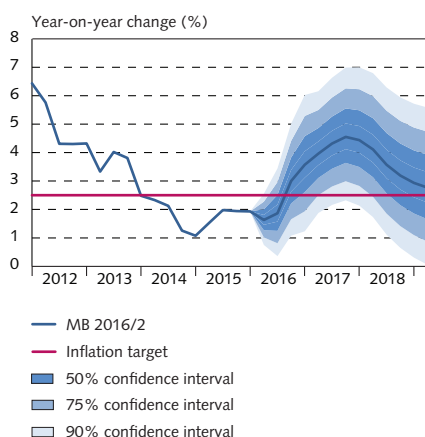
by 2018 the trade surplus will be smaller than in the baseline forecast by about 2 percentage points of GDP. A larger output gap means that inflation will be somewhat higher, but the effects will emerge in higher interest rates as well, and the Central Bank's key rate will be nearly 1½ percentage points higher than in the baseline forecast by 2018.

Inflation risk profile still tilted to the upside

The uncertainties described above show clearly that the inflation outlook for the next three years could easily deviate from the scenario presented in the baseline forecast. Inflationary pressures could be underestimated, which (other things being equal) would call for higher interest rates than in the baseline forecast in order to keep inflation at target.⁴ Among possible causes of such a deviation, the demand-side effects of the recent wage settlements and the stimulative Government measures could be underestimated or firms could have greater difficulty absorbing large cost increases following wage settlements than is assumed in the baseline forecast. Furthermore, inflation could be underestimated if house prices rise even further than is assumed or if the króna depreciates. Moreover, if inflation expectations are more poorly anchored than is assumed, inflation could prove more persistent than is forecast. In addition, the fiscal stance could ease still further, particularly in view of the upcoming Parliamentary elections. Although monetary policy transmission via interest rates has normalised somewhat in the recent past, the interest rate channel is still not fully functional; therefore, it could prove more difficult for monetary policy to contain domestic demand than is assumed in the baseline forecast. Inflation could also be overestimated in the forecast. For instance, it could turn out lower than projected if the global economic outlook deteriorates still further or if global oil and commodity prices will be lower than is assumed in the forecast. The króna could also appreciate, and firms' ability to absorb increased costs could be underestimated. Moreover, productivity growth, which is weak in historical context, could be underestimated, which would mitigate the inflationary effects of recent pay rises (see, for instance, the alternative scenario in Chapter I of *Monetary Bulletin 2015/4*).

Chart I-18 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 forecast horizon (the methodology is described in Appendix 3 in *Monetary Bulletin 2005/1*). The uncertainty about the inflation outlook is broadly unchanged since February. As was the case then, the risk profile is tilted to the upside, although the probability distribution of the forecast is considered slightly less skewed than before. There is a roughly 50% probability that inflation will be in the 3-5% range in one year and in the 1¾-4% range by the end of the forecast horizon.

Chart I-18
Inflation forecast and confidence intervals
Q1/2012 - Q2/2019



Sources: Statistics Iceland, Central Bank of Iceland.

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.