Economic and monetary developments and prospects[1]

Inflation at target by year-end

The exchange rate of the króna has remained relatively stable since the last Monetary Bulletin *was published, even though the Central Bank has lowered interest rates by 1.75 percentage points in two steps. According to the baseline forecast, the króna will appreciate slightly as the forecast horizon progresses. Global economic developments have been broadly in line with the Bank's earlier forecasts, but in the first half of the year the domestic economy has been somewhat less resilient than expected. There are signs, however, that the contraction in Q2 was smaller than preliminary figures from Statistics Iceland suggest. The outlook is for GDP to contract more this year, and grow less in 2011, than was forecast in August. It is still assumed, however, that GDP bottomed out in Q2 and recovery began in Q3. The forecast assumes almost 3% output growth in 2012-2013. As a result, it is projected that employment levels will start to rise in mid-2011 and that unemployment will gradually diminish throughout the forecast period. Inflation has subsided more quickly than was forecast in August and is now expected to align with the Bank's inflation target at year-end, somewhat earlier than previous forecasts suggested. Inflation will also rise less than previously anticipated in early 2011 because of changed assumptions concerning consumption tax hikes. According to the National Budget bill for 2011, these taxes will rise less sharply than previously assumed. Owing to a stable exchange rate, modest wage rises during the forecast horizon, declining inflation expectations, and spare output capacity, inflation will decline more rapidly through mid-2011, when it will begin to rise again towards the inflation target. The medium-term economic outlook is quite uncertain. Recovery could prove weaker if global recovery suffers a setback, if heavy household indebtedness curtails private consumption growth more than the forecast assumes, and if investments in energy-intensive industry are delayed still further. The same applies if wage rises are larger than is consistent with price stability and if the austerity measures in the National Budget bill are not successful, although this could have a transitory stimulative effect. On the other hand, recovery could be stronger if the real exchange rate rises more rapidly towards long-term equilibrium and if business investment recovers more strongly than in the baseline forecast.*

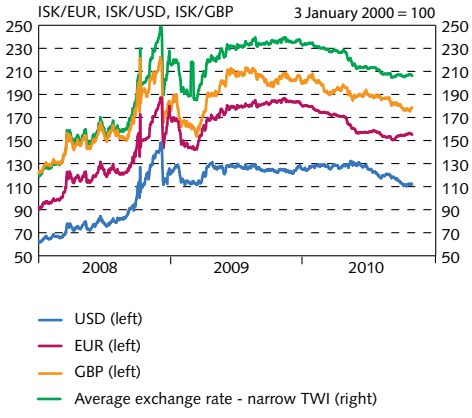
I Economic outlook and main uncertainties

Trade-weighted exchange rate broadly unchanged since August

The króna has continued to appreciate throughout the year and is now 13% stronger in trade-weighted terms than at the beginning of the year. The trade-weighted exchange rate index has remained relatively stable since *Monetary Bulletin* 2010/3 was published on 18 August. Favourable developments in external trade, declining domestic inflation, and the capital controls have supported the króna, which has held stable in spite of Central Bank foreign currency purchases aimed at building up non-borrowed reserves. Since these purchases began at end-August, the Bank has bought foreign currency for roughly 3 b.kr.

The exchange rate has changed somewhat against individual currencies since August, however. For example, the króna has appreciated by roughly 6% against the US dollar and 4.5% against the pound sterling but has depreciated by 1% against the euro. The EURISK exchange rate was just over 154 kr. in Q3/2010, as opposed to 156 kr. according to the last forecast.

Chart I-1
Exchange rate of the króna
Daily data 3 January 2008 - 29 October 2010



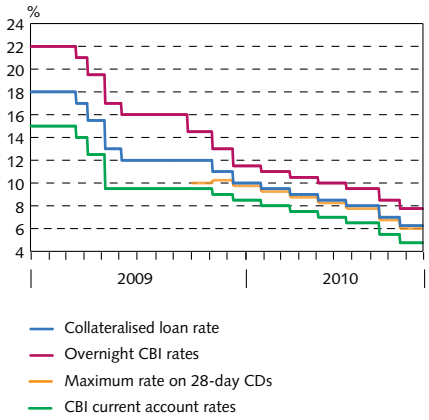
Source: Central Bank of Iceland.

Central Bank interest rates fall …

Since *Monetary Bulletin* was published in August, the Bank's Monetary Policy Committee (MPC) has cut interest rates twice, first by 1 per-

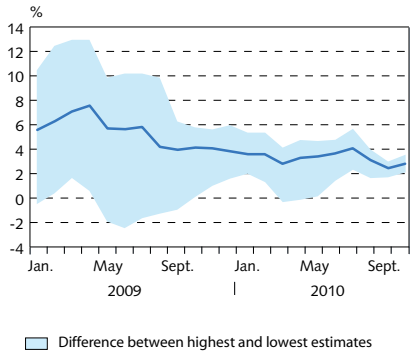
1. The analysis in this *Monetary Bulletin* is based on data available at the end of October.

Chart I-2
Central Bank of Iceland interest rates
Daily data 1 January 2009 - 29 October 2010



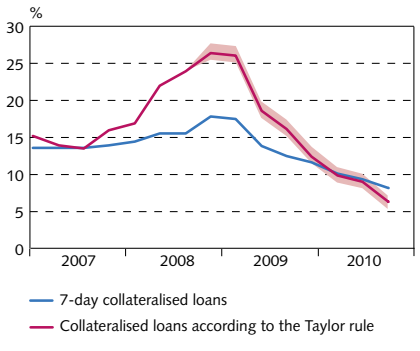
Source: Central Bank of Iceland.

Chart I-3
Real Central Bank interest rate in terms of various measures of inflation[1]



1. Based on corporate and bond market inflation expectations one year ahead, current twelve-month inflation, and the Central Bank inflation forecast one year ahead.
Source: Capacent Gallup, Central Bank of Iceland.

Chart I-4
Central Bank of Iceland collateral loan rate and comparison with the Taylor rule



Source: Central Bank of Iceland.

centage point at the August meeting and then by 0.75 percentage points in September. As of late October, the current account rate is 4.75%, the maximum rate on 28-day certificates of deposit (CDs) is 6%, the collateralised lending rate is 6.25%, and the overnight rate was 7.75%. Based on the liquidity position of the financial system, it can be assumed that the Bank's effective policy rate lies somewhere between its current account rate and its CD rate. The average of the two is now 5.4%.

… and monetary restraint eases

In terms of most measures, the Central Bank's real interest rate has been on the decline since last summer, after a temporary rise due to rapid disinflation at mid-year. The real interest rate is approximately 1½% in terms of current inflation and just under 3% in terms of business and bond market inflation expectations. In terms of the Central Bank's one-year inflation forecast, however, it is just over 3½%. As Chart I-3 shows, the average real interest rate has declined by roughly 1 percentage point since the beginning of the year. The chart also shows that the difference between the various measures of the real interest rate has diminished, reflecting a smaller gap between the main measures of inflation expectations. At the same time, the risk-adjusted interest rate differential with abroad has remained broadly unchanged. Interest rate developments and monetary conditions are discussed in greater detail in Section III.

Domestic economic developments imply continued monetary easing

Decisions about the level of monetary restraint are generally grounded on a broad-based assessment of economic conditions and outlook that is difficult to describe in terms of simple policy rules. Such rules are often used, however, when assessing the level of monetary restraint or comparing monetary conditions across countries. One popular rule of this type is the Taylor rule, which measures the deviation of the policy rate from its equilibrium value based on the output gap and the deviation of inflation from target.[2] The equilibrium real interest rate should then reflect the internal and external balance of the economy and is determined by economic factors such as productivity of capital, the propensity to save, and the long-term potential growth rate. This rate should have been somewhat higher in Iceland in the run-up to the financial crisis than in larger and more developed economies, as capital has historically been more productive in Iceland and saving levels low.[3] It is likely, however, that the equilibrium rate fell during the crisis, although by how much, and whether and when it will return to its previous level, is extremely uncertain. Chart I-4 illustrates developments in the Central Bank's collateralised lending rate as compared with interest rates calculated using a simple Taylor

2. This rule has been considered a good description of central bank behaviour around the world. See, for example, Box 5 in *Monetary Bulletin* 2002/2 and Box I-2 in *Monetary Bulletin* 2007/3.

3. It is assumed that this equilibrium real interest rate was 4.5% in the run-up to the crisis. See Ásgeir Daníelsson (2009), "QMM: A steady state version", Central Bank of Iceland *Working Paper* no. 44.

rule, based on different estimates of the equilibrium real interest rate. The Bank's baseline forecast assumes that the equilibrium real interest rate fell by 1.5 percentage points in the wake of the financial crisis but will rise gradually to its previous level later in the forecast horizon. The range shows possible upper and lower limits, assuming, on the one hand, that the equilibrium real interest rate fell by one additional percentage point, and on the other, that it remained unchanged from its pre-crisis level. The actual uncertainty could easily be much greater, however. As a result, the possibility that the equilibrium rate is below the range shown in the aftermath of the crisis cannot be ruled out. Offsetting this is the fact that, at present, the Central Bank's effective policy rate is below its collateralised lending rate.

As the chart shows, the Bank's collateralised lending rate was in line with the Taylor rule in the latter half 2007 but then rose too little in the run-up to the financial crisis, when the upswing was at its peak. The difference grew still more in the wake of the crisis, reflecting that the capital controls made it possible for the Bank to keep interest rates much lower than would otherwise have been possible. The great uncertainty about equilibrium interest rates during this period must also be borne in mind. The collateralised lending rate was in line with the Taylor rule again late in 2009 and has fallen more or less in line with the rule since that time. Based on the Taylor rule, however, it should have fallen to 4-6% by Q3, whereas it was actually 7%. The rule also suggests that interest rates should continue to fall in coming months.

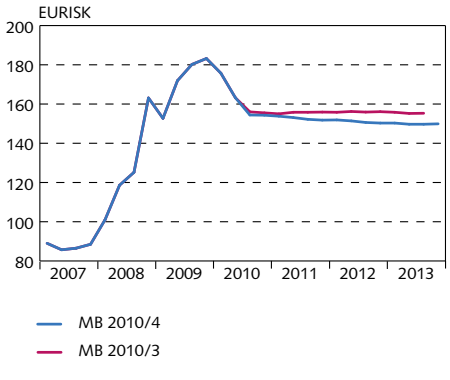
The inflation outlook and the slack in the economy therefore indicate that there is continued scope for reduction of Central Bank interest rates. This is offset by the need both to maintain exchange rate stability while domestic balance sheet restructuring is underway and to maintain a sufficient risk-adjusted interest rate differential with abroad when financial account liberalisation resumes.

Limited export growth

In the first half of the year, GDP growth was somewhat stronger than expected in the euro area, although it was weaker in the US and several other developed countries. Forecasts indicate somewhat stronger global output growth in 2010 than was projected in the August *Monetary Bulletin*. The outlook for 2011 and onwards, however, is similar to that projected in August. Forecasts of developments in global trade have remained broadly unchanged as well.

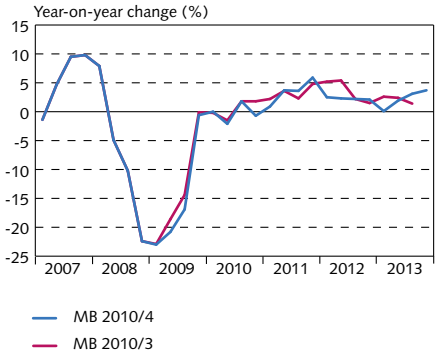
The outlook is for about ½-1% growth in Iceland's exports of goods and services in 2010 and 2011, followed by 2% growth in 2012 and 2013. The low level of growth in 2010 is due primarily to substantial transitory aircraft exports in 2009. If these are excluded, this year's export growth measures just over 3%. Weak export growth in 2011 is due primarily to a contraction in marine product exports and limited changes in exports of energy-intensive industrial products. Other exports have grown strongly, however, and kept pace with developments in global trade. The outlook for exports further along the forecast horizon is slightly less favourable than in the August forecast, not least because of expected further delays in energy-intensive

Chart I-5
The ISK exchange rate against the euro - comparison with MB 2010/3



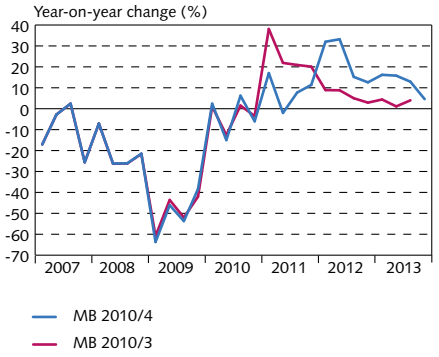
Source: Central Bank of Iceland.

Chart I-6
Private consumption - comparison with MB 2010/3



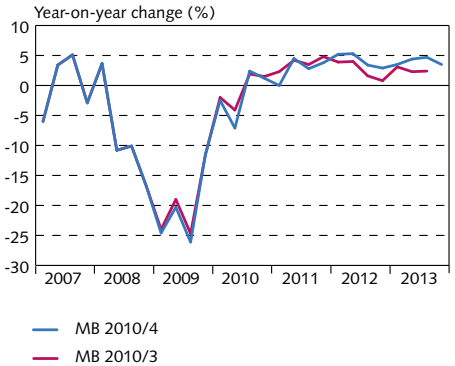
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-7
Investment - comparison with MB 2010/3



Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-8
Domestic demand - comparison with MB 2010/3



Sources: Statistics Iceland, Central Bank of Iceland.

development projects. Weaker exports and stronger imports will result in a smaller trade surplus in the latter half of the forecasting horizon than was forecast in August. Further discussion of global economic developments, exports, the external balance, and the external conditions of the Icelandic economy can be found in Sections II and VII.

Króna to appreciate marginally during the forecast horizon

In trade-weighted terms, the exchange rate is broadly unchanged from the last forecast. The outlook is for a continued external trade surplus and improved terms of trade, even though recovery will be weaker than was forecast in August as a result of sharp rises in global commodity prices and smaller increases in marine product prices. The exchange rate is therefore expected to be about 2% higher in trade-weighted terms by year-end than according to the August forecast, and about 3½% by the end of the forecast horizon. If this forecast is borne out, the EURISK exchange rate will be about 150 kr. and the trade-weighted exchange rate index about 200. Further discussion of developments in the foreign exchange market can be found in Section III.

Domestic demand to recover slowly

According to preliminary figures from Statistics Iceland, private consumption contracted by 2.1% year-on-year in Q2, broadly in line with the 1.5% contraction projected in the August *Monetary Bulletin*. Leading indicators, including turnover, suggest that growth was relatively strong in Q3, but for the year as a whole it will be somewhat less than in the August forecast. As in August, robust growth in private consumption is projected for the latter part of 2011. The forecast estimates private consumption growth at 3½% for 2011 as a whole and 2½% per year in 2012 and 2013.

Public consumption is projected to develop in line with the estimates in the National Budget for 2011. At current prices, the development is similar to that presented in the August forecast and in line with the Government-IMF programme, but due to changes in the outlook for price developments, public consumption is expected to contract somewhat less in volume terms than was projected in August.

Preliminary Q2 figures from Statistics Iceland indicate a year-on-year contraction in investment of just over 26%, substantially more than the 12.6% assumed in August. However, new data on imports of investment goods, indicators of investment plans from the Capacent Gallup survey among Iceland's 400 largest companies, and information on investment in energy-intensive industry in the first half of the year all suggest that the Statistics Iceland figures on Q2 investment will be revised upwards in December, when the national accounts are reviewed again. The contraction in the second quarter is now estimated at 15%, much closer to the Central Bank's August forecast than the national accounts figure. The forecast for investment for 2010 as a whole is unchanged from the August forecast, at 3.7%. The recovery in investment in 2011 will be considerably weaker than was assumed in August, owing to less investment in energy-intensive industry (see Box IV-1); however, it is expected that investment growth will be stronger in 2012.

On the whole, the outlook is for national expenditure to contract by 1½% in 2010 instead of just under 1% according to the August forecast. It is expected to grow by nearly 3% in 2011, however, and by approximately 4% per year in 2012 and 2013. As a result, domestic demand will increase less in 2010 than according to the August forecast but will grow more strongly in the latter part of the forecast horizon. Further discussion of the financial conditions of the private sector can be found in Section III, and a discussion of general public and private sector demand can be found in Sections IV and V.

Recovery appears to have begun in Q3

Statistics Iceland's preliminary figures imply that GDP contracted by 8.4% year-on-year in Q2, compared to the 4.3% assumed in the Bank's August forecast. The main reason for the deviation is the previously described difference between the Bank's forecast and Statistics Iceland's estimate of the contraction in investment.

According to the Bank's current assessment of investment in Q2, it is likely that GDP contracted by 6.9% in Q2, which is closer to the August forecast. Furthermore, the outlook is for GDP to contract by 2.6% for 2010 as a whole instead of the 1.9% in the August forecast, following on from a 6.8% contraction in 2009. These figures show that Iceland's post-crisis contraction is deeper than that in most other countries (see Box IV-2).

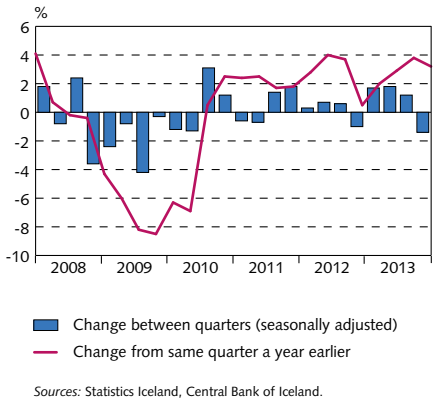
In its last two forecasts, the Central Bank has assumed that economic recovery would begin in the third quarter of 2010, even though seasonally adjusted GDP figures from Statistics Iceland, published in March and June, indicated that recovery began in Q4/2009. As has been discussed in previous issues of *Monetary Bulletin*, quarterly macroeconomic data in Iceland are highly volatile and may change markedly from one revision to the next. Furthermore, it is difficult to estimate the seasonal pattern in GDP at present because of the prevailing volatility. As a result, it came as no surprise that Statistics Iceland's revised figures from September showed that GDP was still contracting in the first half of 2010, as the Central Bank forecast had indicated.

As before, it is assumed that recovery began in the third quarter of the year and will continue in the fourth. Growth is somewhat stronger than was forecast in August, but the outlook for the first half of 2011 is poorer. The outlook is for GDP growth to be somewhat weaker in 2011 than in the August forecast, or 2.1%. The forecast also assumes 2.7% and 3% growth in 2012 and 2013, respectively. According to the forecast, growth in private consumption will drive GDP growth early on in the forecast horizon, with investment growth making a larger contribution later on. The contribution from net exports, however, is limited. Section IV discusses GDP growth and outlook in greater detail.

Employment to rise in mid-2011

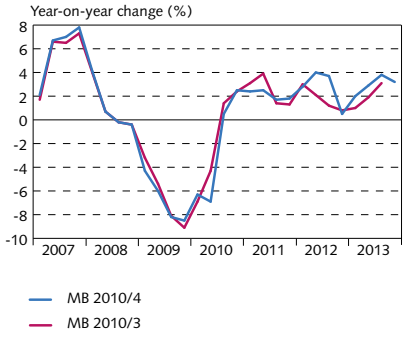
According to the Statistics Iceland labour market survey for Q2/2010, employment rose year-on-year during the quarter, after a steep contraction dating back to the latter half of 2008. A comparable survey for Q3 indicates that the improvement was only temporary and that

Chart I-9
Change in GDP



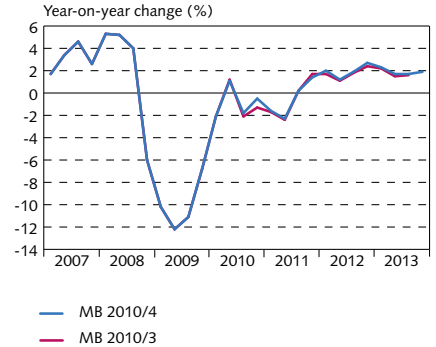
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-10
Output growth - comparison with MB 2010/3



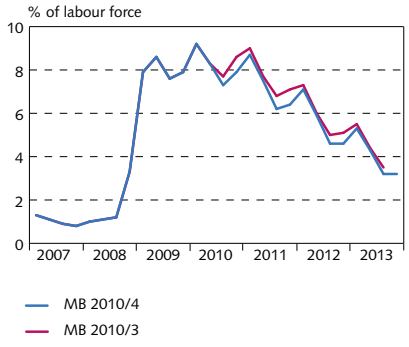
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-11
Employment - comparison with MB 2010/3



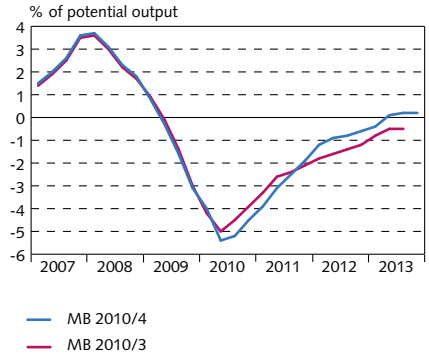
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-12
Unemployment - comparison with MB 2010/3



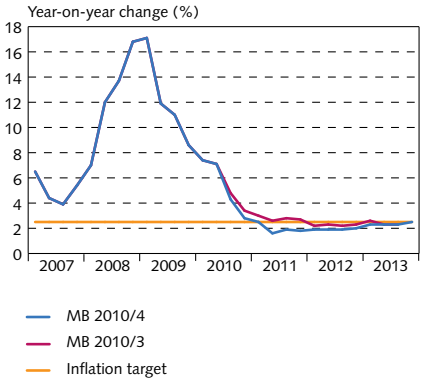
Sources: Directorate of Labour, Central Bank of Iceland.

Chart I-13
Output gap - comparison with MB 2010/3



Source: Central Bank of Iceland.

Chart I-14
Inflation - comparison with MB 2010/3



Sources: Statistics Iceland, Central Bank of Iceland.

demand for labour has contracted once again, as the Bank expected in August. It is still assumed that sustained recovery of employment will not begin until mid-2011, a year after GDP growth has resumed, which is in line with other countries' experience in the wake of a financial crisis. The baseline forecast assumes that employment will grow by approximately 2% per year beginning in 2012, somewhat slower than GDP. Labour productivity will therefore grow by 1-2% when the economy has recovered. Productivity growth will be poor in 2010 due to a temporary rise in employment, however, contributing to a 6½% rise in unit labour costs during the year. In coming years, the rise in wage costs will slow down rapidly, due to modest pay hikes and robust productivity growth.

Unemployment proved lower in Q3 than according to the August forecast, and looks set to be lower in Q4 as well. The unemployment outlook for the next few years is broadly in line with the August forecast, though. The jobless rate is projected to peak in Q1/2011 and then taper off again in tandem with increased economic activity, dropping to about 3% by the end of 2013. Further discussion of the labour market can be found in Section VI.

Output slack peaked at mid-year

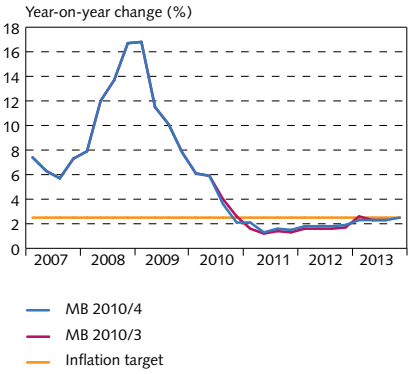
The output slack is considered to have peaked at 5½% in the second quarter of the year. This is a somewhat more pronounced slack than was assumed in the August forecast, as it now appears that the contraction in 2010 will prove deeper than was assumed then. It is offset by a somewhat larger contraction in potential output in 2010 and 2011 than was anticipated in August. The primary reason for the change is the prospect of slower growth in investment than in the August forecast. This does not change the fact, however, that recovery is expected to have begun in mid-2010 and the output slack is projected to narrow gradually. According to the forecast, the output slack will have vanished by mid-2013. Further discussion of production capacity and output slack can be found in Section IV.

Inflation approaches Central Bank inflation target

Inflation subsided more rapidly in Q3 than was anticipated in August and looks set to align with the inflation target by year-end, about half a year earlier than according to the August forecast, due in part to less underlying inflationary pressure in the latter half of the year. In addition, the National Budget for 2011 provides for much smaller consumption tax increases than was assumed in the Bank's earlier forecasts. This will further reduce headline inflation from the beginning of next year. The substantial slack in the economy, the appreciation of the króna, modest increases in wage costs, and diminishing inflation expectations all contribute to further disinflation through mid-2011, when inflation is forecast to bottom out at 1½%. From that point on, it will begin to rise again and will be consistent with the inflation target in the latter part of the forecast horizon. Excluding the effects of the consumption tax increases that have already occurred, the inflation outlook is broadly unchanged from August. Further discussion of global inflation developments can be found in Section II,

and developments in domestic inflation and inflation expectations are discussed in Section VIII.

Chart I-15
Inflation excluding tax effects - comparison with MB 2010/3



Sources: Statistics Iceland, Central Bank of Iceland.

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 Iceland's external environment, and the effects of those developments on the Icelandic economy. The forecast is also based on an assessment of how individual markets function and how monetary policy is transmitted to the economy. All of these factors are uncertain, however, partly because of the unprecedented scope of the current financial crisis. The economic outlook, domestic or global, could easily diverge from the assumptions in the baseline forecast. The following discussion sets forth five important uncertainties in the baseline forecast, but the possible uncertainties are obviously far greater in number. The sub-section thereafter explores two more important uncertainties in greater detail through alternative scenarios.

The baseline forecast assumes a rather robust global recovery. The forecast assumes that GDP will grow by 2% in Iceland's main trading partners during the forecast horizon, and that world trade will grow even faster. There is still some risk of a slower recovery and even a setback. Until now, recovery has been driven largely by broad-based government policy actions on the monetary and fiscal fronts. But these measures will have to come to an end before long because, over time, they could create the risk of asset price bubbles, inflation, and unsustainable public sector debt. If this causes indebted households and businesses in the largest industrial countries to curtail their spending significantly, it could derail the recovery. In that instance, developments in Iceland's terms of trade and exports could prove less favourable than in the baseline forecast, the exchange rate of the króna could be lower, risk appetite could be less, and access to global capital markets could prove more difficult. Iceland's economic recovery would therefore be slower than is assumed in the baseline forecast.

In the baseline forecast, nominal wages rise broadly in line with consumer prices and underlying productivity during the forecast horizon. Increases in unit labour costs over the forecast horizon will therefore be more or less in line with the inflation target. Although the outlook is for a considerable slack in the labour market in the medium term, wage pressures could prove stronger than in the baseline forecast. For example, there could be pressures to correct the decline in real wages that has occurred since the last wage settlements were concluded. Because the real exchange rate is historically low, competitiveness in the tradable sector has improved significantly. As a result, there is some pressure on behalf of wage-earners to capture some of that improvement. Inflationary pressures would therefore be greater, as larger wage hikes would spread to the non-tradable sector, which does not have the same scope to absorb higher wage costs. For the short term, such pay rises could stimulate private consumption, but firms in the non-tradable sector could be forced to respond to

increased wage costs with further layoffs, in which case employment would be weaker than in the baseline forecast and unemployment higher. Furthermore, increased inflationary pressures call for a higher interest rate level, which further reduces demand and employment. Moreover, it would be necessary to cut public expenditure still further in response to higher pay rises if the Government's nominal public consumption growth targets are to be met. If wage rises stem primarily from long-term inflation expectations in excess of the inflation target, the economic cost of increasing real wages over and above productivity growth will be greater than it would otherwise.

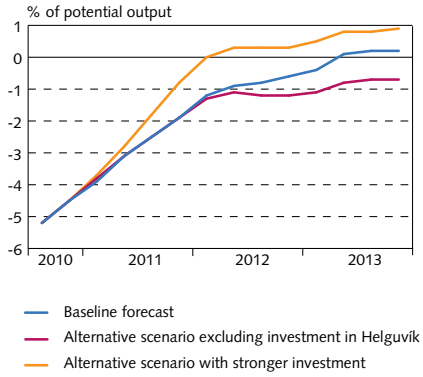
The baseline forecast assumes that the Government will be successful in implementing the fiscal consolidation measures specified in the National Budget bill for 2011 and described in the Government-IMF programme. Those measures require retrenchment in all areas of Government operations, but they are not broader in scope than those undertaken in a number of other countries that have been faced with such circumstances (see Section V). The aim is to ensure sustainability of public sector finances, as public debt has grown enormously in the wake of the financial and economic crisis. Higher Government expenditures and lower taxes could possibly stimulate demand for a short period of time, but the relief would be short-lived because, if attempts to implement the current programme are unsuccessful and debt accumulation and the fiscal deficit exceed target levels, confidence in the Treasury could be eroded still further, curtailing access to credit and making credit terms tighter due to rising risk premia on Treasury debt. Laxer fiscal policy could also mean that the Government would have to rely more heavily on the domestic credit market than is assumed in the baseline forecast. Other things being equal, that would put additional upward pressure on domestic interest rates because the Government would end up competing with the private sector for domestic savings. With limited access to foreign credit, this would imply increased domestic savings, which would only be accomplished through further reductions in domestic demand. Households could also choose to save more in anticipation of possible tax increases. Prolonged deficit operations and growing Treasury debt also generate the risk of persistent inflation, currency depreciation, and rising interest rates. Consequently, economic recovery could prove weaker than is assumed in the baseline forecast.

The baseline scenario assumes that private consumption will continue to recover slowly in 2010, after an enormous contraction in 2008-2009. The baseline forecast is deemed cautious, but high levels of household debt create considerable uncertainty about the medium-term outlook for private consumption. It is possible that households will need more time to strengthen their balance sheets by stepping up savings, deleveraging, and restructuring their debt. Private consumption has also been sustained in part by fiscal measures, many of which are temporary, including large increases in mortgage interest allowances, a variety of options to ease borrowers' debt service burden, and payouts from third-pillar pension savings. There is the risk of a setback when these measures are discontinued, and recovery could be delayed if heavy indebtedness cuts more deeply into private

consumption than the baseline forecast assumes. In that instance, domestic demand would be weaker than in the baseline scenario, the slack in the economy would be greater, and the recession more protracted. This uncertainty is discussed more fully in the alternative scenario described on pp. 13-14 of *Monetary Bulletin* 2010/2.

The baseline forecast assumes that the real exchange rate fell below its long-term equilibrium value in the wake of the crisis and will remain there for some time, owing to heavy foreign indebtedness and high risk premia on Icelandic financial assets, which reflects, among other things, limited confidence in the currency and the poor credit ratings of Icelandic entities. It is expected that the real exchange rate will still be somewhat below long-term equilibrium at the end of the forecast horizon. This assumption is subject to considerable uncertainty, however, and the possibility cannot be excluded that a sharp turnaround in external trade, enhanced confidence in the Government's economic policy, advantageous developments in external debt (e.g., due to better recovery ratios on foreign assets), and improved credit ratings for Icelandic entities could prompt the real exchange rate to recover sooner and to a higher level than in the baseline forecast. A speedier rise in the real exchange rate towards long-term equilibrium could cut into export growth, but this should be offset by the positive effects of a higher exchange rate on the balance sheets of exporters with heavy foreign-denominated debt. A higher real exchange rate should also ease the debt service burden for many indebted households and, other things being equal, should be accompanied by stronger private consumption and imports, although this positive effect on household balance sheets will diminish as the number of foreign currency loans converted to domestic currency rises. Similarly, a higher exchange rate should reduce the risk of wage pressures and contain inflationary pressures. If so, recovery could be stronger than the baseline forecast indicates. This uncertainty is discussed more fully in the alternative scenario described on pp. 14-15 of *Monetary Bulletin* 2010/2.

Chart I-16
Output gap - alternative scenarios

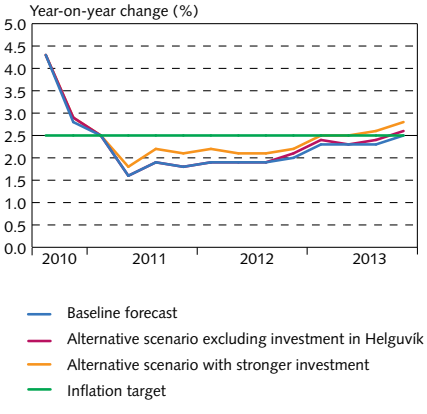


Source: Central Bank of Iceland.

Alternative scenarios

Alternative scenarios can provide useful indications of the effects of important assumptions in the baseline forecast on the economic outlook, and how these deviations interact with monetary policy. Two alternative scenarios are described below. In the first scenario, the construction of the Helguvík aluminium smelter and associated power plant does not take place, while the second assumes more rapid improvement in Icelanders' financing terms, a higher level of inward foreign direct investment, and stronger recovery of investment than in the baseline forecast.

Chart I-17
Inflation - alternative scenarios



Sources: Statistics Iceland, Central Bank of Iceland.

No construction in connection with Helguvík aluminium smelter

The baseline forecast assumes that construction of the Helguvík aluminium smelter and associated power plant will be in full swing by 2012, with activity peaking in 2013. The project involves the first of four planned phases of construction, each delivering about 90,000 metric tons per year in annual production. Projected investment in

the first phase is assumed to amount to 75 b.kr., nearly twice as much as each ensuing phase. The baseline forecast only includes the first phase of the project because the subsequent phases have limited impact during the forecast horizon. The forecast also assumes that HS Orka and Reykjavík Energy will deliver power for the first phase and that Landsnet will invest heavily in reinforcement of transmission lines in Southwest Iceland. The project involves an estimated 1,900 man-years for construction and about 250 man-years for operation of the smelter.

As is discussed in Section IV and Box IV-1, the Helguvík project has been delayed repeatedly due to funding difficulties, uncertainty about access to sufficient energy, and problems with planning and permits. At this point, the probability that the project will be shelved for an undetermined length of time has increased. This alternative scenario therefore assumes that the Helguvík project will not be undertaken during the forecast horizon.

In comparison with the baseline forecast, this will primarily affect economic developments in 2012-2013. Growth in total investment could be about 10 percentage points less in 2012 and 5 percentage points less in 2013 than in the baseline forecast. Growth in domestic demand will therefore be about 2 percentage points lower in each of the two years, and GDP growth will be nearly 1 percentage point less in 2012 and ½ percentage point less in 2013. Furthermore, demand for labour will be less, and unemployment will be higher by ½ percentage point in 2012 and roughly 1 percentage point in 2013. Weaker investment will also reduce potential output in the economy as a whole. The output slack will not disappear until mid-2014 and will be almost 1 percentage point larger in 2013 than according to the baseline forecast (Chart I-16). A more pronounced slack in the economy also means that interest rates will be lower, which in turn implies a lower exchange rate than in the baseline forecast. This offsets the effects of the slack on inflation, and inflation developments will therefore be very similar to those in the baseline forecast (Chart I-17).

Stronger recovery of investment

Business investment began to contract in 2007 and, as a share of GDP, fell to a historical low in Q1/2009. Since then it has risen marginally, with the ratio of business investment to GDP measuring nearly 4% in Q2/2010 excluding aluminium and power sector investments, and about 8½% including those investments. Thus the investment level is still somewhat below the historical average, which is about 9% of GDP without aluminium and power sector investments, and about 12½% overall. In fact, the overall ratio is slightly lower on average, about 11.8%, if the large development projects beginning in 2004 are excluded. The baseline forecast assumes that the investment ratio will continue to rise throughout the forecast horizon and, by the end of the period, reach about 8% net of aluminium and power sector development and about 12% if those projects are included. Business investment excluding heavy industrial development will therefore be below its long-term average at the end of the forecast horizon, according to the baseline forecast.

The baseline forecast also assumes a slow decline in the risk premia on Icelandic financial obligations, but risk premia could fall farther and more rapidly in the next few months, as foreign markets realise how large Iceland's foreign exchange reserves are relative to the Treasury's external debt service. Normalisation of global financial markets could also stimulate international investors' interest in investing in the Icelandic economy and provide Icelandic firms with readier access to foreign credit. The baseline forecast assumes that inward foreign direct investment will not recover to any measurable degree until the latter half of 2011. This is broadly the same time from the outset of the crisis as in many Asian countries following the crisis in the late 1990s, but about one year longer than in the wake of the Nordic financial crisis of the early 1990s.

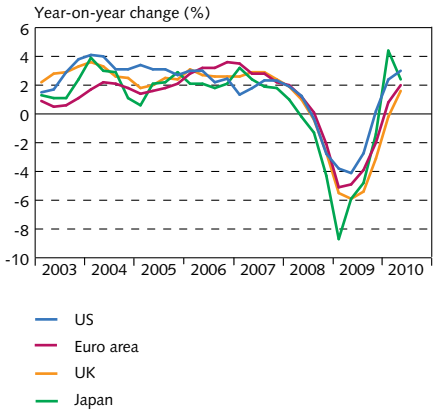
This alternative scenario therefore assumes somewhat stronger recovery of investment, owing to improved access to global capital markets. Developments in foreign direct investment would then more closely resemble those in the other Nordic countries following their crisis. It is also assumed that business investment will recover more quickly, with investment growth approaching that in other countries that have recovered rapidly from a financial crisis (Chart IV-16). Moreover, the alternative scenario assumes that risk premia on Icelandic financial assets will decline faster than in the baseline forecast, and that risk premia on domestic cost of capital will fall accordingly.

Business investment as a share of GDP will increase more rapidly than in the baseline forecast, to about 10½% by the end of the forecast horizon if the aluminium and power sector projects are excluded and about 14½% if they are included. Recovery will therefore be stronger and more investment-driven than in the baseline forecast. Potential output will also be greater due to the expansion of the capital stock. GDP growth is broadly in line with the baseline forecast in 2010 but about 1 percentage point greater in 2011 and 2012. As a result, the output slack will be smaller than in the baseline forecast, although it is offset by a stronger recovery of potential output (Chart I-16). The output gap that emerges in 2012 will then disappear in the latter half of 2014. Unemployment also declines more rapidly and will be about 1 percentage point lower in 2012, and roughly ½ percentage point lower in 2013, than in the baseline forecast. A smaller slack in the economy also implies higher interest rates, which, together with greater foreign investment inflows and a more rapid decline in risk premia, will contribute to a higher exchange rate than in the baseline forecast. This will offset the increased inflationary pressures resulting from a smaller output slack. In spite of this, however, inflation will be slightly higher than in the baseline forecast (Chart I-17).

II External conditions and exports

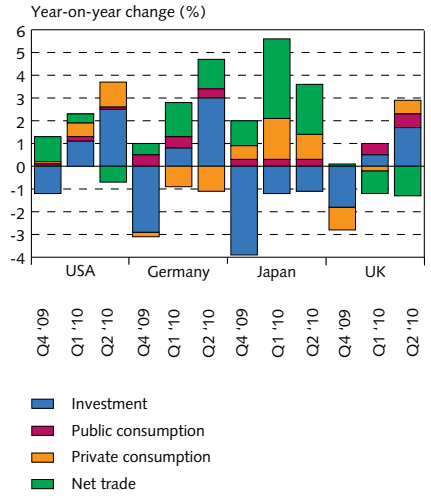
Global economic recovery was relatively strong in the first half of the year, but the outlook is for a weaker second half. The increase in inflation at the beginning of the year has been subsiding, and underlying inflationary pressures are negligible. Even so, commodity prices have risen sharply in the recent past. The global financial markets have not stabilised and asset prices have remained broadly unchanged, but world trade has continued to grow. The prices of Iceland's main exports are much higher this year than in 2009, and terms of trade have improved as a result. Although the real exchange rate has remained low, the current outlook is not for any significant growth in exports over the forecast horizon.

Chart II-1
International growth
Real GDP growth Q1/2003 - Q2/2010



Source: Reuters EcoWin.

Chart II-2
Contribution to GDP growth



Source: Global Insight.

Economic outlook weaker in the second half of 2010, but considerable uncertainty remains

In Iceland's main trading partner countries, particularly those in the EU, GDP growth was somewhat stronger than expected in the first half of the year, as investment appears to have recovered slightly. The most recent OECD forecast suggests that investment within OECD countries has bottomed out. Nonetheless, output growth in the US, Canada, and Norway was less than expected in the first half of the year. Developments in the latter half of the year are still quite uncertain, although forecasts assume weaker GDP growth, particularly in the US and the euro area. Private consumption is still inhibiting economic recovery in most countries, and the outlook for an upturn in the second half of 2010 is rather poor, as unemployment is still high, housing markets are still weak, credit is scarce, and many countries – particularly in the euro area – are struggling with public debt problems. Moreover, many governments have less of an opportunity than before to stimulate their economy because interest rates are extremely low and the authorities have limited scope for supportive policy action.

With the beginning of the year stronger than expected, revised forecasts for this year indicate that recovery will be somewhat stronger for the year as a whole than was assumed in the last *Monetary Bulletin*. The most recent forecasts from Consensus Forecasts and the IMF for output growth in Iceland's main trading partners (except for the US, Canada, and Norway) are generally more optimistic than when *Monetary Bulletin* was last published.

Asset prices broadly unchanged ...

Global equity prices have held more or less unchanged so far in 2010. The turbulence stemming from concerns over high debt levels in a number of EMU countries caused wide fluctuations in the first half of the year. In the Nordic countries, however, equity markets have recovered somewhat, and share prices have risen markedly in both Denmark and Sweden.

Financial markets appear to be calming down again. Nonetheless, banks and governments are extremely vulnerable to new shocks, and uncertainty about near-term GDP growth exacerbates financial market uncertainty. Banks are sensitive to changes in confidence, and

many are still heavily dependent on assistance from their central banks and government authorities. At the same time, housing markets are still in a slump, and some have even suffered renewed setbacks – for example, in the US, where stimulative measures in the form of tax breaks have come to an end. Consequently, even though the financial markets have calmed down recently, there is still a long way to go before they normalise.

… but commodity prices have picked up

The last *Monetary Bulletin* projected a 30% rise in oil prices in 2010, while the current forecast assumes a 25% increase. In the baseline forecast, which takes account of both futures and major analysts' projections, the Central Bank assumes that oil prices will rise by approximately 5% per year in 2011 and 2012, in response to growing global demand.

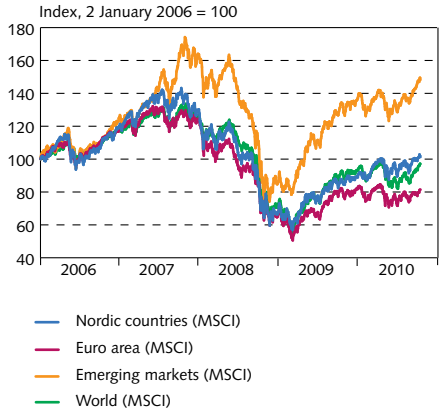
Commodity prices have climbed steadily in 2010, rising steeply in the autumn, driven by increased demand from emerging market countries and reduced inventories of some commodities. Furthermore, inclement weather and poor harvests have affected prices of food, wheat in particular. As a result, the forecast for 2010 commodity prices has been adjusted upwards since the last *Monetary Bulletin*. Prices are expected to continue rising in 2011, although not as dramatically as in 2010.

Inflationary pressures still very limited

Inflation rose markedly in Iceland's main trading partners at the beginning of the year but has subsided again in most countries, and it appears to have peaked for the present in the euro area. Inflationary pressures seem limited, and there are no prospects of a change in the next few months, as there is still considerable slack in the goods and labour markets.

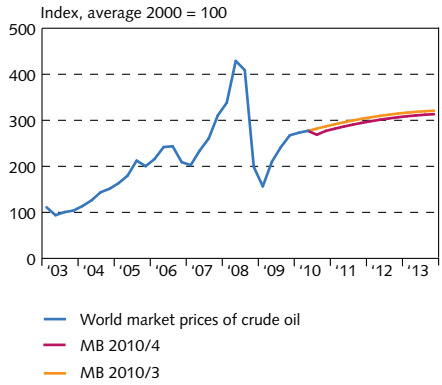
In the US, the inflationary pressures felt at the beginning of the year have largely vanished. The housing market has sustained another setback and unemployment is high; therefore, there is little that could push prices upwards in the near future. Inflation in the US is projected at 1.6% for 2010 as a whole. In the euro area, inflation peaked at 1.8% in September, its highest level in almost two years. Consensus Forecasts assumes that it will hold relatively steady for the remainder of the year and measure 1.5% for the year as a whole. In the UK, inflation peaked at 3.7% in April and, although it has tapered off since then, it remains outside the Bank of England's threshold band. It is not assumed that inflation will rise further this year, and the forecast for 2010 as a whole is 3.1%, but consumption tax hikes will keep it high for a while. Japan is still experiencing deflation, however, although it has slowed down in the wake of increased output growth early in the year. Nonetheless, the forecast is for continuing deflation throughout 2010, due to high unemployment and significant spare capacity in the economy. Inflation rose early in the year in Denmark and Norway, but pressures have subsided as the year has progressed. Inflationary pressures are now considerably less, and inflation is expected to measure just over 2% in both countries this year. In Sweden and Finland,

Chart II-3
Equity prices
Daily data 2 January 2006 - 18 October 2010



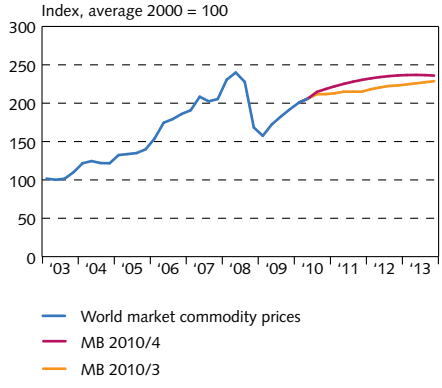
Source: Reuters EcoWin.

Chart II-4
Oil prices
Q1/2003 - Q4/2013



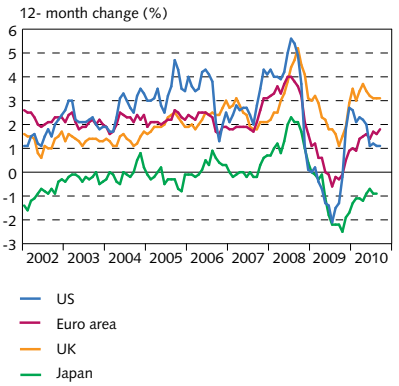
Sources: Bloomberg, Central Bank of Iceland.

Chart II-5
Commodity prices[1]
Q1/2003 - Q4/2013



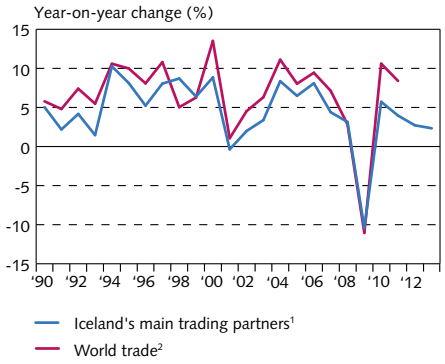
1. Non-oil commodity prices in USD.
Sources: Bloomberg, Central Bank of Iceland.

Chart II-6
Inflation in the USA, UK, Japan and euro area
January 2004 - September 2010



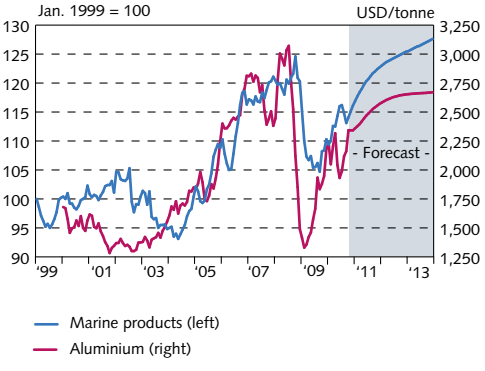
Source: Reuters EcoWin.

Chart II-7
World trade



1. Imports of goods in services in Iceland's main trading partners.
2. Arithmetic average of merchandise import and export volumes in OECD countries and the largest non-OECD countries.
Sources: OECD, Central Bank of Iceland.

Chart II-8
Prices of marine exports and aluminium
In foreign currency



Sources: London Metal Exchange, Statistics Iceland, Central Bank of Iceland.

however, inflationary pressures are extremely limited, with inflation expected to measure just over 1% for 2010.

In view of limited inflationary pressures, the Bank of England, the European Central Bank, and the US Federal Reserve Bank have kept their benchmark interest rates unchanged, but several of Iceland's other trading partners have changed their monetary stance since *Monetary Bulletin* was last published. The Bank of Japan intervened in the foreign exchange market for the first time in six years in order to weaken the yen, and in October it followed by cutting its policy interest rate to zero. At the same time, some other central banks have begun raising interest rates: the Bank of Canada and the People's Bank of China have raised their policy rates by 0.25 percentage points each since the last *Monetary Bulletin* appeared, and Sweden's Riksbank has increased its policy rate by 0.50 percentage points in two steps.

World trade still strong

International trade continued to drive global output growth in the first half of 2010, with emerging Asian economies in the forefront. Both the IMF and the OECD have continued to adjust their world trade forecasts upwards. The IMF's most recent forecast, published at the beginning of October, assumes that global trade will increase by over 11% this year and by 7% in 2011. Imports are projected to rise by nearly 6% this year in Iceland's main trading partner countries, slightly less than was forecast in August.

Marine product prices still rising, but aluminium prices hold steady

Aluminium, silicon metals, and marine products accounted for nearly 80% of Iceland's total goods exports in 2009, and even more in the first eight months of 2010. Price developments in these two main export sectors have therefore had a decisive impact on price developments for exports as a whole, and for developments in terms of trade. The volume of these exports has also had a profound effect on developments in overall export volumes.

Most types of marine products have risen in price in the past several months, although the increase varies according to product type. In the August issue of *Monetary Bulletin*, it was projected that marine product prices would rise by as much as 10% this year and 4% in 2011. Expectations of substantial price hikes in the latter half of 2010 have subsided, but increases are expected to emerge to some extent in 2011. As a result, marine product prices are expected to increase by about 6% in 2010 and over 4% next year. Prices of raw materials for food production have risen significantly in recent months, as has the price of salmon, which is readily substituted for more expensive fish products, such as cod. Both of these factors support rising export prices for the main demersal species.

Aluminium prices are broadly the same as at the beginning of the year, although they have fluctuated somewhat in the interim. They are now expected to be about 28% higher in 2010 than in 2009, in line with the projection in the last *Monetary Bulletin*. Prices are expected to be somewhat stronger over the forecast horizon than in

the last forecast, as the current projection assumes a full 14% increase in 2011-2013 instead of the 12% in the last forecast.

Continuing improvement in terms of trade

Considerably higher export prices in the first half of the year have made a positive impact on terms of trade. Aluminium prices are the major source of the improvement, although marine product prices have contributed as well. Increases in export prices are offset by rising import prices, particularly the prices of imported commodities for the aluminium industry, supplies for miscellaneous commercial activity, and fuel. The price of supplies for aluminium production has a tendency to move in line with the price of aluminium itself, somewhat offsetting the positive effect of higher aluminium prices on terms of trade. Changes in the price of petroleum products make a substantial impact as well. As has been discussed in earlier issues of *Monetary Bulletin*, it is more difficult to estimate terms of trade for services.

According to the forecast, terms of trade improved somewhat in the first half of the year and are projected to exceed 3% for 2010 as a whole. This is somewhat less than was assumed in the last forecast, however, as higher commodity prices in the latter half of the year mitigate the improvement to a degree. Terms of trade are projected to improve by a further 2% in 2011, however, as aluminium and marine product prices are expected to continue rising, although the increases will be counteracted to a degree by higher oil and commodity prices. The improvement is expected to continue in 2012, whereas little change is expected in 2013.

Real exchange rate remains low

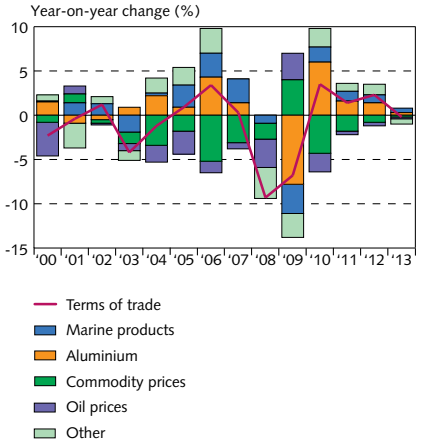
Although the real exchange rate has risen since the publication of the last *Monetary Bulletin*, it is still some 20% below the average for the past 30 years. It is projected to be just over 6% higher year-on-year in 2010 and continue rising in the next few years, although it will remain below its long-term average. Other things being equal, it should support export-driven growth and ensure a trade surplus sufficient to allow the Icelandic economy to tolerate substantial foreign indebtedness. As is discussed below, however, the lower real exchange rate does not seem to have led to any marked rise in goods exports. Exports of services, on the other hand, have increased sharply.

Overall exports increase despite contraction in marine product exports

In the August forecast, it was assumed that marine product exports would contract by about 3% in volume terms in 2010 and by about 4% in 2011. A sizeable mackerel catch is the main reason the contraction in volume is projected to be smaller in 2010 than in previous estimates, or only 1%. On the other hand, pelagic catches will contract substantially more than previously expected, adding to the previously decided contraction in demersal catches. As a result, it is now estimated that marine product exports will contract by about 5% next year.

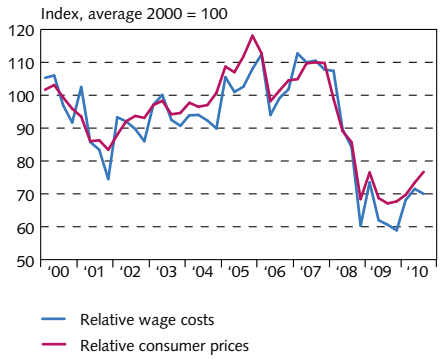
This year's exports of aluminium and ferrosilicon will be broadly in line with the forecast in the August *Monetary Bulletin*, although

Chart II-9
Terms of trade and its main components 2000-2013[1]



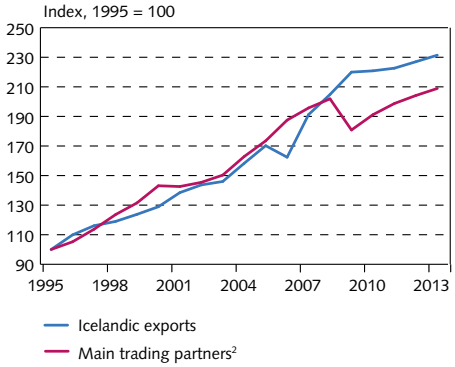
1.Central Bank baseline forecast 2010 - 2013. The contribution of the main sub-indices to year-on-year changes in terms of trade is determined by weighting the annual change in the sub-index concerned together with its weight in the import or export of goods and services. The item "other" is a residual.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-10
Real exchange rate
Q1/2000 - Q3/2010



Source: Central Bank of Iceland.

Chart II-11
World trade and Icelandic exports 1995-2013[1]



1. Central Bank baseline forecast 2010 - 2013. 2. Imports of goods and services in Iceland's main trading partners.
Sources: OECD, Central Bank of Iceland.

production is now expected to increase by 2% instead of the previously projected 3%. However, the current forecast assumes a much smaller volume increase in 2013 because aluminium production in the new aluminium smelter at Helguvík will probably be delayed by a year longer than according to the Bank's previous forecasts (see Box IV-1). Increased production capacity and higher-value production at the Straumsvík smelter will have an offsetting effect, however. Production capacity will increase by nearly 40,000 mtpy, and the increased value due to changes in production methods is equivalent to an estimated 5-6% production increase measured in terms of primary aluminium.

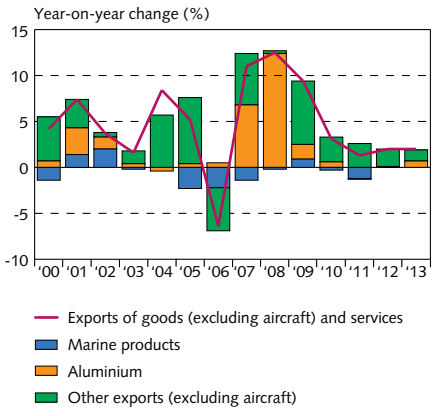
General merchandise and industrial products other than aluminium and ferrosilicon account for one-fifth of goods exports. The outlook for exports of other industrial products is unchanged from the last forecast. This segment of the export sector is supported in large part by production from four large producers of pharmaceuticals, medical equipment, food production equipment, and electrolytic capacitors. Their production is estimated to increase in value by 45-50% at constant exchange rates in 2010 and about 25-30% in 2011. As a result, it is assumed that exports of goods other than marine products, energy-intensive industrial products, and aircraft will increase by 5% this year and by 6-7% in 2011.

Limited scope for export-driven growth in coming years despite low real exchange rate

In spite of positive developments in the prices of Iceland's chief exports, the volume increase in exports of goods and services is expected to be very small in 2010, at only 0.4%. To some extent, the negligible growth in exports is attributable to a negative base effect stemming from the fact that the value of aircraft, ship, and used motor vehicle exports totalled over 32 b.kr. in 2009, or about 6.5% of all goods exports, with aircraft weighing heaviest by far. This year, however, such exports will only total a fraction of that figure, or about 6-8 b.kr. Growth in exports of goods and services excluding aircraft is therefore projected at just over 3% in 2010.

Goods exports are unlikely to grow significantly in the years ahead, mostly because over 80% of goods exports are generated by the country's three aluminium smelters and the marine products sector. The aluminium smelters are producing at full capacity, and the fishing industry's export capacity is limited by the state of the fish stocks and total allowable catches. As a result, the positive effect of a low real exchange rate on the tradable sector's competitiveness will be limited in the short run, in the absence of investment that expands capacity in export sectors. The low real exchange rate enhances the competitiveness of other export sectors, but because they constitute such a small percentage of total exports, the overall impact is relatively small. In addition, slow demand growth in Iceland's main trading partner countries reduces the chance for strong export growth, particularly because many of the countries concerned are trying to contain public debt through strict austerity measures and generate export-driven growth of their own through measures to weaken their currencies.

Chart II-12
Export development (excl. aircraft) and its main components 2000-2013[1]



1. Central Bank baseline forecast 2010-2013.
Sources: Statistic Iceland, Central Bank of Iceland.

It is difficult to quantify the effect of the low real exchange rate and improved competitiveness on exports of other industrial products and general merchandise. As is mentioned above, exports of pharmaceuticals, medical equipment, food processing equipment, and electrolytic capacitors can be expected to increase by as much as 50% this year and by a considerable margin in 2011. To a large extent, this increase is attributable to the fact that the electrolytic capacitor plant is just beginning operation, and other manufacturers, including pharmaceuticals companies, have expanded their production capacity in the recent term. Although the low real exchange rate seems to make a limited impact on other industrial exports at present, it could create conditions for new exports or could boost exports of currently produced goods. But in order to utilise the competitive advantage conferred by the low real exchange rate, companies will have to invest in new or improved equipment, either to increase their capacity or to add value to their existing production. This is unlikely to happen in the near future, and investment has been at an absolute minimum in the recent past, although there have been signs of increased willingness to invest this year (see Section IV). The exception, however, is the new investment in the Straumsvík aluminium smelter, although that project is motivated by economies of scale rather than Iceland's low real exchange rate. Investment in ships and tools and equipment has greatly increased the value of marine product exports in recent years, with the result that the contraction in export volume in the sector has been much smaller than the contraction in total catches. Without further investment, however, further growth will be severely limited. The export sector that has probably benefited most from a lower real exchange rate is services exports, including tourism and transport, which probably still have considerable scope for growth.

In sum, it appears as though further export growth will be somewhat limited in the absence of further investment in export sectors, at least for the short term. As a result, it is difficult to see how export-driven GDP growth in the next few years can be considered a realistic expectation, even if the real exchange rate remains low in a historical context. If export-driven growth is to occur, substantial investment will be needed in sectors with the potential to expand capacity or add value to their products. Changes in the structure and infrastructure of current export operations would also be necessary.[1]

The Central Bank's forecast assumes that exports will increase by only 0.8% year-on-year in 2011, and by 2% on average in 2012-2013. Excluding the effects of transitory aircraft trade, growth will be more in 2011, or 1.3%. Exports of goods other than energy-intensive industrial products and marine products will also grow more during the forecast horizon. Exports excluding aircraft, energy-intensive industrial products, and marine products are projected to increase by 6½% in 2011 and just under 4% in 2012.

1. For further discussion of export-driven growth in Iceland and the impediments that must be overcome, see "Overcoming constraints to growth", in IMF Country Report, no. 10/304 (*Iceland: Selected Issues Paper*), October 2010 (http://www.imf.org/external/pubs/ft/scr/2010/cr10304.pdf).

Table II-1 Exports and main assumptions for developments in external conditions

	Change from previous year (%) unless otherwise stated[1]			
	2010	*2011*	*2012*	*2013*
Exports of goods and services	0.4 (-1.2)	0.8 (1.2)	2.0 (1.8)	2.0
Exports of goods and services, excluding aircraft	3.1 (1.9)	1.3 (1.3)	2.0 (1.8)	2.0
Marine production for export	-1.0 (-3.0)	-5.0 (-4.0)	0.0 (0.0)	0.0
Metals production for export	2.2 (3.4)	-0.5 (0.3)	0.2 (0.7)	2.7
Export prices of marine products	6.3 (9.7)	4.3 (4.4)	3.2 (1.8)	1.9
Aluminium prices in USD[2]	27.7 (27.7)	7.2 (4.5)	6.3 (10.3)	1.4
Fuel prices in USD[3]	25.2 (27.8)	5.3 (6.4)	4.9 (4.5)	2.9
Terms of trade for goods and services	3.3 (5.9)	1.7 (2.0)	2.2 (2.8)	-0.2
CPI growth in main trading partners[4]	1.7 (1.3)	1.6 (1.5)	1.7 (1.5)	1.9
GDP growth in main trading partners[4]	1.9 (1.4)	1.8 (1.9)	1.9 (2.2)	2.1
Short-term interest rates in main trading partners (%)[5]	0.7 (0.7)	2.0 (2.0)	3.4 (3.4)	4.0

1. Figures in parentheses from forecast in *Monetary Bulletin* 2010/3. 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. Based on weighted average forward interest rates of Iceland's main trading partner countries.

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

Box II-1

Foreign direct investment and output growth

For years, economists have attempted to explain why some economies grow faster than others. The findings indicate that factors such as educational level, research and development expenditure, openness to international trade, institutional quality, financial market development, and price stability are all important. In addition, output growth appears to be stronger in economies where foreign direct investment (FDI) is more extensive (see, for example, Li and Liu, 2005). The main reason for this link is that FDI stimulates output growth, both by increasing investment and its efficiency and by transmitting technology, expertise, new management methods, and improved organisation from the investing country to the recipient (see, for example, Balasubramanyam *et al.*, 1996, and DeMello, 1999). As a result, output growth can gain momentum from new inputs into the sectors where investment takes place and from increased productivity generated by new technology or production methods adopted by domestic companies.

Balasubramanyam *et al.* (1996) posit that FDI affects GDP growth more strongly in countries where it stimulates exports than in countries where it is import-substituting. According to Borensztein *et al.* (1998), however, differences in the ability to embrace new technology could explain the variation in the effect of FDI on GDP growth. They conclude that the higher the educational level of the labour force (and thus the greater the human capital), the more FDI will stimulate GDP growth. The findings of Xu (2000) appear to support this: Xu has come to the conclusion that FDI contributes more effectively to increased productivity in developed countries than in developing ones. The current technology level is also an important factor: the impact of investment varies directly with the size of the gap between the technology level of the investing country and that of the recipient. Finally, the findings of Bengoa and Sanchez-Robles (2003) suggest that FDI fosters output growth in the recipient country if human capital is abundant, economic stability prevails, and trade is free.

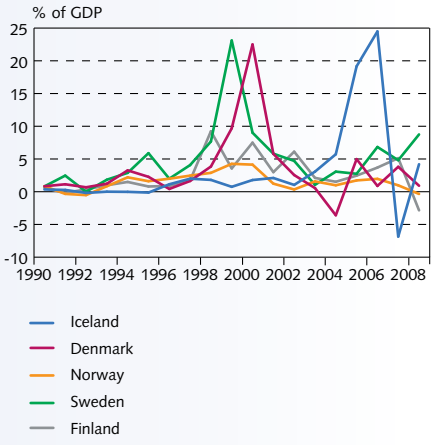
In Iceland, inward FDI has been rather limited in comparison with other developed countries, both in the Nordic region and elsewhere (Chart 1).[1] Inward FDI in Iceland averaged about 1% of GDP

1. Figures from Iceland after 2003 should be interpreted with caution, in part because a portion of that which is registered as inward FDI in Iceland is probably investment by Icelandic individuals and businesses domiciled abroad.

during the period 1990-2003, as opposed to just under 2% in Norway, just under 3% in Finland, 4% in Denmark, and 5% in Sweden. The low percentage in Iceland is due in part to the fact that FDI tends to be attracted to large markets that are open to international commerce (see, for example, Li and Liu, 2005). The Icelandic market is extremely small in international comparison, and research has shown that the scope of international trade in Iceland is below the level expected based on the size of the country (see, for example, Gudmundsson *et al.*, 2000).

Inward FDI in Iceland has been restricted primarily to energy-intensive industry. The vast majority of the production from this sector is exported, which should promote increased GDP growth. However, there is no reason to assume that FDI could not boost GDP growth still further. The level of education is high in Iceland, and it can be assumed that the labour force is willing and able to adopt new technology and expertise. Consequently, a shortage of human capital should not prevent FDI from stimulating further growth in Iceland. Iceland is also considered relatively technologically sophisticated, and while this should reduce the impact of FDI on output growth, the gap in technology level may vary from sector to sector; therefore, it can be assumed that foreign companies will focus on industries that have a relatively low level of technological sophistication and offer the possibility of producing more economically than domestic companies can. As a result, technological sophistication need not dilute the effect of FDI on GDP growth. Moreover, it is worth noting that if FDI is directed at the development of new industries, a high level of technology in existing sectors will be less important, while the highly educated labour force would be utilised to enhance GDP growth. In sum, Iceland appears to be in a strong position to take advantage of inward FDI to bolster GDP growth, irrespective of whether it is directed towards the development of new industries or the enhancement of existing investments.

Chart I
Inward foreign direct investment
1990-2008



Source: Reuters EcoWin.

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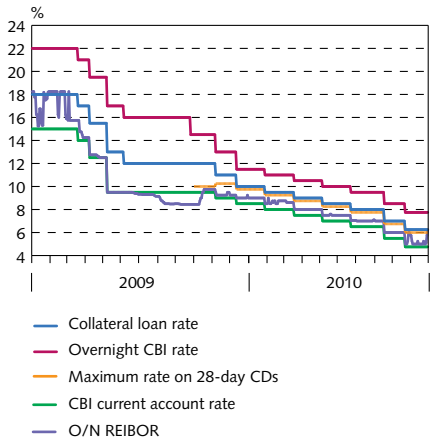
III Financial conditions

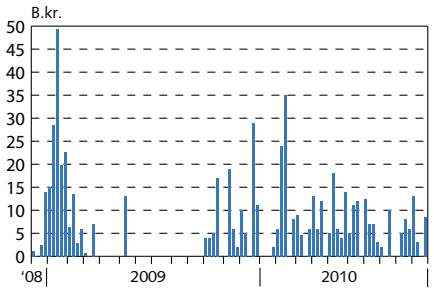
The financial conditions of households, companies, and the public sector have been subject to enormous uncertainty in the wake of the financial crisis. Falling asset prices and rising debt have struck a heavy blow to private sector balance sheets and curtailed households' and firms' access to credit because of reduced collateral value and increased risk aversion among lenders. Moreover, credit institutions and borrowers alike have been faced with great uncertainty about the legality of exchange rate-linked loans and how to handle the interest rate provisions of the loan agreements concerned, although the recent Supreme Court judgment has clarified the matter somewhat. On the other hand, declining interest rates and a stable exchange rate have contributed to improved financial conditions. Market conditions remain vulnerable, however; turnover on the interbank market for krónur and foreign currency is limited, and the progress that has been made is still fragile.

Chart III-1
Central Bank of Iceland interest rates and short-term market interest rates
Daily data 1 January 2009 - 29 October 2010



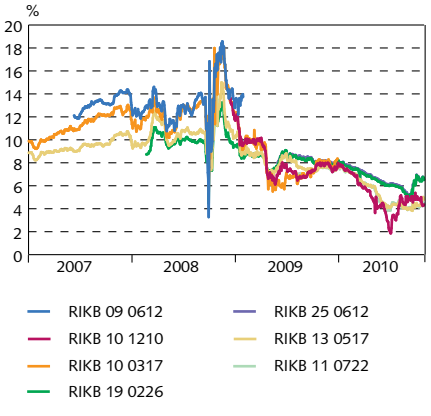
Source: Central Bank of Iceland.

Chart III-2
Turnover on interbank market for Icelandic Krónur
Weekly data 5 December 2008 - 29 October 2010



Source: Central Bank of Iceland.

Chart III-3
Long-term nominal Treasury bond yields
Daily data 3 January 2007 - 29 October 2010



Source: Central Bank of Iceland.

Central Bank interest rates continue to fall

Interest rates have been declining since the last issue of *Monetary Bulletin* was published, concurrent with reductions in Central Bank rates. Since the August issue appeared, the Bank's rates have been lowered by 1.75 percentage points. Prior to this publication, the current account rate was 4.75%, the maximum rate on 28-day certificates of deposit (CD) 6%, the seven-day collateralised lending rate 6.25%, and the overnight lending rate 7.75%. The two most recent interest rate cuts were larger than the previous ones, reflecting more rapid disinflation than forecasts suggested, falling CDS spreads on Icelandic financial assets, and the appreciation of the Icelandic króna.

Interbank rates at the bottom end of the Central Bank interest rate corridor

In their transactions with the Central Bank in wake of the financial crisis, the commercial banks have almost exclusively deposited funds with the Central Bank, either by depositing funds to their current accounts or by purchasing 28-day CDs. Since October 2009, when the Central Bank began issuing CDs to absorb excess banking system liquidity, interbank overnight rates have hovered just above the Bank's current account rate, which forms the floor of the interest rate corridor. This development reflects the extremely limited demand for overnight loans or collateralised loans, which dramatically limits those interest rates' impact on market rates. In the minutes of the Central Bank Monetary Policy Committee's (MPC) September meeting, the MPC expressed its desire to move short-term market rates closer to the centre of the interest rate corridor. Interest rates did move towards the middle of the corridor soon thereafter but subsequently slid down to the bottom once again. Broadly speaking, these changes in short-term market interest rates reflected unforeseen fluctuations in financial system liquidity.

Monetary restraint has eased

The reduction in Central Bank interest rates since the August *Monetary Bulletin* has been larger than the reduction in the main measures of inflation and inflation expectations, and the real interest rate level has fallen as a result (see Table III-1). Based on the twelve-month rise in the consumer price index, the Bank's real interest rate is now 2%, having declined by 0.2 percentage point since before the publication of the August *Monetary Bulletin*. Real interest rates as measured in terms of inflation expectations have fallen as well, with the exception of household inflation expectations.

Table III-1 Monetary policy stance (%)

Real interest rates based on:[1]	*Current level of restraint (27/10)*	*Change from MB 2010/3 (16/8)*	*Change from MB 2009/4 (4/11)*
Twelve-month inflation	2.0	-0.2	2.0
Three-month seasonally adjusted inflation	2.6	-6.8	1.8
Corporate inflation expectations 12 months ahead	2.8	-1.2	-2.7
Household inflation expectations 12 months ahead	-0.6	0.2	-0.4
One-year breakeven inflation rate[2]	2.6	-2.4	-3.1
Central Bank inflation forecast[3]	3.4	-1.0	-1.2
Risk-adjusted three-month interest rate differential based on:			
Historical exchange rate volatility[4]	0.9	-0.2	-0.2
Sovereign CDS spreads[5]	1.9	-0.5	-3.1

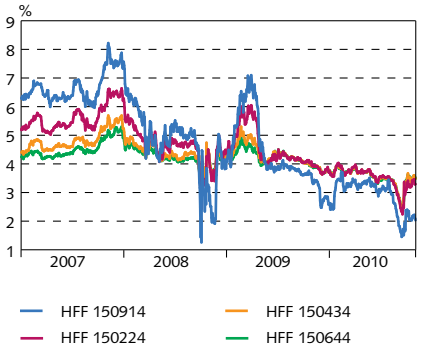
1. From October 2009 onwards, the effective Central Bank nominal policy rate is the average of the current account rate and the maximum rate on 28-day CDs. 2. The one-year breakeven inflation rate, based on the difference between the nominal and indexed yield curves (five-day moving average). 3. The Central Bank forecast of twelve-month inflation four quarters ahead. 4. The ratio of the three-month interest rate differential and the three-month standard deviation of the EURISK exchange rate. 5. The interest rate differential in terms of the difference between short-term rates in Iceland and trade-weighted foreign interest, adjusted for the difference in CDS spreads (five-day moving average).

Strong bond market reaction to Central Bank interest rate decisions

When the Bank's rates were cut by 1 percentage point in August, the reduction was larger than the market had expected, and bond market yields fell markedly thereafter. When the Bank's interest rates were cut by an additional 0.75 percentage points in September, the drop in bond yields reversed for the most part. These fluctuations are probably due to the market's interpretation of the rationale for the interest rate decisions. It appears as though the market interpreted the MPC's August decision to mean that domestic considerations had gained in importance and that capital account liberalisation was not to be expected in the near term. This fuelled further expectations of a steeper reduction in interest rates: for example, yields on indexed Housing Financing Fund (HFF) bonds fell sharply, and yields on the HFF-44 series dropped to an unprecedented 2.5%. After the September interest rate decision, the MPC's message was seemingly interpreted as indicating that the next step in capital account liberalisation would come sooner than previously expected, and that monetary easing would proceed more slowly in the near term. Indexed bond yields did not reverse entirely after the August meeting, however, and currently lie in the 2.2-3.5% range, as opposed to 2.7-3.4% when the last *Monetary Bulletin* was issued.

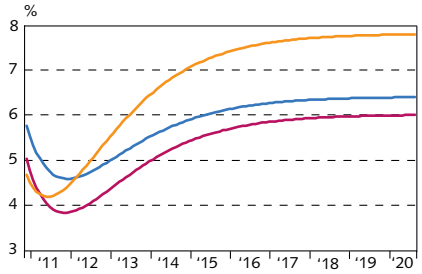
Developments in nominal Treasury bond yields have been affected by the last two interest rate decisions. In general, yields have

Chart III-4
Yields on indexed long-term bonds
Daily data 3 January 2001 - 29 October 2010



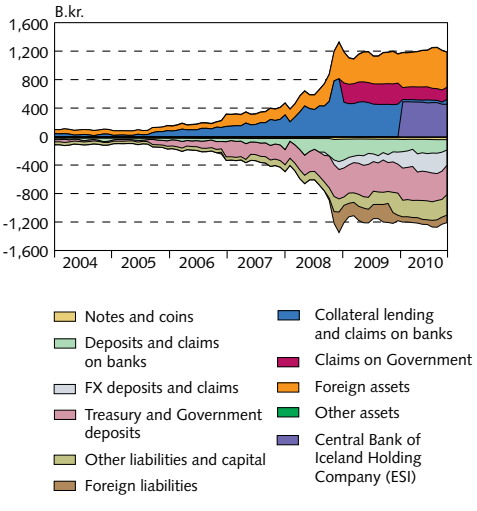
Source: Central Bank of Iceland.

Chart III-5
Forward non-indexed interest rates on Treasury bond market



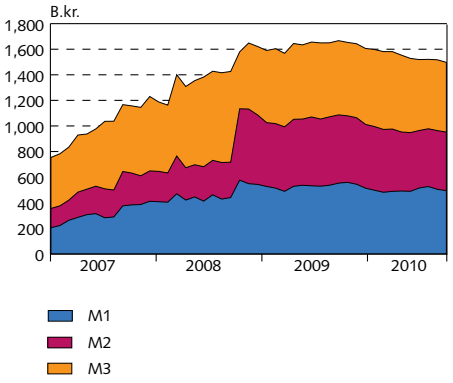
Source: Central Bank of Iceland.

Chart III-6
Central Bank of Iceland balance sheet
Month-end January 2004 - September 2010



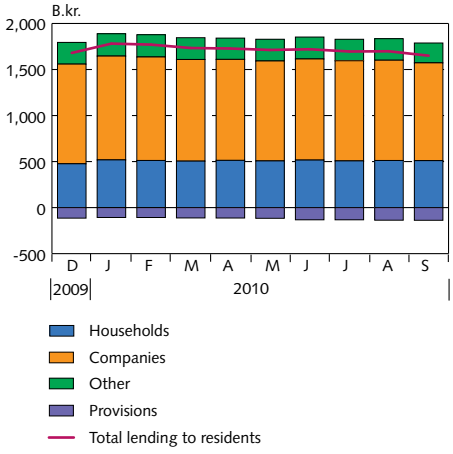
Source: Central Bank of Iceland.

Chart III-7
Money holdings
January 2007 - September 2010[1]



1. Data from October 2008 are preliminary.
Source: Central Bank of Iceland.

Chart III-8
DMBs' lending by sector[1]
December 2009 - September 2010



1. Lending of the new DMBs is at purchase value.
Source: Central Bank of Iceland.

tended downwards in line with Central Bank interest rates, but since the September decision was announced, they have risen anew, in spite of declines in short-term rates. The longer end of the yield curve rose noticeably. Nominal bond yields now lie between 4.5% and 6.5%, about 0.3-0.6 percentage points higher than in August, when *Monetary Bulletin* was last published.

Further rate cuts anticipated, but higher interest rates are expected in the long run

Based on forward interest rates (Chart III-5), it is clear that market agents expect further interest rate cuts in coming months. This is consistent with MPC statements, which have asserted that a constant exchange rate and continuing disinflation should provide scope for further monetary easing. The longer end of the yield curve is rather higher than it was in late summer and mid-September 2010, and the shorter end indicates expectations of less monetary easing than before.

Central Bank balance sheet still reflects the impact of the financial crisis

The Central Bank balance sheet expanded significantly just before and after the financial crisis struck. At first the expansion was due to increased collateralised lending, but after the collapse the growth was due mainly to increases in foreign reserves. The composition of the assets changed markedly as well. Collateral submitted by financial institutions for collateralised loans was appropriated, and the Treasury issued a debt instrument to the Bank to compensate for losses it sustained when the financial institutions failed. A new holding company, the Central Bank of Iceland Holding Company (ESÍ), was established, and many of the assets related to the old banks were transferred to it.

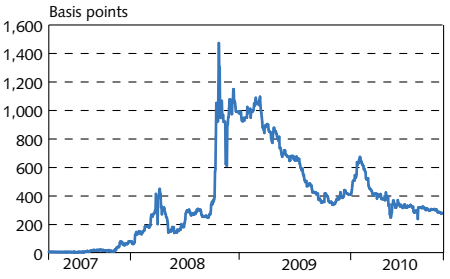
Money supply shrinks and credit creation is limited

Just as the Central Bank balance sheet did, the money supply grew substantially before the collapse of the banks, and even more markedly afterwards. Broad money (M3) as a share of GDP grew from 55% at year-end 2003 to 116% at its peak in November 2008. The money supply has contracted somewhat in recent months. So far this year, between 13-18% of money holdings have been in foreign currency accounts in the banking system; thus part of the contraction is attributable to the appreciation of the króna during the year. Most other components of the money supply have contracted as well. The contraction in banking system deposits stems largely from households, whose deposits have shrunk by about 69.6 b.kr., or over 9%, since the beginning of the year. Over that same period, total deposits held by residents have declined by 90.7 b.kr. Corporate deposits have contracted by about 4.4 b.kr., or 1.3%. The downturn is actually greater in most business sectors, however, and the contraction in their deposits is offset to a large extent by an increase in service and transport sector deposits.

Data on banking system credit do not indicate that lending has increased to any notable degree. Figures for banking system lending

are coloured, however, by the restructuring of the banking system, and a large share of the banks' loans are exchange rate-linked in some way. As a result, it is particularly difficult at present to determine exactly how credit creation has developed, but the figures that are available suggest that lending growth is very limited. This is not surprising, even though interest rates have declined, as the great uncertainty about private sector balance sheets tends to reduce lending activity, as does the general uncertainty about the economic outlook.[1] This situation is not peculiar to Iceland. In the euro area, for example, credit creation has hindered economic recovery, even though lending terms have been improving recently This is typical of contractionary periods, particularly in the wake of financial crises.

Chart III-9
CDS spread for Iceland
Daily data 29 March 2007 - 29 October 2010

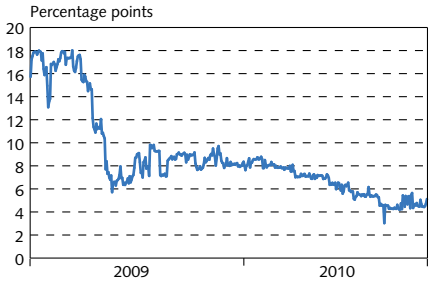


Source: Bloomberg.

Risk premia on sovereign debt have remained stable

It is difficult to assess with any precision the attitude of non-residents with króna holdings towards the risk attached to Icelandic financial assets, but the CDS spread on the Republic of Iceland's obligations has been used as the chief indicator. It should be noted, however, that trading with credit default swaps is very limited and movements in the spreads should therefore be interpreted with caution. Iceland's sovereign CDS spread has remained relatively stable at around 3 percentage points since *Monetary Bulletin* appeared in August. Recent developments in several indebted European countries have been cause for concern among investors, and Ireland, Greece, and Portugal have seen their sovereign credit spreads rise, although Iceland's spread has not followed that trend. The progress made under the Government-IMF programme probably plays a role in this, but other measures to increase the Central Bank's foreign reserves or lower the Government's foreign debt, such as prepayment of debt, the agreement with Banque centrale du Luxembourg to purchase Treasury Eurobonds and the subsequent sale of those bonds to domestic pension funds, and the sale of FIH bank in Denmark, have helped. Because Iceland's CDS spread has held relatively stable, the risk-adjusted short-term interest rate differential has narrowed broadly in line with the reduction in Central Bank interest rates. The long-term interest rate differential with German ten-year Treasury bonds, a typical risk-free benchmark, increased following the September interest rate decision, after having declined ever since mid-2009. The wider differential is due to the increase in long-term interest rates in the wake of the above-described unrest in the domestic bond market.

Chart III-10
Short term interest rate differential[1]
Daily data 2 January 2009 - 29 October 2010

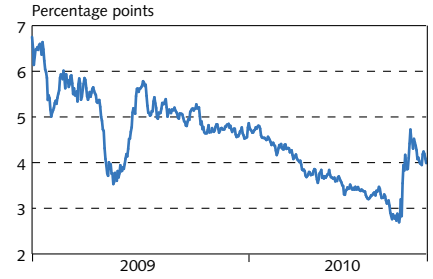


1. Differential between yield on 3-month Treasury bills in Iceland and Germany.
Sources: Reuters EcoWin, Central Bank of Iceland.

Significant changes in key currency crosses

Since *Monetary Bulletin* was published in August, the exchange rate of the króna has remained relatively stable in trade-weighted terms, although the króna has moved against individual currencies. According to the trade-weighted index, however, the króna has appreciated by 13% since the beginning of the year and by 14% over the past twelve months. Nonetheless, the króna is somewhat weaker against the euro

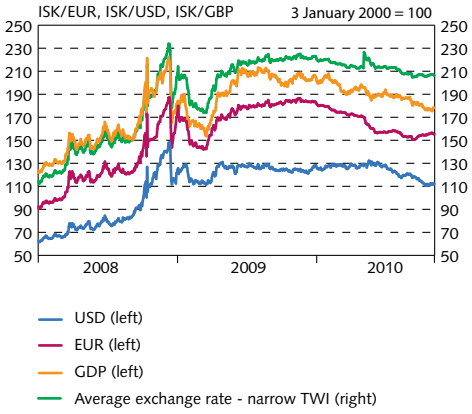
Chart III-11
Long term interest rate differential[1]
Daily data 5 January 2009 - 29 October 2010



1. Differential between yield on RIKB 19 and 10-year Treasury bonds in Germany.
Sources: Reuters EcoWin, Central Bank of Iceland.

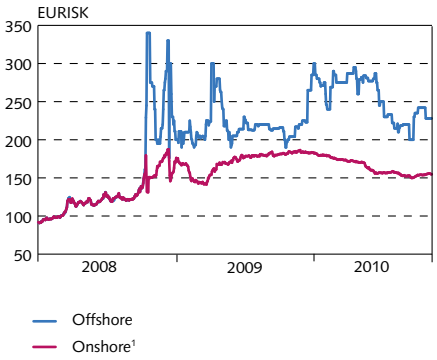
1. See, for example, International Monetary Fund (2010), *World Economic Outlook*, October 2010.

Chart III-12
Exchange rate of the króna
Daily data 3 January 2008 - 29 October 2010



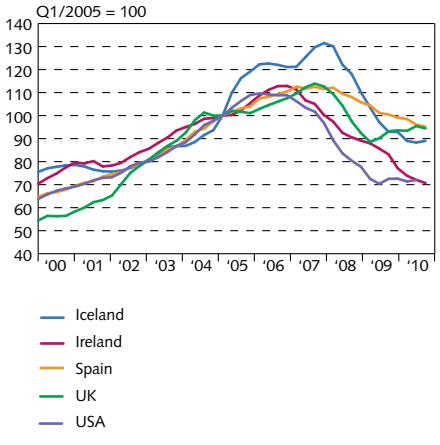
Source: Central Bank of Iceland.

Chart III-13
The ISK exchange rate against the euro
Daily data 1 January 2008 - 29 October 2010



1. The onshore rate is the daily closing rate.
Sources: Reuters, Central Bank of Iceland.

Chart III-14
Real house prices in selected countries
Q1/2000 - Q3/2010



Sources: Reuters EcoWin, Statistics Iceland.

than it was in August. On the other hand, the US dollar fell markedly in September, from over 120 kr. at end-August to just under 112 kr. shortly before the publication of this *Monetary Bulletin*. The depreciation of the dollar is probably due to mounting fears of a setback in US economic recovery and expectations that US interest rates will remain low for longer than previously thought.

The offshore EURISK exchange rate has strengthened by almost 9% since August, to about 228 kr. just before this *Monetary Bulletin* was published. It is appropriate to interpret price formation in the offshore market with caution however, as trading is sparse and it is not uncommon for several days to pass without a single trade.

The Central Bank has not sold foreign currency since November 2009. Concurrent with the June interest rate decision, the Bank announced its intention to begin regular foreign currency purchases so as to expand its non-borrowed reserves. These purchases began at the end of August. The Bank's aim is to conduct the purchases so as to minimise the impact on the exchange rate of the króna. The regular purchases amount to 1.5 million euros each week. Since it began buying foreign exchange, the Bank has purchased a total of 12 million euros, or 1.8 b.kr. In addition to its regular purchases, the Bank has also bought another 8 million euros, or 1.2 b.kr. in ad hoc transactions.

Modest ISK appreciation expected

The exchange rate of the króna is very low in a historical context, and the real exchange rate is considerably below its long-term average in spite of some appreciation during the year. According to the baseline forecast, the real exchange rate will rise marginally during the forecast horizon, largely through a rise in the nominal exchange rate. It is assumed that the EURISK exchange rate will average about 162 kr. this year and reach about 154 kr. by year-end. Due to growing Central Bank foreign exchange reserves and a trade surplus, the króna is expected to rise somewhat more, to about 150 kr. per euro by the end of the forecast horizon.

Steep correction in house prices

In part, households' post-crisis financial difficulties stem from falling real house prices. The problem is not limited to Iceland, however, and can be found in many of the countries hit hardest by the global financial crisis (see Chart III-14). In the countries included in the chart, real house prices rose sharply in the years prior to the financial crisis. After the financial crisis took hold, real prices fell again, approaching the levels seen early in the decade. The development in Iceland was therefore not unique, although the upturn here was more pronounced than in other countries, partly because of structural changes in the mortgage market in 2004. In Ireland, the UK, and the US, real house prices are now similar to those early in the decade. Because of the strong impact the financial crisis has made in Iceland, real house prices can be expected to fall further before a permanent turnaround ensues; however, they are expected to fall less sharply than was projected in August.

Private sector financial conditions have improved, but uncertainty persists

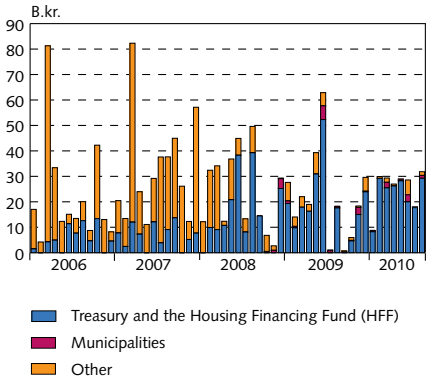
Lending rates have declined concurrent with reductions in Central Bank interest rates. The capital controls have provided the króna with important shelter, which also contributes to rapidly declining inflation. This reduces the uncertainty about household and corporate balance sheets; however, as is discussed above, there has been no marked turnaround in lending.

Some of the uncertainty about households' financial position has been eliminated with the recent Supreme Court judgments on the legality of exchange rate-linked loans and the interest rates that shall apply to such loans. Other things being equal, this should clarify households' debt position, which in turn should improve credit conditions. On the other hand, real estate prices have yet to bottom out. The market was nonetheless much more active in September, perhaps as a result of improved conditions for a part of the household sector, as households' post-crisis debt position varies greatly. It can be assumed that the balance sheets of some households will show signs of the mismatch between house prices and the general price level for some time to come.

At this point, it is more difficult to assess whether the Supreme Court decisions on exchange rate-linked loans will affect corporate balance sheets, as it remains uncertain to what extent they apply to exchange rate-linked loans to businesses. For companies with foreign-denominated revenues, borrowing from abroad is a normal part of their operations, and it can be assumed that they will be offered favourable interest rates in foreign credit markets, insofar as credit is available to them. Companies with revenues in domestic currency and foreign-denominated debt benefit from the recent stability of the króna, although their access to refinancing of foreign loans is also quite limited. Declining domestic interest rates should make working capital less expensive, and low inflation helps companies with indexed debt. In spite of this, corporate debt restructuring in cooperation with financial institutions appears to be progressing slowly; moreover, demand is still limited and the overall economic outlook is quite uncertain. Erosion of collateral value also limits firms' access to credit, and it can be assumed that financial institutions' willingness to lend to companies is hampered by the uncertain outlook. Furthermore, in some sectors, spare capacity due to extensive pre-crisis investment reduces companies' desire to seek out funding for new development.

The fact that, since October 2008, public entities have been virtually the only issuers of marketable bonds is a sign of companies' difficult financial conditions and limited financial need. Of 202.5 b.kr. in bonds issued in 2010, the Treasury and the HFF accounted for 184 b.kr., and the municipalities issued another 7 b.kr. Bonds issued by other entities therefore totalled only 11.2 b.kr.

Chart III-15
Bond auctions
January 2006 - August 2010

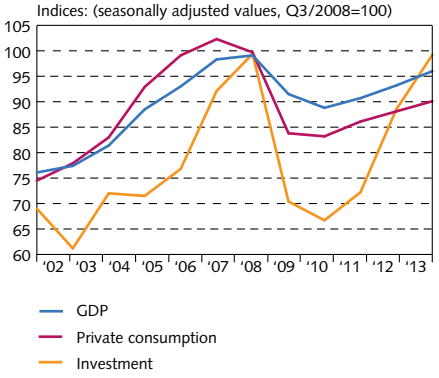


Source: Central Bank of Iceland.

IV Domestic demand and production

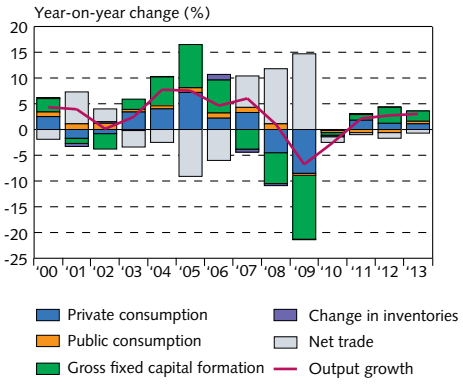
A number of factors suggest that the Icelandic economy has reached the bottom of a deep recession and is now beginning to recover. The forecast in this *Monetary Bulletin* assumes that the turning point was reached in mid-2010, but the recovery is likely to be a slow one. From 2009 to 2013, output growth is forecast to average 1.3% per year, far below the average in recent decades. The real exchange rate of the Icelandic króna is expected to be very favourable for Icelandic exports during the forecast horizon. This is based on the experience of many countries following a currency crisis, but it also takes into account the fact that the historical real exchange rate of the króna was higher than its estimated equilibrium real exchange rate. In spite of this, the forecast assumes that growth in private consumption and investment, and not net exports, will be the driver of output growth. It was net exports that prevented a contraction in GDP in 2008 and mitigated the effects of the enormous contraction in investment and private consumption in 2009.[1] Recently, the Icelandic economy has developed differently from other countries in that exports contributed to mitigating the contraction (see Section II), but their contribution to renewed growth is expected to be small.

Chart IV-1
Indices of GDP, private consumption and investment[1]
Annual averages 2002-2013



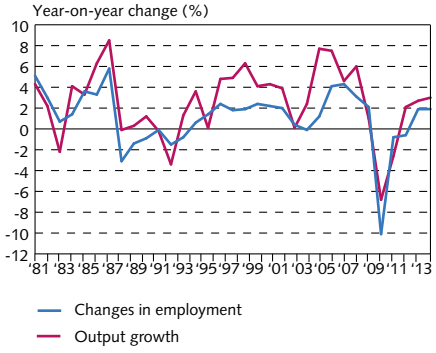
1. Central Bank baseline forecast 2010 - 2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-2
Output growth and contribution of underlying components 2000 - 2013[1]



1. Central Bank baseline forecast 2010-2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-3
Employment and output developments 1981-2013[1]



1. Central Bank baseline forecast 2010-2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Investment probably underestimated in Statistics Iceland's preliminary figures for Q2 ...

The Central Bank's August forecast assumed that investment would contract by nearly 13% year-on-year in Q2/2010, but according to the preliminary figures published by Statistics Iceland in September, the contraction measured a full 26%. At the same time, investment figures for Q1/2010 were adjusted upwards from 1.1% to 2.4%.

Statistics Iceland's revisions of figures on investment – and actually, revisions carried out by other countries' statistical bureaus as well – usually lead to upward adjustment from the first numbers to the final ones.[2] Since the publication of the national accounts for Q2, information has surfaced – both leading indicators on investment and information on investment in energy-intensive industry in the first half of the year – that indicates that investment is underestimated in the Statistics Iceland figures for Q2 and will be revised upwards in December, when the national accounts are published next. It is considered likely that the contraction in Q2 was 15%, which is much closer to the Central Bank's August forecast.

... and the Q2 contraction in GDP is probably less than previously assumed

In the August forecast, GDP was projected to shrink by just over 4.3% year-on-year in Q2/2010. Preliminary numbers from Statistics Iceland indicated, however, that GDP had contracted by a full 8.4%.

1. More detailed information concerning the macroeconomic forecast can be found in Appendix 1 on p. 62.
2. In Central Bank Working Paper no. 39 from 2008, "Accuracy in forecasting macroeconomic variables in Iceland", Ásgeir Daníelsson shows that Statistics Iceland's first figures on annual investment during the period 2000-2006 underestimated growth by 3 percentage points. A comparable revision of GDP growth amounts to just under one percentage point.

At that time, Statistics Iceland revised its figures for Q1, which show the contraction in GDP to be 6.3% and not 6.9%. Statistics Iceland also published new figures for 2009, which indicated that GDP had contracted by 6.8% instead of the previously estimated 6.5%.

According to these indicators of underestimation of investment, it is likely that the Q2 contraction in GDP will be revised to 6.9%, which is closer to the Bank's August forecast.

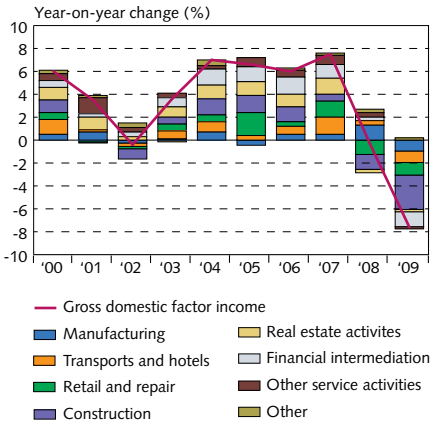
Price fluctuations in inventory changes also complicate interpretation of the national accounts

Iceland's national accounts have had to deal with problems related to the value of inventory changes. Today, Statistics Iceland tracks exported inventories in the fishing and heavy industry sectors, imported inventories of inputs for heavy industry, and oil.[3] These inventories have changed markedly in the recent term. Prices have fluctuated somewhat as well, which could cause peculiar developments in the measured volume of inventories. Because inventories can both increase and decrease quarter-on-quarter, it can happen that an inventory increase at current prices is measured as a decrease in inventories at constant price levels. This is precisely the case with the national accounts for the first two quarters of 2010: changes in inventories in Q1 are 8 b.kr. at variable price levels but -1.2 b.kr. at constant price levels. The average price of the change in inventories was therefore negative. In Q2, inventories contracted by 10.5 b.kr. at current prices but grew by 1.7 b.kr. at constant prices. Even though the change in inventories in Q2 was positive, its contribution to GDP during the quarter was negative, as the average price of inventory changes in 2009 was negative. The contribution to GDP of an increase in inventories measuring 1.7 b.kr. at constant prices was -3 percentage points in Q2. In Q1, the contribution to GDP of a decrease in inventories measuring 1.2 b.kr. was positive by 2.1 percentage points.[4]

New figures on 2009 disposable income

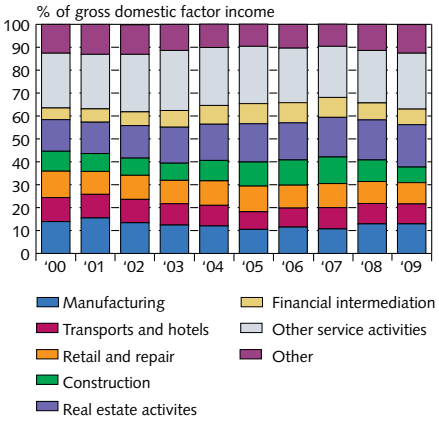
New Statistics Iceland figures on households' disposable income in 2009 show that real disposable income contracted by 17.7% year-on-year,[5] somewhat less than in the August issue of *Monetary Bulletin*, which projected a decline of 20.3%. High unemployment affects figures on disposable income, as a large contraction in wages can be seen concurrent with a 30% increase in transfer income, due mostly to increased unemployment benefits and withdrawals of third-pillar pension savings. Pension fund payouts in 2009 totalled 21.7 b.kr., or 2.8% of disposable income and 1.4% of GDP. Households' trans-

Chart IV-4
Gross domestic factor income developments and contribution of each sector[1]



1. Gross domestic factor income is equal to gross domestic product minus indirect taxes and plus production subsidies. Gross domestic factor income is estimated on each sector's production.
Sources: Statistic Iceland, Central Bank of Iceland.

Chart IV-5
Share of gross domestic factor income by sector 2000 - 2009[1]

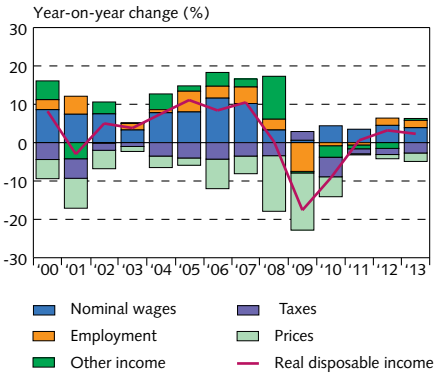


1. Gross domestic factor income is equal to gross domestic product minus indirect taxes and plus production subsidies. Gross domestic factor income is estimated on each sector's production.
Sources: Statistic Iceland, Central Bank of Iceland.

3. In this respect, Iceland differs from other countries, where large parts of total inventories consist of products intended for the domestic market.
4. It should be noted that Statistics Iceland uses the chain-volume approach, which is considered best for calculation of GDP at constant price levels. In Statistics Iceland data on quarterly national accounts, which extend back to Q1/1997, it is only in the first and fourth quarters of 1997 and the year 2009 as a whole that inventory changes at constant and variable price levels carry different mathematical signs.
5. Statistics Iceland uses the consumer price index to calculate disposable income at constant prices. This measure indicates that real disposable income contracted by 15.5% between 2008 and 2009. The Central Bank uses the private consumption price index in its calculations and forecasting of disposable income at constant prices.

Chart IV-6

Developments in real disposable income and its maincomponents 2000-2013[1]

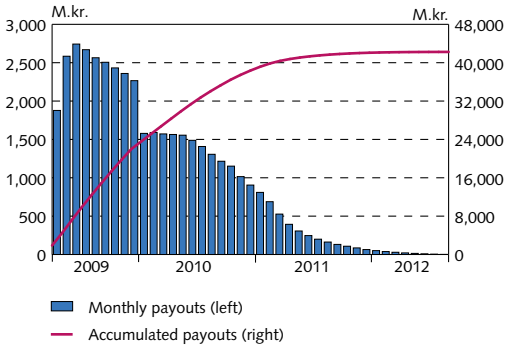


1. Central Bank baseline forecast 2010-2013. The contribution of the main underlying factors in the yearly changes in real disposable income is calculated based on each factor's weight in disposable income. The combined contribution of underlying factors does not add up to the total change due to rounding and incomplete income accounts for households from Statistics Iceland.
Sources: Statistic Iceland, Central Bank of Iceland.

Chart IV-7

Third-pillar pension fund payouts[1]

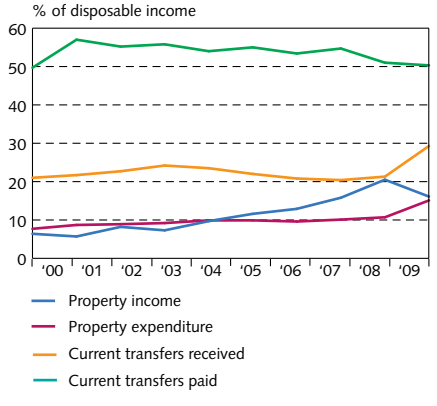
April 2009 - August 2012



1. The chart shows monthly payouts and accumulated payouts from third-pillar pension funds according to applications filed by end-August 2010.
Sources: Directorate of Internal Revenue, Central Bank of Iceland.

Chart IV-8

Income and expenses as a percentage of disposable income 2000-2009



Source: Statistics Iceland.

fer income will probably decline in the near term because of falling unemployment and reduced pension savings withdrawals. The newly drafted National Budget bill for 2011 authorises further withdrawals of third-pillar pension savings. This additional authorisation is estimated to generate payouts of 10-11 b.kr. in 2011. After taxes, it will be equal to almost 1% of year-2011 private consumption. Chart IV-7 shows pension savings payouts approved on the basis of previous authorisations, which totalled, after taxes, about 1½% of households' estimated disposable income and nearly ½% of 2011 disposable income. Contributions to third-pillar pension savings have also fallen sharply, from 33.3 b.kr. in 2008 to 26.2 b.kr. in 2009, a decline of 7.1 b.kr. Estimated third-pillar pension assets totalled 288.4 b.kr. at year-end 2009.

Households' investment income (interest and dividends) declined by 26% between 2008 and 2009, while expenses (interest expense) rose by 34%. The difference between these two items therefore narrowed significantly in 2009. Nonetheless, investment income was slightly higher than investment expenses in 2009, as has been the case since 2005. Before that time, expenses were always higher – and sometimes much higher, as can be seen in Chart IV-8. As a proportion of disposable income, transfer outlays (taxes, payroll taxes, pension contributions, and other expenses of a similar nature) rose very rapidly in the late 1990s but have declined in the past 10 years.

Private consumption expected to recover slowly

Households responded to falling disposable income, deteriorating asset values and spiralling debt, rising unemployment, and increased economic uncertainty by drastically reducing consumption and increasing their saving. It is now estimated that private consumption per capita was 24.5% less in 2009 than in 2007. Real disposable income per capita declined by 19.5% over the same period. A smaller contraction in disposable income than in private consumption means that households have stepped up their saving. A part of this saving is probably forced due to high debt service and limited access to new credit.

As 2009 progressed, private consumption began to contract more slowly, and in Q4/2009 it shrank by 0.6% year-on-year. According to Statistics Iceland figures, the contraction continued in the first two quarters of 2010. On the other hand, seasonally adjusted private consumption rose marginally between quarters in the latter half of 2009 but has declined again in 2010. The contraction between Q1 and Q2/2010 measured 2.4%. Some important high frequency leading indicators – payment card turnover and planned big-ticket purchases – suggest that a turnaround is in the offing in the second half of the year and that private consumption will begin to recover, albeit slowly. Chart IV-10 shows that payment card turnover as a whole has grown slightly in Q3, or 1.4% year-on-year. The index for planned big-ticket purchases has been on the rise as well, showing a 27% increase year-on-year in September.[6] A sharp drop in Capacent

6. The index of planned big-ticket purchases is published quarterly, concurrent with the Capacent Gallup measurement of consumer expectations. The polls survey plans for house purchases, motor vehicle purchases, and overseas travel six months ahead.

Gallup's Consumer Sentiment Index in October points in the other direction. In October, this index reached its lowest point since August 2009 after significant increases in recent months. To some degree, the plunge probably reflects the demonstrations launched at the opening the Parliamentary session and elsewhere, and the presentation of the Government's budget proposal early in the month.

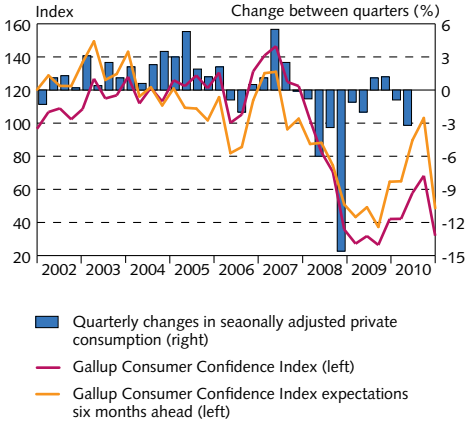
The Central Bank forecast assumes that private consumption will grow slowly in the next few years, hovering around 50-52% of GDP during the forecast horizon, somewhat below its historical average (see Chart IV-12). The forecast also assumes that total consumption (private and public consumption combined) will be about 74-77% of GDP, also somewhat below the historical average. This forecast is based on the assumption that, for the long term, equilibrium on the external account must be ensured and GDP must therefore amount roughly to the sum of investment and total consumption. The investment ratio has fluctuated widely and will be determined by what type of economic sectors flourish in the future. If future sectors are as capital-intensive as the existing ones, the long-term ratio of investment to GDP will exceed 20%. This means that the long-term ratio of public and private consumption to GDP must be below 80%. It is possible to change the ratio between private consumption and public consumption – that is, the portion of consumption that is paid directly by households and the portion paid through taxes – but if total consumption as a share of GDP reaches or exceeds 80% for more than a short time, imbalances in the form of a current account deficit and foreign debt accumulation will result.

Uncertainty about the scope and effect of debt restructuring

One of the authorities' most important tasks in the economic recovery is private sector debt restructuring, because without it there is the risk that recovery will be both slower and later in coming. Since the fall of 2008, the authorities have adopted a range of measures allowing debtors to defer a portion of their past-due loan payments, thus temporarily reducing their debt service. Some borrowers have taken advantage of these measures. The same applies to the various forms of debt mitigation that have been offered.

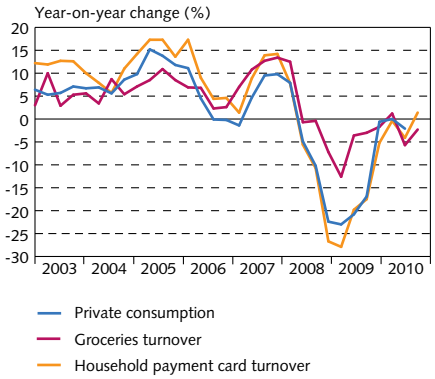
On 16 September 2010, the Supreme Court of Iceland ruled on how to amend the provisions of exchange rate-linked loans that were declared unlawful during the summer. The Court concluded that such loans should bear the lowest interest rates published by the Central Bank of Iceland. It is not yet clear how broad an impact the judgment will have; for example, it is not clear how many types of exchange rate-linked loans are illegal. However, the Supreme Court judgments from this summer state that it is illegal to loan money in Icelandic krónur and link repayment of the loan to foreign currency exchange rates. On the other hand, the Court decided that loans that are specified in foreign currency and whose repayments are specified in foreign currency are legal. Such loans are subject to legal uncertainty, however, if the loan amount is disbursed in krónur and the repayments are also in krónur. Loan agreements containing clauses linking the loan to foreign currencies take many forms; as a result, there is enormous uncertainty about how many are illegal and how many are not.

Chart IV-9
Private consumption and consumer confidence
Q1/2002 - Q4/2010[1]



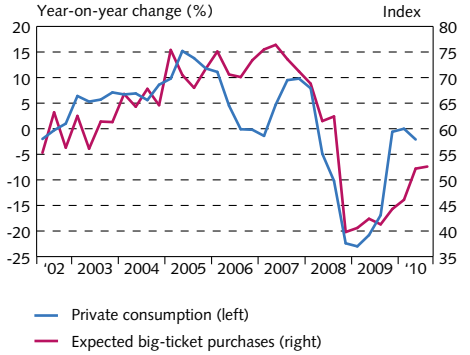
1. Three-month average of Gallup Consumer Confidence Index. Value for Q4/2010 is for October. Figures for private consumption are only available until Q2/2010.
Sources: Capacent Gallup, Statistics Iceland.

Chart IV-10
Private consumption, groceries turnover and payment card turnover[1]
Q1/2003 - Q3/2010



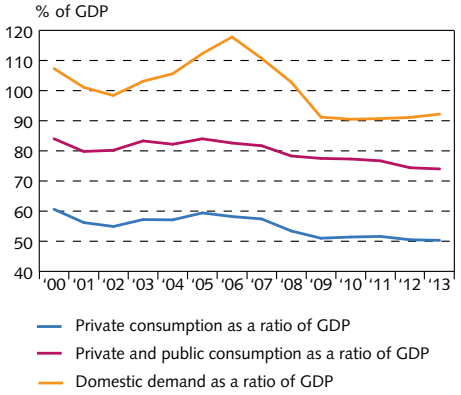
1. Figures for private consumption are only available until Q2/2010.
Sources: Federation of Trade and Services, Statistics Iceland, Central Bank of Iceland.

Chart IV-11
Private consumption and expected big-ticket purchases
Q2/2002 - Q3/2010[1]



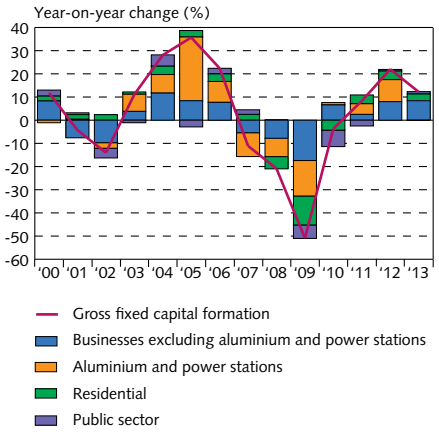
1. Figures for private consumption are only available until Q2/2010.
Sources: Capacent Gallup, Statistics Iceland.

Chart IV-12
Consumption as a percentage of gross domestics product 2000-2013[1]



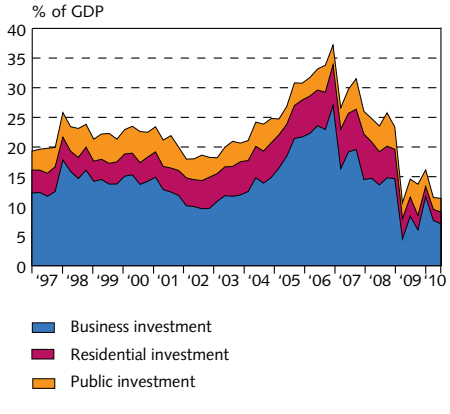
1. Central Bank baseline forecast 2010 - 2013.
Source: Statistics Iceland, Central Bank of Iceland.

Chart IV-13
Gross fixed capital formation and contributions of its main components 2000-2013[1]



1. Central Bank baseline forecast 2010-2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-14
Investment and main components as a percentage of gross domestic product
Q1/1997 - Q2/2010



Source: Statistics Iceland.

The Government has declared the willingness to treat all exchange-rate linked loans to households in the manner decided by the Supreme Court in September, and a bill of legislation to this effect has been proposed. Other debt restructuring measures are currently being discussed. The results of those discussions are important, but it is also important that a conclusion be reached as soon as possible in order to ease the current uncertainty about the private sector debt situation. Both will affect demand in Iceland – certainly for the short term, and perhaps for the long term as well.

Smaller volume contraction in public consumption, but nominal amount unchanged

Public consumption contracted by 1.7% in 2009 and, according to the baseline forecast, will continue contracting in 2010-2012. It is projected to contract by 1.7% in 2010 and by 2.4% per year in 2011 and 2012. This implies that public consumption will be 8% less in 2012 than at its peak in 2008. This is somewhat less than in the August forecast, where public consumption was nearly 12% lower in 2012 than in 2008. The main reason for this difference is that it is now assumed that the price of inputs for public consumption (primarily labour) will rise less than previously anticipated. On the other hand, it is assumed that, in nominal terms, public expenditures will be broadly in line with the last forecast.[7]

Business investment expected to grow despite postponements in large projects

Gross capital formation contracted by 51% in 2009 and totalled 13.9% of GDP, the lowest ratio since 1945, and just below 60% of the ratio that appears consistent with normal long-term development in output capacity. This ratio is expected to decline still further this year, to just over 13%, and then rise gradually thereafter.

The Bank's current forecast assumes, as before, that the Rio Tinto Alcan plant at Straumsvík will be expanded. It also assumes that Rio Tinto Alcan will change its production of aluminium from slabs to cylindrical rods called billets in the next few years. The change will be comparable to a 5-6% increase in production because billets are a more valuable product than slabs. It is expected that the Helguvík aluminium smelter and related power plant will be built a year later than was assumed in the last forecast (see Box IV-1). In spite of the delay, however, business investment is projected to increase by nearly 14% this year and just below 11% in 2011. Construction of the Helguvík smelter is expected to begin in earnest in 2012 and continue in 2013, with the bulk of the investment taking place in those two years. This implies that the Helguvík plant will begin exporting aluminium in the latter half of 2014.

7. In this context, it should be noted that the volume of public consumption is calculated by measuring the volume of production inputs, but no reliable measure of the volume of services rendered exists. This means that streamlining measures and technological advances in the production of public services which make it possible to provide more service than before at the same cost are not measured as higher productivity and more production. In recent years, attempts have been made to measure the production of public service instead of the inputs used, as is currently done, but it appears that more work must be done before a consensus can be reached on new and better ways to measure public consumption.

Box IV-1

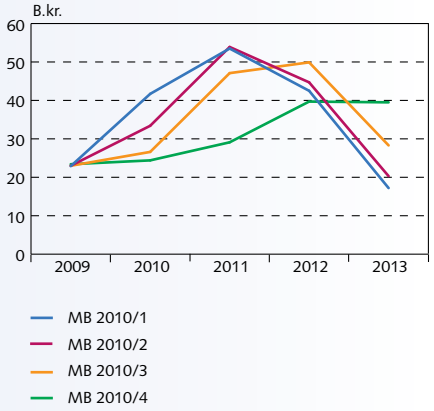
Assumptions concerning investment in heavy industry in the Central Bank's baseline forecasts

Plans to construct a new aluminium smelter at Helguvík together with the necessary power plant have recently been subject to enormous uncertainty on a number of fronts: funding, access to harnessable geothermal energy, ownership, and permits from the authorities. All of these factors have contributed to repeated delays in the project. In this forecast, it is assumed that the first phase of the Helguvík smelter would be delayed still further, as would energy procurement and construction of transmission lines. It is assumed that construction will be delayed by one year but will proceed in accordance with the developers' plans in 2012. As Chart 1 illustrates, the investment has been delayed a number of times, and the scale of the project has contracted during the forecast horizon.

As a consequence, investment in heavy industry will rise by only 4% in 2010, as opposed to the nearly 14% presumed in the August forecast. The difference will be even greater in 2011, when investment in heavy industry will rise by roughly 19% instead of the previously assumed 77%. The overall investment scenario changes in that development is distributed more evenly over the next three years, with investment still peaking in 2012 but at a lower level than in the last forecast. In 2013, however, the investment level will be higher than was assumed in August. Incorporating the August heavy industry profile into the current baseline forecast gives about 0.2 percentage points higher GDP growth for 2010, and about 1 percentage point higher growth for 2011, than in the current baseline forecast. Growth would be stronger, however, in 2012-13, and in 2011 and 2012, unemployment would be 0.7 percentage points lower than in the current baseline forecast, whereas it would be broadly in line with the forecast in 2013. Thus the delay in investment in heavy industry in the current baseline forecast compared to the August forecast does not imply a reduction in the medium-term growth outlook, but it will delay recovery.

The baseline forecast presented here continues to assume that the planned projects will come to fruition; however, it is expected that they will be postponed by one year and that only one of four construction phases will be completed. This assumption is subject to considerable uncertainty, however. As is described in the alternative scenario in Section I, economic developments over the next three years would be affected if these projects did not materialise. The Helguvík investments also have a proportionally greater impact on total gross capital formation and economic developments at the current juncture, when domestic investment level is at a low ebb, than they would during a period of greater economic activity.

Investment in heavy industry 2009-2013
At constant prices



Sources: Statistics Iceland, Central Bank of Iceland.

Residential investment at a historical low

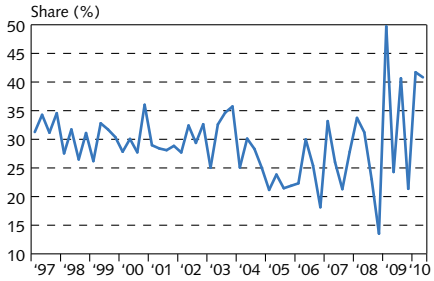
The forecast assumes that residential investment will total 2.1% of GDP in 2010, which implies that, in volume terms, it will have fallen by 73% from 2007 levels. The forecast assumes that Government tax measures designed to promote maintenance and renovation of residential housing will contribute to some rise in maintenance work over and above customary levels.

Residential investment totalled 6.9% of GDP in 2007, its highest level since 1980. In 2010, however, the ratio of residential investment to GDP is forecast to fall to an all-time low. Typically, this ratio ranges from 4% to 5%.

Public investment declines sharply

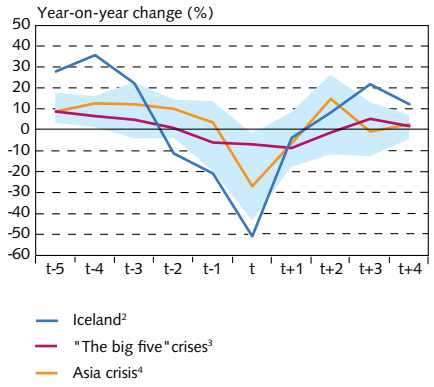
Public investment contracted by about 32% in 2009. It is projected to contract by 28% this year and by 14% in 2011, and begin rising

Chart IV-15
Investment goods imports as a share of business investment[1]
Q1/1997 - Q2/2010



1. The ratio of imported investment goods excluding parts and accessories (at CIF price according to the Statistics Iceland's BEC classification system) to business investment at current price levels.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-16
Investment - comparison to previous crises[1]



1. Annual volume change in investment of individual countries (excluding Iceland) lies within the shaded area. 2. Iceland (2009). 3. Spain (1978), Norway (1988), Finland (1992), Sweden (1992) and Japan (1993). 4. Hong Kong (1998), Indonesia (1998), South Korea (1998), Malaysia (1998), Philippines (1998), Thailand (1998).
Sources: Reuters EcoWin, Statistics Iceland, Central Bank of Iceland.

in 2012 and 2013. If the forecast materialises, public investment as a share of GDP will bottom out at about 2.1% in 2011 and 2012. In comparison, public investment amounted to about 4% of GDP during the period 1990-2008.

Slow turnaround in investment

In spite of an increase in business investment this year, total investment is projected to contract by 4% in 2010 and then rise by over 8% in 2011. As always, this forecast is subject to uncertainty. According to Statistics Iceland figures for the first half of 2010, investment contracted by 14.5% year-on-year; therefore, it must increase by 6% year-on-year in the second half if the forecast of a 4% contraction is to materialise. As is mentioned above, it is expected that figures on investment in Q2/2010 will be adjusted upwards. Based on the Central Bank's estimate of investment in Q2, it would be sufficient if second-half figures remain unchanged year-on-year.

The noticeable increase in investment goods imports supports the opinion that investment has begun to rise again. As Chart IV-15 shows, investment goods imports have constituted a relatively large share of business investment in the recent term. Another indication that business investment is growing is Capacent Gallup's September 2009 survey of the status and outlook of Iceland's 400 largest firms, which implied that total investment expenditure would rise by 1.6% in 2010. Excluding aluminium and energy companies, the estimated increase for this year is 3.5%.[8]

Low investment level accords with the experience of other countries with strong pre-crisis investment

The IMF's October 2009 *Economic Outlook* discusses the relationship between countries' pre-crisis investment ratio and the scope of the post-crisis recession.[9] The report indicates that a high investment ratio in the three years before a crisis tends to coincide with a sharp, protracted contraction in output after the crisis strikes. In this context, it is worth noting that, by all measures, Iceland's investment ratio in 2005-2007 was extremely high, at 30% of GDP. The IMF report suggests two possible explanations for the connection between a high investment ratio followed by an output contraction and limited investment after the financial crisis hits. First, unwinding excess pre-crisis investment may call forth a contraction in output. This implies a significantly lower investment ratio while the adjustment is underway. Second, the report points out that a high pre-crisis investment ratio may have been funded with debt that must then be serviced, which could crowd out other investments for some time. Both of these explanations are highly relevant to Iceland. Chart IV-16 shows the volume changes in investment before and after the Icelandic crisis, as compared with other countries that have faced financial crises. In Iceland, both the pre-crisis rise in investment and the post-crisis contraction were much more pronounced than in the comparison countries.

8. The position and future prospects of Iceland's largest companies, September 2010, Capacent Gallup.
9. International Monetary Fund (2009), *World Economic Outlook*, October 2009.

Indications that recovery began in Q3

According to figures from Statistics Iceland, seasonally adjusted GDP contracted by 0.3% quarter-on-quarter in Q4/2009, and by a further 1.2% in Q1/2010. The Central Bank estimates that GDP contracted by another 1.3% in Q2.

According to the Bank's forecast, seasonally adjusted GDP began rising again in Q3, growing by 3.1% quarter-on-quarter, and will grow by a further 1.2% in Q4. Thus the forecast indicates that a contraction spanning two-and-a-half years ended in mid-2010. Box IV-2 discusses depth and length of the Icelandic crisis in international context.

Outlook for modest output growth in coming years …

The Bank's forecast assumes that national expenditure will decline by 1½% in 2010. If this projection is to be borne out, national expenditure must rise by just under 2% year-on-year in the second half of the year, as the Bank's estimates indicate that it contracted by nearly 5% in the first half. National expenditure is estimated to grow by just under 3% in 2011 and by 4% per year in 2012 and 2013.

The same applies to GDP, which is estimated to contract by 2½% in 2010 instead of the 2% assumed in the last forecast. If the forecast is to materialise, GDP growth must exceed 2% in the latter half of the year, as the Bank estimates a contraction of just under 7% in the first half. GDP growth for 2011 is estimated at 2% instead of the 2½% assumed in the August forecast. For 2012 and 2013, the Bank anticipates approximately 3% growth per year, slightly more than in the August forecast.

Box IV-2

The Icelandic contraction and timing of recovery in international context

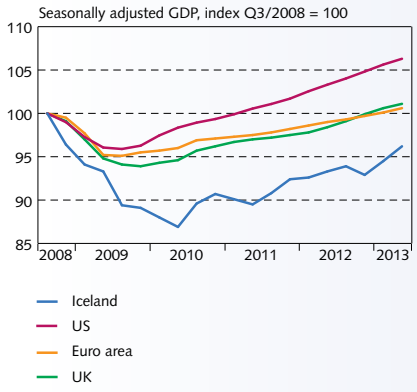
Economic recovery has begun in most countries and is well underway in many of them. In the US, recovery began in Q3/2009 and GDP is now just over 1% lower than in the latter half of 2008, at the beginning of the financial crisis (Chart 1). In the euro area, GDP growth began in Q3/2009 and has been strong so far in 2010; however, the outlook is for a slightly less robust second half. In the UK, GDP turned upwards near the end of 2009, but growth remains weak. In the Nordic region, the turnaround has been most decisive in Sweden, which recorded 4.7% quarter-on-quarter GDP growth in Q2/2010. Denmark is recovering strongly as well, and GDP growth is rapidly gaining momentum. In Norway and Finland, recovery began in Q3/2009.

The three Baltic countries are among those hit hardest by the crisis. GDP began growing in Q1 and Q2/2010 in Estonia and Lithuania, however, although they suffered a slight setback thereafter. The largest contraction occurred in Latvia, but recovery is expected to start there in the third quarter, as is it here in Iceland. Many other Eastern European countries suffered strong contractions as well, as did Ireland (Chart 2). In most of these countries, recovery began in Q1 or Q2/2010, however.

Recovery arrives later in Iceland

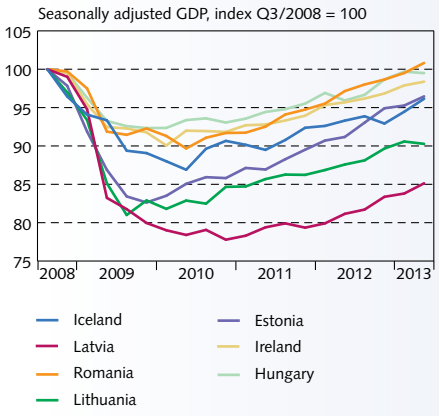
Iceland's banking and currency crisis is virtually unprecedented. Although the burden of the old banks' failure will be borne in large part by foreign creditors, the banks' collapse also made a profound impact on domestic private sector balance sheets, increased the

Chart 1
Economic recovery in international comparison
Q3/2008 - Q2/2013



Sources: Global Insight, Central Bank of Iceland.

Chart 2
Economic recovery in crisis countries
Q3/2008 - Q2/2013



Sources: Global Insight, Central Bank of Iceland.

magnitude of the economic adjustment, and delayed recovery beyond what other countries have generally experienced. In addition, there is an inevitable adjustment of demand in the wake of pre-crisis overheating.

According to the baseline forecast in this *Monetary Bulletin*, it appears that GDP bottomed out in Iceland in Q2/2010 and is now approximately 9% lower than it was just before the onset of the crisis. Thus the contraction lasted more than two years. According to the forecast, the outlook is for output to reach its pre-crisis level by year-end 2014. Clearly, though, there is also a permanent loss in potential output, currently estimated at approximately 5%.[1] On the whole, then, the contraction in Iceland was notably deeper than in most developed countries, yet it was not deeper than in the countries hardest hit by the crisis. Nonetheless, recovery has come later in Iceland than it has elsewhere.

Recession generally deeper following a twin crisis

Experience from previous financial crises shows that when an economy is struck by a twin banking and currency crisis, as Iceland has, the ensuing recession is inevitably deeper than it would otherwise be. Financial crises are generally accompanied by a substantial shift in production factors, which can be painful and take a long time. This adjustment is especially difficult in twin crises. In a twin crisis, a banking crisis – which generally deals domestic balance sheets a heavy blow and places great strain on domestic payment systems – and a currency crisis – which entails a sharp turnaround in capital inflows and a painful shift of the factors of production to the tradable sector – occur in tandem.[2] Because a banking crisis can magnify the short-term difficulties caused by currency depreciation and delay the shift of the factors of production to more profitable sectors, the economy's adjustment to a new real exchange rate level tends to be prolonged.

In a number of foreign studies, attempts have been made to measure the loss of production in the wake of banking and currency crises and the recession that ensues when such crises occur simultaneously. Hutchison and Noy (2005), for example, concluded that, over the two- to four-year average span of a recession, the GDP contraction caused by a currency crisis is in the 5-8% range, while a banking crisis generally causes an 8-10% contraction. When these crises coincide, however, the contraction is much steeper, or about 13-18% of GDP. The findings of Bordo *et al.* (2001) indicate that the GDP contraction following a twin crisis is greater than the combined loss caused by individually occurring banking and currency crises.

The adjustment in historical context

Recovery from a financial crisis is usually relatively rapid, with developments in major economic aggregates usually following a steep V-shaped path; in other words, a sharp contraction is usually followed by relatively swift recovery. An examination of the major financial crises occurring since the end of World War II reveals that the contraction in GDP, from peak to trough, lasts for an average of 1.7

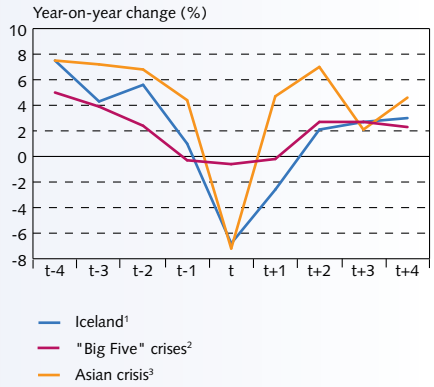
1. The estimate in loss of potential output is based on 3% trend growth of potential output from 2005, which is compared with forecasted potential output seven years after the onset of the crisis, in line with the standard approach for estimating loss of potential output. The loss of potential output in Iceland is markedly greater than that in other countries. According to the OECD, the loss of potential output in OECD countries as a whole is about 3-3½% (see OECD, *Economic Outlook*, November 2009).
2. For further discussion, see Box IV-1 in *Monetary Bulletin* 2008/3, pp. 24-26.

years.[3] The contraction was more protracted, however, during the Great Depression of the 1920s, which lasted about four years (see Reinhart and Rogoff, 2009). The length of the recession can also be expected to vary directly with the scope of the contraction, as in the current crisis.

This does not provide a complete picture of how deep a recession is, however, nor does it indicate clearly how quick recovery will be. Because contractions are often deep and sharp, it is more instructive to examine the pace at which a country's output returns to its pre-crisis level. In 14 major post-World War II financial crises, it took GDP an average of 4½ years to rise to pre-crisis levels (see Reinhart and Rogoff, 2009). The findings of Reinhart and Reinhart (2010) suggest that the adjustment could take even longer. During the decade after a financial crisis strikes, output growth is weaker and unemployment higher than in the decade preceding the crisis. Experience varies greatly, however, from country to country. For example, it took Japan and South Korea only two years to recover fully, while Colombia and Argentina were forced to wait eight years (Reinhart and Rogoff, 2009). The findings of Kannan (2010) also suggest that credit conditions can have a significant effect on how prolonged the contraction period will be. Access to credit is typically restricted following a financial crisis, which holds back industries relying on credit financing. Recovery can thus be slower than in the wake of other economic shocks.

All of this suggests that Iceland's post-crisis experience is quite typical. The contraction lasted for just above two years, and it will take about six years for GDP to recover its previous level, according to the baseline forecast in this *Monetary Bulletin*. Thus the recovery will be similar to those experienced by Indonesia and Thailand after the twin crisis that struck Asia in the late 1990s. It took Indonesia six years, and Thailand seven, to return to former GDP levels. As Chart 3 shows, the post-crisis contraction is similar in size to the average Asian crisis experience, but in Iceland, GDP has continued to contract in the second year following the crisis.

Chart 3
Output growth preceding and following crisis episodes



1. Iceland (2009). 2. Spain (1978), Norway (1988), Finland (1992), Sweden (1992) and Japan (1993). 3. Hong Kong (1998), Indonesia (1998), S-Korea (1998), Malaysia (1998), Philippines (1998), Thailand (1998).
Sources: OECD, Reuters EcoWin, Statistics Malaysia.

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Hutchison, M. M., and I. Noy (2005), "How bad are twins? Output costs of currency and banking crises", *Journal of Money, Credit and Banking*, 37, 725-752.

Kannan, P., (2010), "Credit conditions and recoveries from recessions associated with financial crises", IMF Working Paper no. WP/10/83.

Reinhart, C. M., and V. R. Reinhart (2010), "After the fall", NBER Working Paper no. 16334.

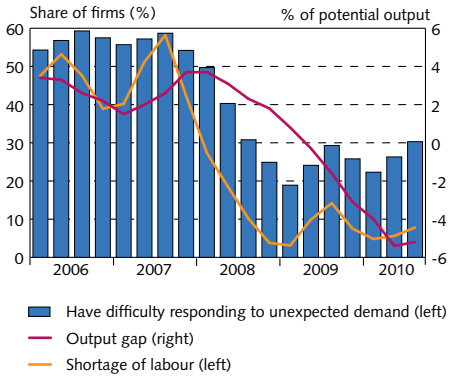
Reinhart, C. M., and K. S. Rogoff (2009). *This Time is Different: Eight Centuries of Financial Folly*. Princeton: Princeton University Press.

3. These major post-World War II crises are: Finland (1991), Japan (1992), Norway (1987), Sweden (1991), Spain (1977), Argentina (2001), Colombia (1998), Indonesia (1997), Korea (1997), Philippines (1997), Malaysia (1997), Thailand (1997), and Mexico (1994).

… driven by recovery of domestic demand

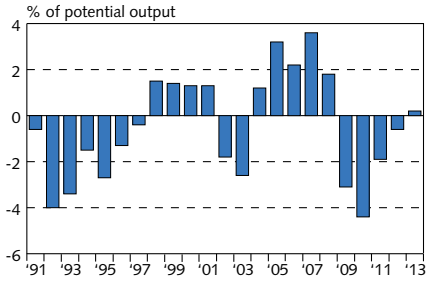
An examination of the contribution of individual expenditure aggregates to GDP growth according to the forecast reveals that growth will be supported primarily by private consumption and investment during the forecast horizon (see Chart IV-2), while the contribution from net exports will be negative, as imports will grow more than exports. This is a dramatic change from the situation in 2008-2009,

Chart IV-17
Indicators of use of production factors and output gap[1]
Q1/2006 - Q3/2010



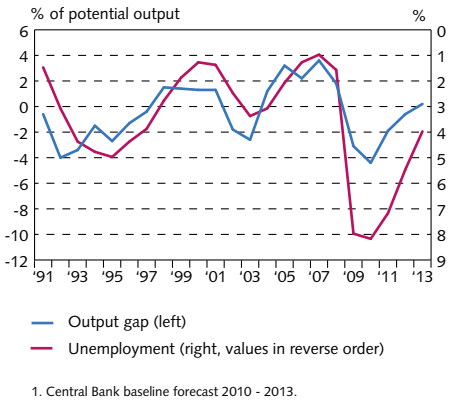
1. According to the Capacent Gallup Sentiment Survey among Iceland's 400 largest firms. Data on the difficulty of responding to unexpected demand are reported semiannually; therefore, a linear interpolation is used to generate quarterly data. Output gap is The Central Bank's estimation.
Sources: Capacent Gallup, Central Bank of Iceland.

Chart IV-18
Output gap 1991-2013[1]



1. Central Bank baseline forecast 2010 - 2013.
Source: Central Bank of Iceland.

Chart IV-19
Output gap and unemployment 1991-2013[1]



1. Central Bank baseline forecast 2010 - 2013.
Sources: Statistics Iceland, Directorate of Labour, Central Bank of Iceland.

when export growth and, above all, a plunge in imports prevented the sharp drop in national expenditure from leading to a corresponding contraction in GDP.

The current forecast assumes that the real exchange rate will remain very low in a historical context. This low real exchange rate is a factor in curtailing import growth. The forecast implies that total imports as a share of GDP are well in line with the historical average. In this context, it should be borne in mind that the large increase in the production of aluminium in recent years has led to a large increase in the import of goods used in this production. These imports do not decrease when the real exchange rate declines.

Although exports of goods other than marine products and energy-intensive industrial products are expected to grow somewhat, as are services exports, traditional exports (marine products and aluminium) weigh so heavily that total exports will grow very little during the forecast horizon (see Section II).

Production capacity to grow more slowly than demand

The Central Bank forecasts that the output slack will measure about 4.5% in 2010, a sharp turnaround from 2008, when the output gap measured about 3%. During this period, GDP contracted by 9%, whereas potential output is estimated to have contracted by 4%. The reasons for a loss of part of potential output have been discussed in previous issues of *Monetary Bulletin*, among them the fact that a portion of the capital stock has been lost and other production capital has been scrapped, bankruptcies have increased in number, and human capital has been lost.

Furthermore, survey findings indicate the presence of sizeable spare capacity. The most recent Capacent Gallup survey suggests that relatively few firms are beset by a shortage of staff or would have difficulty responding to a sudden spurt in demand. However, these findings imply that the output slack has stopped growing and has begun to narrow again. For example, the number of companies that consider themselves to have difficulty responding to a sudden rise in demand is gradually increasing.

Even though output is expected to grow slowly in the next few years, the output slack is projected to narrow relatively quickly and disappear in mid-2013 because potential output is expected to grow more slowly than demand. Because of the low level of investment, which results in a smaller capital stock than at end-2008, and the contraction in labour supply, together with the effects of a contraction in production, potential output is expected to be 3% less in 2010 than in 2008. It is expected to decline still further in 2011 and then begin to grow gradually.

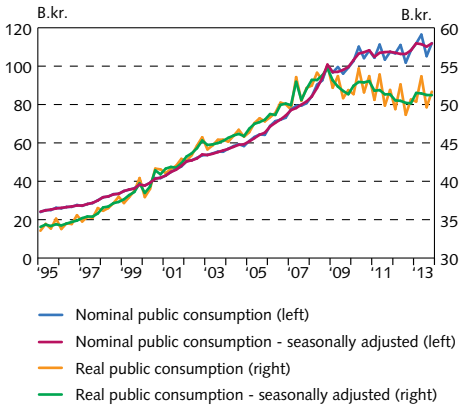
The substantial excess supply in the labour market is also a sign of an output slack. A large number of foreign workers migrated to Iceland when good employment opportunities were abundant. Some of these workers have returned to their home countries or sought jobs elsewhere. The same can be said about the Icelandic labour force, as the number of persons in the labour market has declined markedly (see Section VI). Many have enrolled in school, and a fair number

have gone abroad in search of work. Figures from Statistics Iceland show that Icelandic émigrés outnumbered returnees by 2,500. The Bank's forecast assumes that, by Q4/2013, unemployment will have fallen to just above 3%, broadly in line with the level consistent with economic equilibrium and the normal movement of workers between jobs due to changes in both personal circumstances and the economy at large.

V Public sector finances

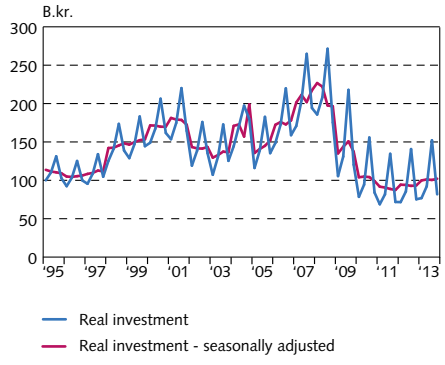
The National Budget proposal for 2011 assumes that public sector finances will continue to adjust to a greatly reduced tax base and a large increase in Treasury debt. In this phase of the plan to achieve a fiscal balance, measures aim at generating a surplus on the primary balance so as to arrest debt accumulation, thus ensuring fiscal sustainability for the long term. The austerity measures are in line with the Government-IMF programme. If the budgetary assumptions concerning a primary surplus materialise, the first of two goals for balanced public sector finances will be achieved. The long-term forecast entailed in the budgetary proposal assumes that the second goal will be reached in 2013, with a sizeable overall surplus.

Chart V-1
Nominal and real public consumption
Q1/1995 - Q4/2013[1]



1. Central Bank baseline forecast Q3/2010 - Q4/2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-2
Real public investment
Q1/1995 - Q4/2013[1]



1. Central Bank baseline forecast Q3/2010 - Q4/2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Expenditures within budgetary limits in 2010

In a departure from recent years, the authorities have found it easier to contain expenditures in 2010. According to the 2010 budget, Government expenditures should have been 560.7 b.kr., whereas they are now estimated at 545.3 b.kr.

Public consumption contracts less than expected

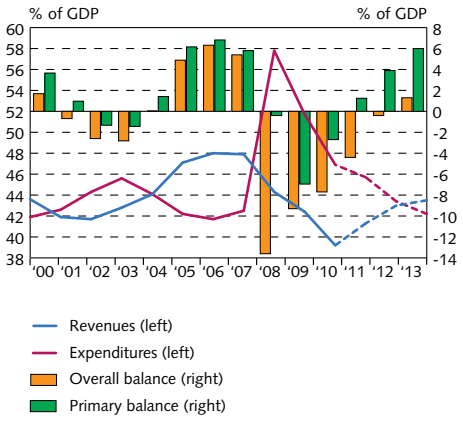
According to preliminary figures from Statistics Iceland for the first six months of the year, public consumption contracted by about 3% in volume terms over that period, slightly less than in the Central Bank's August forecast. From Q3/2009, annual nominal growth in public consumption was virtually non-existent, with the measured change reflecting price increases. The Bank's August forecast assumed that this trend would continue, but it did not materialise, as nominal public consumption in Q2 proved 3% higher than in the previous year. The increase in public consumption was due to higher municipal wage costs and increases in goods and services purchased by the general government. Both of these variables could decline again, although previous experience suggests that it is difficult to reverse wage costs. The current forecast therefore assumes a shift of just under 3% in public consumption until Q2/2011 and negligible nominal growth in public consumption from that point on in the forecast horizon. This issue of *Monetary Bulletin* forecasts a somewhat smaller volume contraction in public consumption than in the August forecast, or 1.7% instead of 3.2% in 2010, and 2.4% instead of 3.8% in 2011. This adjustment does not imply a change in the assessment of the general government's fiscal policy or a different interpretation than in the earlier forecast on the budgetary proposal; instead, it mainly reflects a change in the outlook for the price of public consumption, which is now projected to change less during the forecast period because of lower inflation and a smaller rise in nominal wages than was assumed in August. The forecast for developments in nominal public consumption over the forecast horizon has changed very little, however.

Austerity measures in line with expectations

According to the Government-IMF programme, the aim is to achieve a primary surplus amounting to 1% of GDP in 2011. In order to

reach that goal, consolidation measures amounting to 44 b.kr. have been adopted. In contrast with the measures for the current year, the weight of 2011 measures, 33 b.kr., is on the expenditures side. Direct tax hikes total 8 b.kr., but they do not affect the largest tax bases as they did in earlier budget proposals. According to the original Government-IMF plan, consolidation measures were estimated at 16% of GDP, while the revised plan indicates that consolidation amounting to 12% of GDP will be needed due to unexpectedly favourable economic developments, particularly in 2009. The budget proposal for 2011 is discussed in greater detail in Box V-1.

Chart V-3
Public sector finances 2000-2013[1]



1. Central Bank baseline forecast 2010-2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Interest expense extremely uncertain

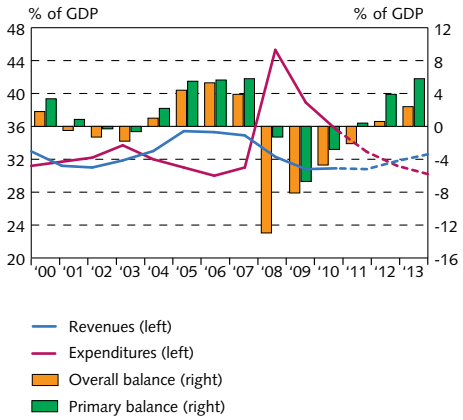
The general government's interest expense due to the Icesave obligations remains a source of great uncertainty. An act of law stipulating a Government guarantee of the contract providing for 5.5% fixed interest was rejected resoundingly in a national referendum earlier in 2010, and no new agreement is on the table. The forecast assumes that the negotiations will lead to a result similar to the contract that was being discussed when negotiations were suspended in February.

Fiscal outlook broadly unchanged

Forecasts have been relatively unchanged in the recent past – that is, ever since it was revealed that 2009 fiscal performance had outstripped forecasts. As regards the primary balance, the outlook for the forecast horizon is perhaps marginally less positive than in the last *Monetary Bulletin*. The current forecast assumes a primary deficit amounting to 2.7% of GDP in 2010 but a primary surplus of 6% of GDP in 2013. Developments in the overall balance are still subject to uncertainty about the interest to be paid on the Icesave obligation, but the forecast is based on the assumptions described above. Accordingly, the overall fiscal deficit is estimated at 7.8% of GDP for this year. The outlook for 2011 and 2012 is similar to earlier forecasts, except that a modest surplus is now expected in 2012.

The performance figures in Charts V-3 and V-4 are net of write-offs, which totalled 248 b.kr. in 2008. If they were excluded, the 2008 deficit would have totalled 0.5% of GDP. No allowance is made for write-offs due to Icesave. In 2008, the Treasury wrote off 192 b.kr. due to the Central Bank of Iceland's losses on collateralised loans, and the Bank was recapitalised with a debt instrument in the amount of 270 b.kr., in addition to the appropriation of collateral. The debt instrument was reduced by 134 b.kr. at the beginning of the year when the Central Bank of Iceland bought back the collateral appropriated by the Treasury at year-end 2008. Those purchases were made at book value and did not affect the Treasury's written-off claims.

Chart V-4
Treasury finances 2000-2013[1]

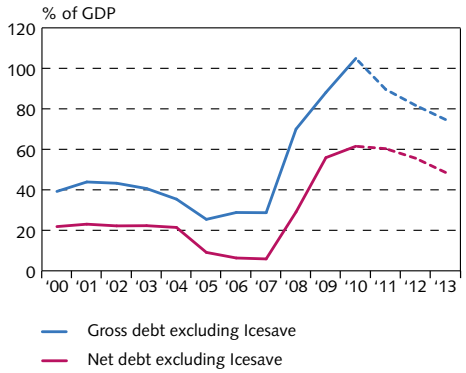


1. Central Bank baseline forecast 2010-2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Smaller increase in indirect taxes

The 2011 budget proposal includes a smaller rise in indirect taxes than was assumed in earlier Central Bank forecasts, which were based on previous Government plans. In the 2010 budget, taxes on the largest tax bases were raised. In 2011, however, the plan is to leave these untouched; for example, no further value-added tax hikes are

Chart V-5
Public sector debt as a share of GDP
2000-2013[1]



1. Central Bank baseline forecast 2010-2013.
Sources: Ministry of Finance, Central Bank of Iceland.

planned. Indirect taxes such as those on carbon, alcoholic beverages, and tobacco will rise, as they did this year. The impact of these tax hikes on the consumer price index in Q1/2011 has been estimated at 0.25 percentage points, far lower than previously anticipated, as the Bank's August forecast projected that the CPI would rise by 1.4 percentage points as a result of consumption tax increases. The budget proposal suggests some revenue-generating measures for 2012. It has not yet been decided what these will be, but the forecast estimates their impact on the CPI at 0.1 percentage points at the beginning of the year.

Debt level still unclear

The public sector debt situation will be uncertain as long as the Icesave dispute remains unresolved. It is estimated that the net debt ratio of the general government will peak in 2010 and 2011 at nearly 60% of GDP and then begin to taper off in 2012, reaching 49% in 2013. This includes only liquid monetary assets. As a result, net debt is not considered comparable to net debt in other countries, where it is the custom to include other monetary assets. If Iceland's net public sector debt is calculated in this manner, it amounts to 40% of GDP. Gross debt, on the other hand, will peak this year at just over 105% of GDP.

Capital controls have facilitated general government funding

In spite of a steep increase in foreign liabilities in the wake of the financial crisis, the general Government has been able to fund its operations in the domestic bond market without having pushed real domestic interest rates upwards and slowing down recovery. Two factors play a role here. On the one hand, attempts to follow the Government-IMF plan for fiscal performance have been successful, which has limited the Government's financial need. On the other hand, the capital controls have dramatically limited investment opportunities and pushed investors towards bonds issued by the Treasury and the municipalities. Furthermore, risk premia on the Treasury's obligations have declined steadily as the IMF programme progresses, affecting not only the Treasury's access to funding and credit terms in the international markets but also a number of domestic firms planning to seek financing from abroad.

Tax hikes or expenditure cuts?

Although the economic literature generally agrees that consolidation measures that reduce general government debt are beneficial in the long run, there is debate about the short-term impact. A recent study carried out by IMF economists suggests that, for the short term, austerity measures have a negative impact on economic activity.[1] Most often, domestic demand contracts and unemployment rises during the first year of consolidation, but this is offset by the positive effects of lower interest and a weaker currency. In general, credible fiscal consolidation is accompanied by monetary policy easing. Lower interest rates stimulate domestic demand, mitigating the negative effects of

1. See International *Monetary Fund* (2010), "Will it hurt? Macroeconomic effects of fiscal consolidation", Chapter 3 in *World Economic Outlook*, October 2010.

the consolidation measures. Moreover, lower interest rates weaken the domestic currency and support export growth.

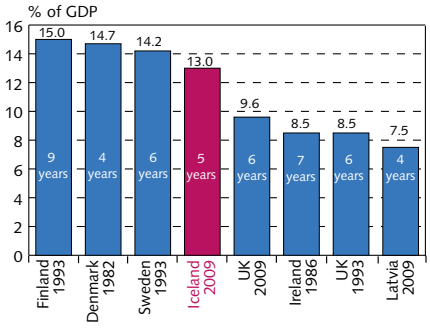
According to the findings from the IMF study, the negative impact of consolidation measures was greater if the measures focused primarily on tax increases. Most research concurs with this. Expenditure measures are likelier to be more successful, as they are politically more difficult and therefore more credible than tax measures. Interest rates, therefore, fall farther than when the restraint is only on the revenues side, particularly if the tax hikes centre on indirect taxes.

The fiscal reversal in 2009-2013 in international comparison

The Nordic countries stand out in a comparison of the countries that have adopted the most extensive consolidation measures as defined by the IMF. The austerity measures currently being implemented in Iceland are similar in scope to those in the other Nordic countries during the 1980s and 1990s. The estimated improvement in Iceland's primary balance between 2009 and 2013 amounts to 13% of GDP according to the revised Government-IMF plan (12% for the Treasury and 1% for municipalities). The largest improvement in the primary balance occurred in Finland, over a nine-year period from 1992-2000. The improvement was similar to that in Denmark in the early 1980s, and in Sweden in the early 1990s, but takes place over a shorter period (see Chart V-6).

In the 1980s and 1990s, Ireland and the UK undertook consolidation measures that generated an improvement amounting to 8.5% of GDP over a six-year period. Now the British are faced with having to adopt similar measures, and they intend to achieve an improvement of almost 10% of GDP in six years. Similarly, Latvia, which was hit especially hard by the financial crisis, intends to improve its fiscal performance by 7.5% of GDP in the next four years. The Irish have not announced a fully fledged plan in the wake of recent developments concerning the recapitalisation of their banking system, but discussions indicate that the improvement in the primary balance must lie in the range of 13-15% of GDP.

Chart V-6
Fiscal reversal in various countries



Sources: ECM, IMF, Ministry of Finance.

Box V-1

National Budget 2011

The fiscal consolidation plan is one of the cornerstones of the Government-IMF economic programme. The 2011 National Budget, if passed, is an important step in that consolidation, as it enables the Government to achieve a surplus on the primary balance in 2011, the first important goal in the plan.[1] The second goal is to achieve a sizeable overall surplus by 2013.

Strong improvement in primary balance

On the basis of the plan, consolidation measures were adopted in the latter half of 2009, in response to a deteriorating outlook for Government operations. Thereafter, it was decided to take radical steps on both revenues and expenditures sides of the 2010 Budget. The turnaround in the primary balance from 2009 onwards could total 117 b.kr. in 2011, if the Budget is successful. It assumes that the primary balance will be about 17 b.kr. in 2011 on an accrual basis, or the

1. The primary balance is the difference between revenues and expenditures excluding financial income and expense. The overall balance is the difference between total revenues and total expenditures.

Table 1 Medium-term plan 2011-2014[1]

	Accounts	Budget	Projection				
In ISK billions at current price levels	*2009*	*2010*	*2010*	*2011*	*2012*	*2013*	*2014*
Revenues	439.5	461.9	470.8	477.4	533.2	599.4	629.3
Expenditures	578.8	560.7	545.3	513.8	526.8	550.5	579.9
Overall balance	-139.3	-98.8	-74.5	-36.4	6.4	48.9	49.4
Overall balance, share of GDP (%)	-9.3	-6.1	-4.6	-2.1	0.4	2.6	2.5
Primary balance	-99.1	-40.0	-27.4	16.9	62.7	102.9	103.4
Primary balance, share of GDP (%)	-6.6	-2.5	-1.7	1.0	3.4	5.4	5.2
Capital and Financial Account	-40.1	-58.9	-47.1	-53.3	-56.4	-54.1	-54.0
Capital and Financial Account, share of GDP (%)	-2.7	-3.6	-2.9	-3.1	-3.1	-2.8	-2.7

1. Excluding possible effects of Icesave accounts.
Sources: Ministry of Finance, State Accounting Office, Statistics Iceland.

equivalent of 1% of GDP. The original plan presented to Parliament in summer 2009 assumed that the primary balance would improve by just over 16% of GDP during the period 2009-2013. The current plan, on the other hand, aims at an improvement of up to 12% of GDP during the period; that is, the 2009 primary deficit of 6.7% will have become a 5.4% surplus by 2013. The need for consolidation is less acute primarily because economic developments are more favourable and public debt lower than original forecasts indicated.

Overall balance on schedule

According to the budget proposal, it is also estimated that the overall balance will improve by 56 b.kr. in 2011 and will be negative by 36 b.kr., or 2.1% of GDP. In order to achieve this, a mixed approach involving increased revenue generation and expenditure cuts will be adopted, but in this phase of the plan, the weight of the measures will be on the expenditures side. The proposal provides for direct measures to improve Treasury performance by 44 b.kr., including revenue-generating measures amounting to 11 b.kr. and expenditure cuts totalling 33 b.kr.

The revenues side in 2011

After sizeable tax increases in 2010, it is assumed that major tax categories will remain unchanged in 2011; therefore, such items as individual income tax, value-added tax, and payroll tax will not be raised. According to the budget proposal, tax hikes will deliver an estimated 8 b.kr. of the 11 b.kr. revenue target. The remaining 3 b.kr. will be obtained through an additional authorisation for third-pillar pension savings withdrawals. The taxes to be raised are listed in Table 2. Chief among them are financial income tax and corporate income tax, both of which rise from 18% to 20%; inheritance tax, which rises from 5% to 10%; and taxes on carbon, alcoholic beverages, and tobacco.

Table 2 Revenue-generating measures for 2011

	B.kr.
Capital gains tax	1.5
Income tax on legal entities	0.5
Inheritance tax	1.0
Wealth tax	1.5
Alcohol and tobacco tax	1.3
Carbon tax	1.0
Motor vehicle tax	0.2
Tax on financial institutions	1.0
Total, excluding pension withdrawal authorisation	8.0
New authorisation for third-pillar pension withdrawal	3.0
Total, including pension withdrawal authorisation	11.0

Source: Ministry of Finance.

The expenditures side in 2011

The majority of the 33 b.kr. contraction in expenditures, or 28 b.kr., is achieved through a direct cutback in allocations to Government ministries. The remaining 5 b.kr. is to be achieved by preventing Government salaries and guideline amounts for social welfare benefits from rising in excess of the increases approved in the 2009 wage settlements.

The 28 b.kr. savings to be achieved through direct cutbacks will be taken from operations, transfers, and investment. More specifically, operations are to be cut by 13 b.kr., transfers by 11 b.kr., and investment by 4 b.kr. (see Table 3). These cutbacks, if they are implemented successfully, total 6.3% of the nominal expenditure framework.

It is assumed that operational cutbacks will come from general administration (9%), social welfare services, upper secondary schools, and law enforcement (5% each), and medical insurance (3%). Transfers to the Unemployment Insurance Fund and the Childbirth Leave Fund are expected to decline by 10% each, or a total of nearly 2 b.kr.

Table 3 Restraint measures, economic breakdown

In ISK billions	*Decrease, b.kr.*	*Total turnover*	*Reduction %*
Operations	-12.7	204.8	-6.2
Transfers	-11.4	211.5	-5.4
Maintenance and initial expenses	-3.9	30.1	-13.0
Total	-28.0	446.3	-6.3

Source: Ministry of Finance.

The assumed inflationary impact of the budget proposal is negligible. The positive effects of exchange rate movements are estimated to offset almost entirely the negative effects of price changes in other operating expenses. The only remaining amount is a 500 m.kr. increase due to the 2009 wage settlements. No other indexation can be found in the proposal.

New fiscal rule will promote economic stability in the long run

Since 1992 the Government has used framework budgeting, which is based on an expenditure framework. The aim is that the Government sets overall policy and the ministries prioritise functions within the framework. The primary objective of preparing a budgetary framework is to enhance the Government's policy-making role and ensure that the defined policy is followed effectively. In 2003, budget preparation was improved still further with the adoption of a fiscal rule, according to which public consumption expenditures may not grow by more than 2% per year in volume terms and transfer may not rise by more than 2.5%. Also prepared was a four-year plan for revenues and expenditures, which was not binding, as it was not subjected to a vote in Parliament; it was merely a declaration of intent.

This budget preparation method was not sufficiently successful. During the pre-crisis period, real growth in public consumption and transfers almost always exceeded the amounts stipulated according to the fiscal rule, and cost overruns were seemingly tolerated without serious repercussions. Therefore, the base for the next year's allocations was often higher than long-term forecasts had provided for, and base creeping was evident in the development of the budgetary framework. In 2006, the Icelandic National Audit Office concluded that ⅔ of 300 budgetary items had exceeded the 4%

deviation limit.[2] The large Treasury surplus during the years before the crisis resulted not from restraint according to the 2003 fiscal rule but from unexpected and unusually sizeable tax revenues.

The main reason it proved so difficult to enforce the 2003 fiscal rule was a lack of transparency and credible follow-up. During a period of growing and uncertain inflation, it is difficult to use criteria on real changes when the nominal value of budgetary allocations is constantly changing. In recent years, international institutions such as the OECD and the IMF have recommended that the fiscal rule be changed so as to specify a permissible ceiling on nominal growth in the expenditure framework instead of specifying real growth targets. Surveillance of such a rule is much simpler because allocations are clear, established, and easy to communicate. Such a rule is also stricter because unexpected price rises must be met with cost-cutting measures, as indexation will not be a factor later on. This introduces a countercyclical policy role into the framework, as price increases automatically lead to a contraction in real public expenditure. In periods of high inflation, however, such a rule can cause cutbacks that do not have political support. The Government has now proposed to adopt a fiscal rule specifying nominal expenditure growth in order to enhance credibility in fiscal policy. In making this change, the Government has a vested interest in keeping inflation low, which should therefore lead to improved policy coordination with monetary policy than was the case, for example, during the run-up to the crisis.

The National Budget proposal for 2011 is the first to present a binding nominal expenditure framework for the next two years. Such a framework implies a resolution by the Government not to seek further financing from Parliament if they should exceed the targets. The expenditure framework for each year includes estimated changes in wages, exchange rate, and price levels. The plan is based on the strategy that for the first two years – 2011 and 2012 – the framework will be binding in nominal terms if prices deviate from assumptions by less than 1.5%; otherwise, the expenditure categories concerned can be revised. The plan also allows for an unallocated contingency fund of 5 b.kr. per year to meet unforeseen price deviations and obligations. In other respects, all decisions and deviations must be accommodated within the overall framework, which may not be changed at later stages, and all increases in expenditures for individual aspects of Government operations must be offset by decreases elsewhere.

The medium-term plan also includes guideline frameworks for 2013 and 2014. The guideline frameworks can be revised in the spring of 2012, during the preparation of the 2013 budget proposal, as regards wage and price assumptions and possible changes in conditions. However, there are certain irregular items that are not part of core operations and could fluctuate between years due to economic developments or assessment after reconciliation of accounts (for example, pension obligations related to Government employees). Such items are therefore extremely difficult to predict and do not fall under any direct Government decision-making associated with budget preparation. More specifically, the irregular items in question include expensed unfunded liabilities for the State employees' pension fund, financial income tax that is paid by the Treasury and also entered on the revenues side, write-offs of tax claims, Government guarantees of debts, lost claims, unemployment benefits, the statutory contribution to the Municipal Equalization Fund based on State tax revenues, and interest expense. Excluding these irregular items from total expenditures in the medium-term plan yields the overall

2. The deviation limit for budget results is 4%. If an institution is able to keep its expenditures within this limit, it is considered to be within the budget.

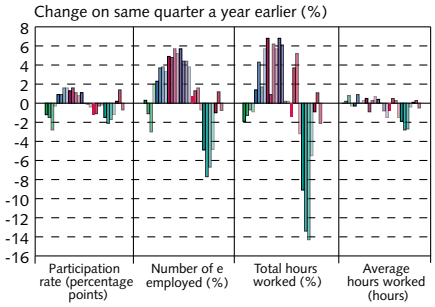
expenditure framework for each year, which is used as a reference during budget preparation. The overall expenditure framework for 2011 is 381.4 b.kr.

It is important to evaluate the success of the fiscal rule and publicise the findings. It is vital that there be a political cost associated with failure to enforce the rule and benefits associated with success. Increasing political responsibility for the rules is of paramount importance.

VI Labour market and wage developments

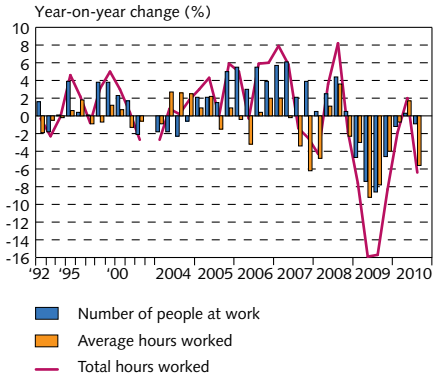
The flexibility of the Icelandic labour market has continued to facilitate adjustment following the financial crisis. So far in 2010, the labour participation rate has dropped, hours worked have declined, and emigration has continued; therefore, unemployment has grown less than it would have otherwise. Nonetheless, there are indications that unemployment has yet to rise. The current forecast assumes that it will peak at the beginning of 2011 and then subside gradually as the economy picks up. Employment will increase at the same time. The current forecast assumes more modest wage rises than were projected in August, and growth in unit labour costs is expected to develop in line with the inflation target over the forecast horizon.

Chart VI-1
Changes in labour market
Q1/2004 - Q3/2010



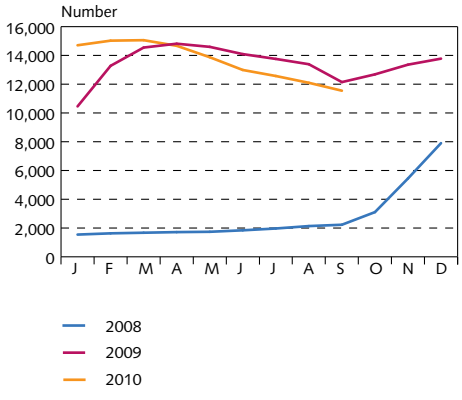
Source: Statistics Iceland.

Chart VI-2
Changes in number of people at work, average hours worked and total hours worked 1992 -2010[1]



1. Data from the Statistics Iceland labour market survey from January 2003 and therafter are not entirely comparable with earlier data.
Source: Statistics Iceland.

Chart VI-3
Average number of unemployed
January 2008 - September 2010



Source: Directorate of Labour.

Employment contracts again in Q3

The Statistics Iceland labour market survey for Q2/2010 indicated that the labour market had already begun to recover. Because of the large contribution of the oldest group of workers to the increase in the labour force, and because survey results are always subject to some sampling uncertainty, the August forecast assumed that increased labour demand in Q2 was not an indicator of developments in upcoming quarters and that demand for employment would not increase year-on-year until mid-2011. Based on the results for Q3, this appears to have been an accurate assessment, as employment contracted year-on-year by all measures. The total number of hours worked by those at work during the reference week fell by 2.1%. This corresponds to the contraction in labour demand, which measured just under 2% year-on-year. The contribution from the oldest group of workers still has a strong impact on the results for the quarter but does not offset the contraction among the core age group (25-54 years).

Changes in entitlement to benefits have reduced registered unemployment

Unemployment as registered by the Directorate of Labour was broadly unchanged year-on-year in Q3, at 7.3%. If account is taken of changes in the methods for calculating unemployment and the changes in entitlement to unemployment benefits, which are estimated to reduce unemployment figures by ½-1 percentage point in 2010, unemployment during the quarter was somewhat higher than it was last year.[1]

Firms considering redundancies outnumber those considering adding staff

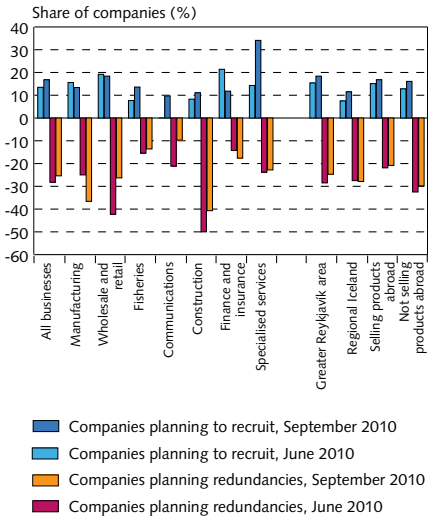
Household expectations concerning the employment situation, which had improved since the spring, fell somewhat in October and are now back to August 2009 levels, according to the Capacent Gallup Consumer Sentiment Index. Corporate expectations have

1. Self-employed persons' right to apply for unemployment benefits while working part-time was reduced, and students in scheduled vacations from school – e.g., summer vacation – are no longer entitled to benefits. Changes in estimated man-years are discussed in Box VI-1 in *Monetary Bulletin* 2010/2.

remained broadly unchanged, however, according to Capacent Gallup's September survey among Iceland's 400 largest firms.[2] Slightly fewer firms wanted to cut staffing in September than in the comparable survey conducted in June, or about one-fourth, and a greater number want to recruit. Firms' plans to recruit and lay off staff are roughly unchanged from a year ago, however. The results of the survey indicate that the labour market has yet to weaken somewhat, as firms wanting to shed staff in the next six months outnumber those wanting to recruit by about 10%.

Whether a comparison is made with the June survey or the survey conducted a year ago, interest in cutting staff levels changed the most among manufacturing companies, with over one-third considering redundancies in September, as opposed to one-fourth in the previous survey. Over 40% of construction firms still want to lay off staff, and firms in export sectors are less likely to want to shed staff than their counterparts that sell to the domestic market. There is no difference between exporters and other companies as regards the desire to recruit. Firms in specialised services are most likely to be interested in taking on workers.

Chart VI-4
Companies planning to change staffing levels during the next 6 months



Source: Capacent Gallup.

Net migration negative until 2013

Net emigration from Iceland following the current recession has been somewhat more pronounced than in previous economic crises, as this recession is considerably deeper and the inflow of migrant workers during the pre-crisis upswing was much greater than in previous episodes. Other things being equal, unemployment would probably have been about 1-2 percentage points higher in 2009 without this emigration. The Statistics Iceland population forecast suggests a similar result for 2010. Figures on net migration reveal that persons leaving Iceland outnumbered those moving to the country by over 1,500 during the first three quarters of the year. According to the population forecast, net migration will be negative by about 4,000 in 2010 and by about 2,000 in 2011.[3] Statistics Iceland does not forecast positive net migration until 2013.

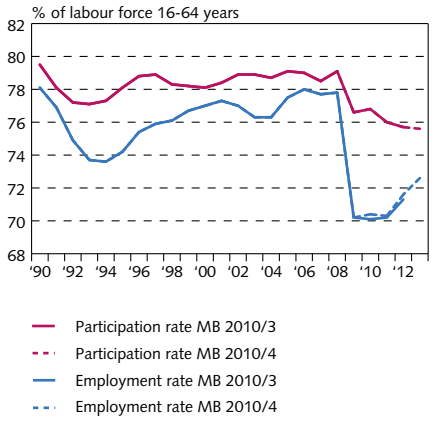
Unemployment in line with the previous forecast

Unemployment in Q3/2010 was a scant ½ percentage point less than according to the forecast in the August *Monetary Bulletin*. The Capacent Gallup corporate survey indicates that unemployment has yet to rise. Furthermore, corporate debt restructuring is still incomplete. Consequently, the current forecast assumes that unemployment will rise slightly in the coming fall and winter, peaking at 8.7% in Q1/2011 before gradually tapering off as the economy recovers. It is expected to fall to about 3% in 2013.

2. Capacent Gallup conducts a quarterly survey of the status and future prospects of Iceland's 400 largest firms. Two of the surveys are rather broad in scope and are carried out in March/April and September each year, while the other two, carried out in May/June and December, are more limited.

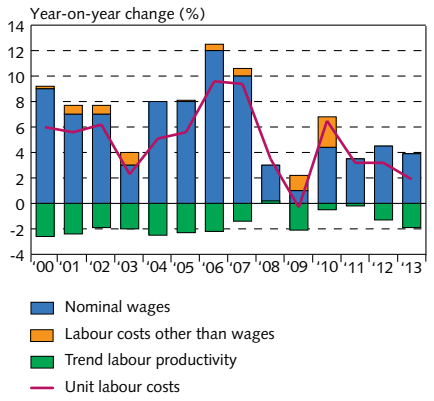
3. Net emigration from Iceland during Q4/2009 was half of the total for the year as a whole. The reason for this is that, at each year-end, the National Registry is corrected based on data submitted from other public institutions, and those who have left the country but not notified the Registry are then removed from the register.

Chart VI-5
Participation rate and employment rate 1990-2013[1]



1. Central Bank baseline forecast 2010-2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VI-6
Unit labour costs and contributions of their components 2000-2013[1]



1. Positive labour productivity growth is shown as a negative contribution for an increase in labour costs. Central Bank baseline forecast 2010-2013.
Sources: Statistics Iceland, Central Bank of Iceland.

Labour market participation will contract during the forecast horizon

The Bank's projections for labour participation and the employment rate (the ratio of employed persons to the population aged 16-64) are unchanged from the August forecast. In 2010, the employment rate will be similar to the 2009 ratio, which is about 6 percentage points below the peak during the height of the upswing in 2006-2008. It is still assumed that sustained recovery of employment levels will not take hold until mid-2011, about a year after the turnaround in output growth. This is in line with other countries' experience in the wake a financial crisis. The baseline forecast assumes that employment will increase by approximately 2% beginning in 2012, which is somewhat less than output growth. On the other hand, labour participation will contract throughout the forecast horizon and will be about 1 percentage point less in 2013 than in 2009.

Unit labour costs will grow in line with the inflation target

Wage developments in Q3/2010 have been in line with the last forecast. Wage pressures appear to be weaker, however, than they were in the spring, when strong performance by export companies caused some unrest in the labour market. Since then, the króna has appreciated somewhat, and wage drift is considered less likely in the export sector. Furthermore, the forecast does not assume that the upcoming wage settlements will be characterised by significant pressure to correct real wages, which have fallen by 12% since they started to fall in early 2008, as the slack in the labour market will presumably counteract such demands. The assumptions concerning both wage drift and wage rises in the upcoming round of negotiations have therefore been adjusted downwards from the Bank's May and August forecasts and are now closer to those in the January forecast. It is assumed that nominal wage rises will somewhat outpace consumer price developments during the forecast horizon, but that underlying productivity will increase as the horizon progresses, so that unit labour costs will grow more or less in line with the inflation target throughout the period. However, developments in productivity are considerably uncertain in the current economic climate (see Box VI-1).

Box VI-1

Productivity development and employment growth

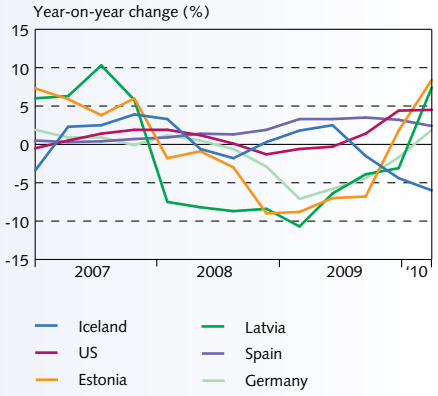
Productivity development in OECD countries

In the current financial crisis, labour productivity, whether examined as productivity per hour worked or productivity per worker, has developed in differing ways in the OECD countries, and the divergence is considerably greater than in previous recessions (see, for example, OECD, 2010). The US and Germany are interesting examples in this context, as productivity has developed quite differently in Germany than in the US. Even though output has contracted more sharply in Germany than in the US, employment has increased (and the number of hours worked has decreased) in Germany, whereas it has declined significantly in the US. The difference between developments in employment and output in the two countries is sufficient for output per worker to have risen in the US but fallen in Germany. In Japan and most of mainland Europe, the trend has been similar to that in Germany, whereas developments in Spain more closely resemble those in the US (Chart 1).

The difference in employment development is probably due to differences in labour market institutions, with factors such as employment protection and the degree of collective bargaining making an impact. Government prioritisation also plays a role. Many European countries have encouraged employment retention, and their governments have offered a variety of measures to that end; for example, subsidising part-time employment in order to keep the level of employment higher (see, for example, International Monetary Fund, 2009b). It is important that short-term working schemes be designed properly so that workers do not become locked into sectors and jobs with no future. Otherwise, unemployment could turn out to be higher once recovery has taken hold, and there could be more likelihood of a jobless recovery.

The difference in labour market adjustment in the OECD cannot be explained by differing institutional framework alone, however. Labour market adjustment is probably not equally rapid in all countries. The fact that the reduction in the number of jobs has been considerably greater and speedier in countries experiencing a sharp decline in house prices (such as the US and Spain) than in countries that were affected by the global contraction in trade (such as Germany) reflects this. Experience shows that the construction industry has been more flexible than most other sectors (OECD, 2010). In the current crisis, the decline in the number of construction industry employees outpaced the contraction in output, generating productivity growth in countries that experienced a construction boom during the upswing. This is not true of all countries, however. For example, productivity has declined in Estonia and Latvia, probably because the contraction in GDP was so strong and sudden that even a substantial downturn in employment was insufficient to offset the drop in output.

Chart 1
Productivity development in an international perspective
Q1/2007 - Q1/2010



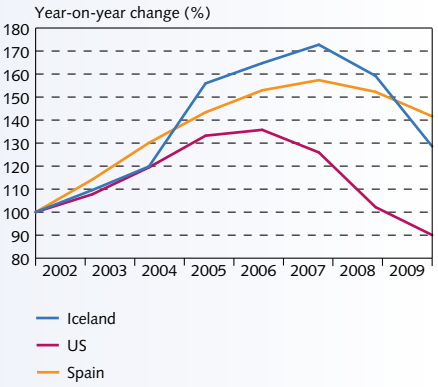
Source: International Financial Statistics (IFS).

Productivity development in Iceland

Productivity declined somewhat in Iceland in the run-up to the crisis. For a long period of time there had been significant excess demand for labour, which probably resulted in the recruitment of less experienced workers; furthermore, there was considerable movement in the labour force. Both of these factors doubtless reduced productivity. In 2008, productivity contracted markedly, perhaps because the Kárahnjúkar construction project more or less came to an end in 2007 (Chart 1).[1]

Productivity grew somewhat after the collapse of the banks, however. The number of employed persons dropped sharply, and the total number of hours worked fell even further. Both variables contracted more than output. As in the US and Spain, it can be assumed that the ensuing collapse of the real estate market and the construction sector played an important role in how quickly the number of employed persons fell. The year after the crisis struck, the number of workers employed in the construction industry dropped by over 6,000, which was over half of the decline in employed persons, even though construction workers accounted for only a scant 3.5% of employed persons before the crash (Chart 3). Furthermore, some corporate restructuring took place after the crisis struck, and this probably involved redundancies. Work time was reduced as well, and the number of part-time employed increased.[2]

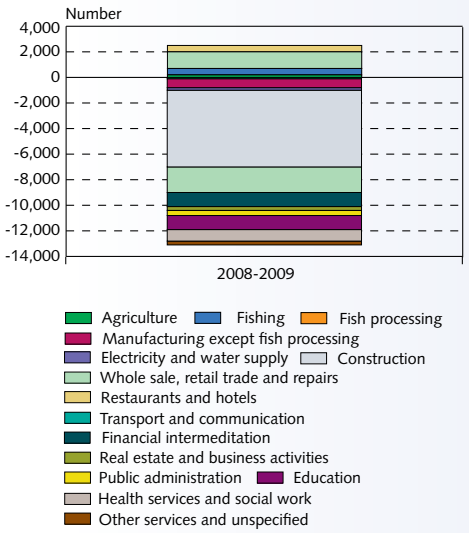
Chart 2
Real house prices 2002-2009



Sources: Bank of Spain, International Financial Statistics (IFS), OECD, Registers Iceland.

1. A large number of foreign nationals had come to Iceland to work on the aluminium smelter/power station construction project at Kárahnjúkar. Repatriation of foreign nationals appears in Statistics Iceland figures with a time lag, but a large reduction in foreign workers could show up as a contraction in measured productivity.
2. Temporary amendments made to unemployment legislation in November 2008 were intended to make it easier for wage earners and the self-employed to receive unemployment benefits while employed part-time. These amendments remained in force until 1 May 2009.

Chart 3
Change in employment by sector 2008-2009



Source: Statistics Iceland.

Since mid-2009, however, measured productivity has contracted once again, due in part, perhaps, to the slow pace of corporate restructuring. For example, 40% of construction industry executives expect to lay off staff in the next six months, even though the number of people working in the sector has contracted steeply in the past year.[3] It is also possible that the contraction in productivity according to current data will change upon revision of national accounts figures, as data errors are more likely in the current climate (see Section IV). Moreover, it appears that the measured increase in the number of employed in Q2 is attributable to a sampling error (see Section VI).

Jobless recovery?

Recessions associated with a real estate market collapse and systemic financial crisis, such as that in Iceland, generally lead to a steep contraction in GDP, followed by a slow recovery and a gradual rise in the number of jobs (see, for example, International Monetary Fund 2009a). Studies show also that productivity development in a downturn can give an indication of the increase in jobs once recovery begins. Economies where labour hoarding is significant enough to lead to a marked contraction in productivity are more likely to experience output growth without new job creation, or jobless recovery. Other studies indicate that the number of jobs will not rise until investment has begun to recover (Zoega, 2010).

If current experience from other countries and past experience from previous financial crises are any indicator of future developments, the number of jobs will probably increase slowly after recovery has set in. In Iceland, hours worked have contracted more than the number of jobs. As a result, there should be considerable scope to increase output without hiring new workers. According to the OECD (2010), in Germany, where the adjustment took place primarily through shortened working hours, GDP could grow by 8% without an increase in employment, while in the US, where the adjustment featured a reduction in jobs, GDP could only rise by 1½% without a rise in the number of jobs. Similarly, in Iceland GDP could rise by just over 3% without an increase in the number of jobs.

The baseline forecast in this *Monetary Bulletin* assumes that recovery began in Iceland in Q3/2010, but that labour market adjustment is still underway. Unemployment can be expected to rise still further, peaking early in 2011. Furthermore, employment is not forecast to increase until mid-2011, about one year after output starts to grow, which is consistent with the experience of other countries following a financial crisis. In the first year after employment begins to increase, the forecast is for just under 3% GDP growth but just over 1% growth in employment. If this forecast materialises, productivity will rise considerably. At the end of the forecast horizon, however, the number of employed persons will still be about 5 percentage points lower than in 2006-2008, at the height of the upswing.

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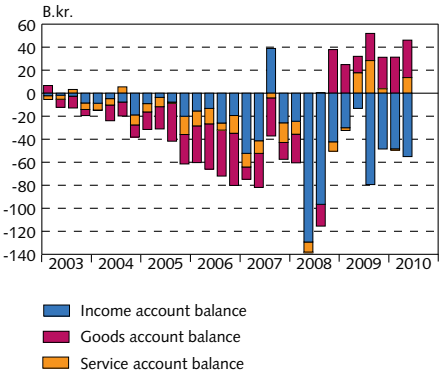
3. The September 2010 Capacent Gallup survey of Iceland's 400 largest firms.

VII External balance

In the first half of 2010, the current account balance was negative by 27 b.kr., or 3.6% of GDP, as opposed to last year's first-half surplus of 1.6%, which was due to an unusually small deficit in the balance on income, reflecting losses at Icelandic companies owned by non-residents. In the first half of this year, there was a 74.5 b.kr. surplus on the goods and services account but a 101.7 b.kr. deficit in the balance on income (including calculated interest income and accrued expense for the deposit money banks (DMBs) in winding-up proceedings). Because this income and expense does not reflect actual currency flows but consists mainly of calculated amounts that will be eliminated when the estates are settled, it is appropriate to ignore them when analysing the external balance. Excluding these, the current account balance was positive by 21 b.kr., or 2.9% of GDP in the first half of the year.

Chart VII-1
Current account balance components[1]
Q1/2003 - Q2/2010



1. Net current transfer is included in the balance on income.
Sources: Statistics Iceland, Central Bank of Iceland.

Trade account still in surplus

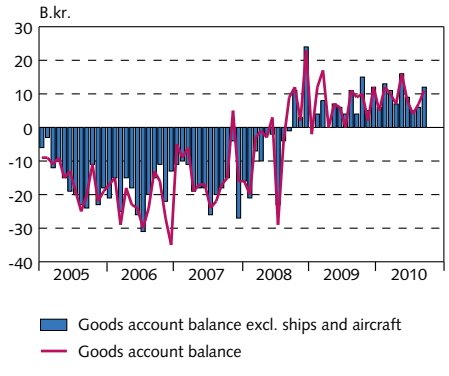
The goods account has been in surplus for each of the first nine months of the year. The contraction in imports peaked in mid-2009 and had run its course by the beginning of 2010. From March to September 2010, the averge increase of imports year-on-year has been just over 15% at constant exchange rates. In spite of this, the goods surplus for the first nine months was considerably larger in 2010 than in 2009. The sharp contraction in imports in 2008 and 2009 was due not only to the collapse of the króna. The drop in investment goods imports, for example, was especially pronounced because it followed the surge in importation of such goods in connection with the aluminium and power sector investments in 2003-2007. At the same time, there was an enormous increase in imports of transport equipment. As a result, it can be expected that once imports stabilise, they will be lower than during the upswing because imports as a share of GDP are now close to their long-term average after rising far above that value during the pre-crisis years (see Section IV).

Export values have been growing steadily since the beginning of the year, with the exception of February, and were roughly 14% higher year-on-year for the first nine months of 2010. Higher marine products prices and a sharp rise in aluminium prices explain the bulk of the increase. So far this year, the surplus in the goods account has averaged 9.1 b.kr. per month at constant exchange rates, totalling roughly 82 b.kr. for the first nine months of the year.

The services account balance was positive by 13.6 b.kr. in Q2, after a small deficit in Q1. Increased revenues from transport and other services explain most of the services account surplus in the first half of the year, while increased expenditures due to Icelanders' travels abroad offset increased export revenues from tourism.

The outlook is for a continuing surplus in goods and services trade in the latter half of the year, even though imports have begun to recover. Export prices have remained high, the real exchange rate is low in a historical context in spite of a recent upturn, and payment card figures suggest that revenues from foreign tourists have risen. As a result, the export value of goods and services is expected to be

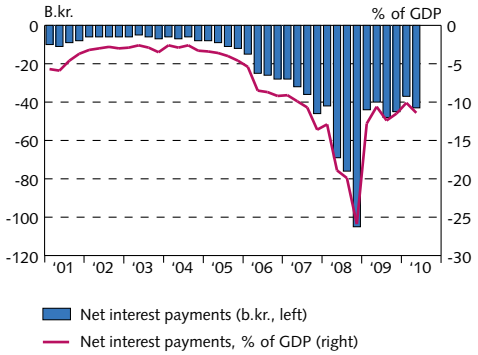
Chart VII-2
Goods account balance
At fixed exchange rates, January 2005 - September 2010



Sources: Statistics Iceland, Central Bank of Iceland.

slightly higher than in the previous forecast, and the trade account surplus is projected to peak at 9½% of GDP this year before tapering off steadily over the forecast horizon, when imports rise in the wake of increased domestic demand.

Chart VII-3
Net foreign interest payments
Q1/2001 - Q2/2010



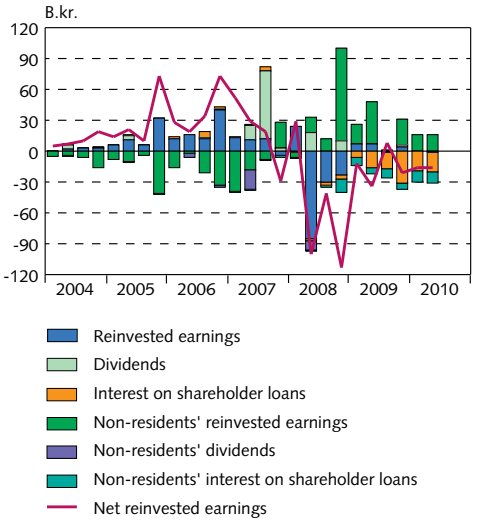
Sources: Statistics Iceland, Central Bank of Iceland.

Income account deficit grows further

Despite a sizeable surplus in the trade account in the first half of the year, the current account deficit measured 2.4% of GDP in Q2, and nearly 5% in the previous quarter. This was due to a large deficit in the balance on income in the first half of the year.

The income account deficit totalled just over 97 b.kr. in the first half of the year, due in large part to the interest balance, which was negative by over 80 b.kr. In addition, dividends and reinvested earnings were negative by slightly more than 19 b.kr. As a result, the deficit in the balance on income was considerably larger than it was a year ago, in spite of a broadly unchanged interest balance between years, as large losses on foreign companies caused resident investors to lose significantly on their foreign assets, adding to the deficit in the income account.

Chart VII-4
Return on investment
Q1/2004 - Q2/2010



Sources: Statistics Iceland, Central Bank of Iceland.

Revised figures reveal a larger current account deficit in 2008, and a smaller one in 2009

Revised figures for 2008 and 2009 reveal that the current account deficit was larger in 2008, and smaller in 2009, than official numbers indicated at the time the last *Monetary Bulletin* was published. The revised figures for 2008 indicate that the deficit for the year was 46 b.kr. more than was previously thought, or 22.1% of GDP instead of 18.5%. The revision was carried out mainly because of better information on revenues and expenses of individual companies. On the other hand, the revised 2009 figures indicate that last year's deficit was 27 b.kr. less than previous numbers had suggested, or 2.2% of GDP instead of 3.8%. The smaller deficit is due both to a larger trade surplus and a smaller deficit in the balance on income. The larger trade surplus is attributable to higher export revenues than previously estimated, especially for service exports, and the smaller income account deficit is due to less negative interest on shareholder loans.

Accrued interest on DMBs in winding-up proceedings skews the picture

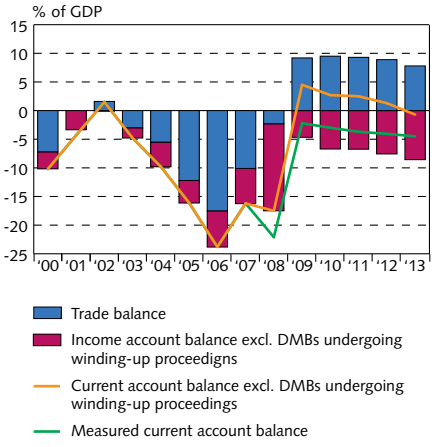
As is stated above, the deficit in the balance on income in 2009 is due in large part to a negative interest balance. As has been discussed in previous issues of *Monetary Bulletin*, the interest balance does not reflect actual flows of funds during the period. A large share of interest expense derives from unpaid accrued interest on the deposit money banks (DMBs) in winding-up proceedings. A substantial percentage of this interest will probably never actually be paid and will disappear from official statistics on factor income when the bankruptcy proceedings for these banks are concluded. Therefore, in order to gain a clearer view of future payment obligations and of actual payment flows to and from Iceland during the period, it is useful to consider the balance on income excluding these DMBs.

Current account balance in surplus if adjusted for accrued income and expense of failed DMBs

The trade balance was positive by 74.5 b.kr. in the first half of the year, while the income account balance was negative by 101.7 b.kr. As a result, the current account balance for the first half of the year was negative by 27 b.kr., or 3.6% of GDP. If adjusted for accrued income and expense of DMBs in winding-up proceedings, however, the current account balance flips from a deficit to a surplus of 21.4 b.kr., or 2.9% of GDP.

The outlook is for a sizeable trade surplus in the latter half of the year; however, this is offset by a large deficit on the income account. It is assumed that the official current account deficit will total 46 b.kr., or 3% of GDP, for the year as a whole, which is slightly more than the deficit projected in the last forecast because of a somewhat larger deficit in the balance on income. If it is adjusted for accrued income and expense of DMBs in winding-up proceedings, however, the current account balance shows a surplus of 44 b.kr., or 2.8% of GDP, a smaller surplus than was assumed in the August forecast, due to larger deficit in the balance on income.

Chart VII-5
Current account balance 2000 - 2013[1]



1. Net current transfer is included in the balance of income. Central Bank baseline forecast 2010 -2013.
Source: Statistic Iceland, Central Bank of Iceland.

Increased interest deficit in coming years

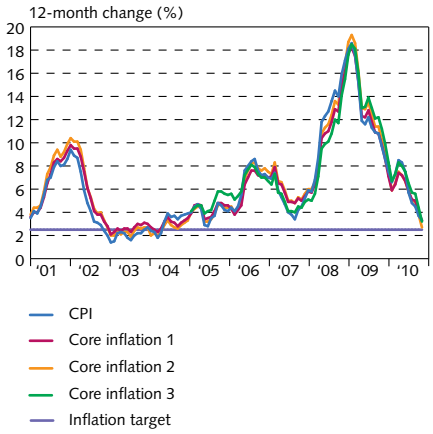
Interest income and interest expense are by far the largest items in the balance on income, and their development will be an important determinant of developments in the current account balance over the next few years. Declining interest rates abroad are reflected in diminishing interest expense in 2009 and early 2010. Interest payments increased somewhat in Q2, and further increases are expected in connection with the loans taken to expand the foreign exchange reserves, although interest income will offset these to a degree. Furthermore, it is assumed, other things being equal, that interest rates will rise and the interest balance will deteriorate again once monetary policy in Iceland's trading partner countries normalises. The Central Bank forecast also estimates interest expense on the Icesave obligations. In the forecast the balance on income is expected to worsen again over the next several years.

The current account deficit according to official figures will therefore rise again to an estimated 3.7% of GDP in 2011 and then to 4-4½% in 2012-2013, a somewhat larger deficit than in the last forecast. On the other hand, the current account balance adjusted for the DMBs in winding-up proceedings is expected to be positive by 2.8% of GDP in 2011 and by 1.3% of GDP in 2012. In 2013, it is assumed that the current account balance excluding these DMBs will turn negative again, by 0.7% of GDP, as the trade account surplus will shrink at the same time that the deficit in the balance on income grows.

VIII Price developments and inflation outlook

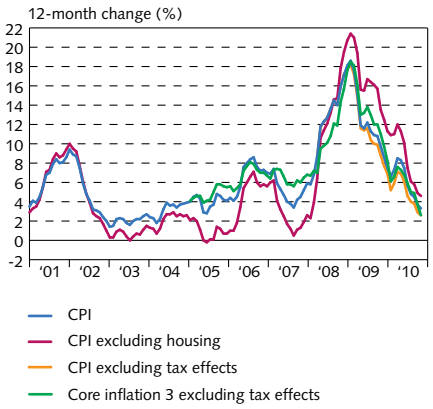
Inflation has subsided more rapidly than was anticipated when the last *Monetary Bulletin* was published and appears on course to reach the inflation target by year-end. Underlying twelve-month inflation – that is, inflation excluding the effects of changes in indirect taxes – measured 2.6% in October and is therefore almost at target. The more rapid disinflation is attributable in large part to the fact that a portion of food price increases due to rising global market prices have not yet emerged, the króna has appreciated somewhat more than anticipated, and the strong exchange rate has reduced inflationary pressures to a greater extent. Inflation expectations in the bond market have tended to rise in the recent term, while other measures of inflation expectations have fallen, although household expectations are still high. The outlook is for inflation to be below target in 2011 and for the inflationary effects of changes in indirect taxes to be considerably weaker than previously expected.

Chart VIII-1
Inflation
January 2001 - October 2010[1]



1. The core indices are compiled on the same basis as the CPI, with Core Index 1 excluding prices of agricultural products and petrol, and Core Index 2 excluding prices of public services as well. Core Index 3 also excludes the effect of changes in mortgage rates.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VIII-2
Various inflation measurements
January 2001 - October 2010



Source: Statistics Iceland.

Rapid disinflation in the recent term

At the beginning of 2010, inflation measured 7.5% after having fallen steadily throughout 2009. After a temporary upturn this spring, twelve-month inflation has subsided quickly, to 3.3% in October. Consequently, headline inflation is at a five-year low. Underlying twelve-month inflation measured 2.6% in October. Inflation excluding the effects of various volatile items, public services, and mortgage interest expense also measured 2.6%. As a result, inflationary pressures have subsided markedly. It is expected that the recovery of the real economy will be slow, and there is a sizeable slack in the goods and labour markets (see Sections IV and VI).

Stronger króna has reduced inflationary pressures

The króna has appreciated by 13% in trade-weighted terms since the beginning of the year, substantially reducing inflationary pressures. The appreciation has played a leading role in the rapid pace of disinflation. The exchange rate pass-through due to the stronger króna has gradually lowered import prices. The price of imported goods excluding alcoholic beverages and tobacco was 3.4% higher year-on-year in October. Included in this figure is a 1.4% year-on-year decline in imported food and beverage prices, which have not shown a decrease since February 2008, before the collapse of the króna.[1]

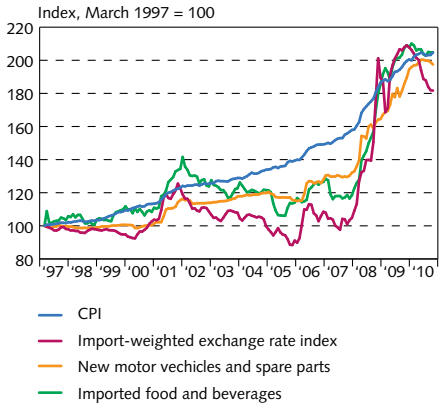
Historically, pass-through from exchange rate appreciation has been much less pronounced and longer to emerge than pass-through from depreciation. Companies have therefore appeared hesitant to pass currency appreciation through to prices. Although the recent appreciation has certainly reduced inflationary pressures markedly and inflation expectations have subsided, it still appears to take some time for import prices to fall to any noticeable degree. The recent appreciation of the króna has occurred at a time of significant output slack.

1. The twelve-month price increase in imported goods excluding alcoholic beverages and tobacco peaked at just over 30% in January 2009. Of that amount, imported food and beverage prices had risen 56%.

Thus it is likely that exchange rate pass-through will be stronger under these circumstances than others. On the other hand, many firms are in operational difficulties because of heavy indebtedness and have therefore a harder time cutting their prices. Competitive pressures should limit companies' scope to pass these cost factors through to the price level, however.

One indication of exchange rate pass-through is the difference between services inflation and goods inflation, as the appreciation of the króna should have a stronger effect on goods prices. The price of private services was roughly 5% higher year-on-year in October, and the price of public services roughly 10% higher.[2] At the same time, the price of groceries had risen just over 1%. Thus goods inflation has tapered off more rapidly in the past year than services inflation, which has proven more persistent.

Chart VIII-3
Import-weighted exchange rate and import prices
March 1997 - October 2010

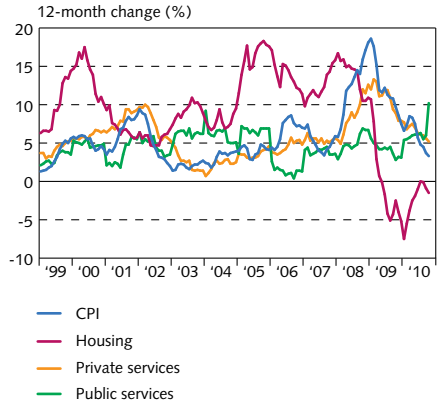


Source: Statistics Iceland.

House prices broadly unchanged

Twelve-month inflation excluding housing measured 4.6% in October. House prices have increased slightly since *Monetary Bulletin* was last published and, according to the Statistics Iceland market price index, are 1.7% lower year-on-year nationwide, although the measured decline is restricted to the greater Reykjavík area.[3] Imputed rent – which is determined by the market price of residential housing and real interest expense – has declined by 4½% in the past twelve months. Previous issues of *Monetary Bulletin* have discussed the possibility that limited housing market turnover has resulted in an underestimation of the decline in house prices in index measurements. Housing market turnover has risen in the recent term; thus it is possible that, with increased turnover, a larger downturn in prices will be measured. The contribution of the housing component to the twelve-month consumer price index (CPI) measured -0.3 percentage points in October.

Chart VIII-4
Consumer prices
Housing and services



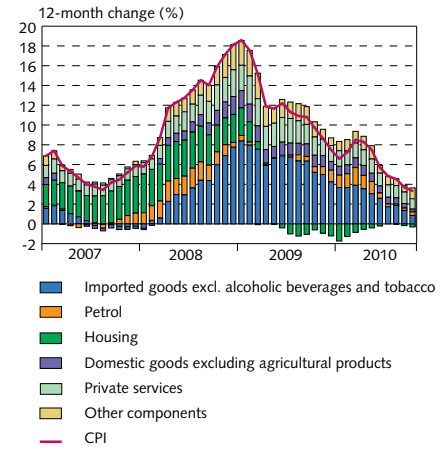
Source: Statistics Iceland.

Variable inflation expectations

The breakeven inflation rate based on the spread between nominal and index-linked bonds has tended to rise since the last *Monetary Bulletin* was published. In part, the explanation can be found in declining yields on Housing Financing Fund (HFF) bonds, expectations that the capital controls will be lifted sooner than previously assumed, and the resulting rise in risk premia because of uncertainty about the inflation outlook. However, it is difficult to assess with any certainty the degree to which the rise reflects increased inflation expectations, on the one hand, and increased risk premia, on the other. Based on the breakeven inflation rate, inflation expectations five years ahead appear to be 2.8%, and 3% farther ahead in time (expected average inflation in 2015-2020).

Other criteria indicate that inflation expectations have declined recently. According to the Capacent Gallup survey of household inflation expectations, carried out in September 2010, the median

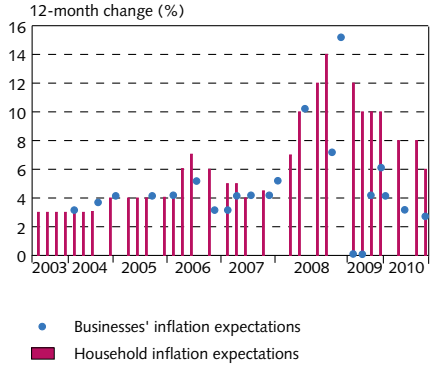
Chart VIII-5
Components of CPI inflation
Contribution to inflation in past 12 months
January 2007 - October 2010



Source: Statistics Iceland.

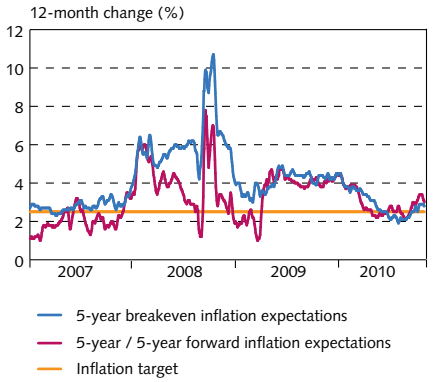
2. See the discussion of energy price increases in Q4 later in this section.
3. In the past twelve months, the price of condominium housing in the greater Reykjavík area has fallen by 2.5% and the price of detached housing in greater Reykjavík by 3.4%, whereas house prices in regional Iceland have risen by 1%.

Chart VIII-6
Inflation expectations of businesses and households one year ahead



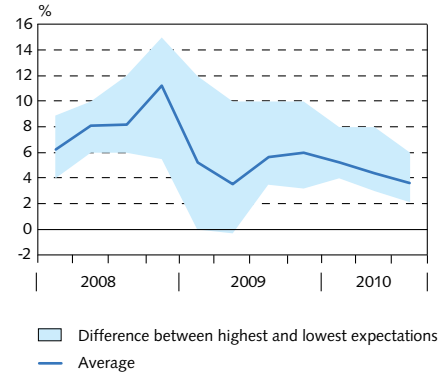
Source: Capacent Gallup.

Chart VIII-7
Inflation expectations according to the difference between nominal and indexed forward interest rates[1]
Daily data 2 April 2007 - 25 October 2010



1. Breakeven inflation expectations are calculated from yield spreads between nominal and index-linked Government and Government-backed bonds (5-day moving averages).
Source: Central Bank of Iceland.

Chart VIII-8
Inflation expectations one year ahead according to various measurements[1]
Q1/2008 - Q3/2010



1. Based on corporate, household, and bond market inflation expectations one year ahead and the Central Bank inflation forecast one year ahead.
Sources: Capacent Gallup, Central Bank of Iceland.

household expects inflation to be 6% one year ahead. This is a decline of 2 percentage points since June. Expectations concerning inflation two years ahead had also fallen by 2 percentage points since the last survey, measuring 5% in September. Household inflation expectations therefore remain high, in spite of rapid disinflation and an improved inflation outlook. In this survey, however, the standard deviation of responses was extremely high. An examination of the standard deviation of historical responses concerning inflation expectations one year ahead reveals that it rose in tandem with inflation expectations and inflation in 2008 and 2009 but has not declined in response to the recent disinflation episode. The standard deviation has averaged 2.8% since measurements were introduced in 1998 but has averaged about 6.4% in the wake of the financial crisis, even though inflation has fallen rapidly since. This suggests that inflation expectations were temporarily unanchored and that the Central Bank inflation target lacked credibility. In addition, it indicates that, although inflation is headed for the target in the next few months and is forecast to remain there during the forecast horizon, and that other expectations reflect this, there is still work to be done in order to convince the general public of the Bank's ability to hold inflation at or near the 2.5% target in the long run. It could also indicate a general lack of confidence in economic policy and public institutions in the wake of the currency and banking crisis.

According to Capacent Gallup's September survey of the country's 400 largest companies, the median executive expects inflation to be about 2.5% one year ahead. This is a decline of 0.5 percentage points since June, when the previous survey was conducted. On the other hand, firms expect inflation to be 4% two years ahead, which is 1 percentage point lower than in the survey from March. When asked about pricing decisions, executives from 58% of firms responded that they expected the prices of their company's goods and services to remain unchanged over the next six months, while one-third of them expected to raise prices. These results are broadly in line with the March survey. It is interesting to note that one-third of retail executives were considering lowering their prices over the next six months, as opposed to 6% last time.

Disinflation faster than projected

Inflation measured 4.3% in Q3/2010, whereas the August forecast indicated 4.8%. Underlying inflation measured 3.6% in Q3, while the August forecast assumed 4%. This is due to several factors: a part of the forecasted increases in food prices (due to rising global market prices) emerges later, the appreciation of the króna has had a stronger effect than was expected, and overall inflationary pressures have been weaker. The output slack also appears to have been larger than previously anticipated in the first half of the year.

Transitory effects of energy and food price increases

The short-term inflation outlook has improved. Inflation will be lower in Q4/2010 than according to the last *Monetary Bulletin*, as a result of lower inflationary pressure owing to a stronger króna, more significant spare capacity in the economy, a larger contraction in real dispos-

able income and private consumption in 2010, and an improved initial position. Imported goods prices are expected to decline somewhat if the exchange rate remains stable or appreciates. The baseline forecast assumes that underlying inflation will be 2.1% in Q4, but simple statistical models indicate a slightly less rapid decline, to 2-2.5%. The rapid disinflation between the third and fourth quarters is attributable in part to strong base effects, as the 2.5% quarter-on-quarter rise in Q4/2009 will disappear from twelve-month comparison figures.

Prices of energy and food will rise in Q4/2010 due to price list increases and rising global food prices in recent months. Direct inflationary effects due to the Reykjavík Energy price hikes measured almost 0.3 percentage points in October and are expected to measure around 0.1 percentage points in November. There is some uncertainty about the extent to which the derived inflationary effects from these price list hikes will emerge in rising energy prices and higher corporate electricity costs. Furthermore, there is considerable uncertainty about the overall effect of increases in global food prices, how quickly that effect will emerge, and to what extent lower imported food prices due to exchange rate pass-through will offset it.

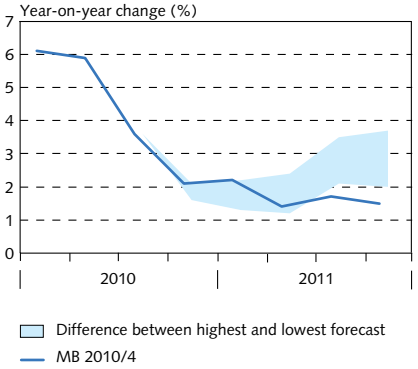
Headline inflation approaches the Central Bank's inflation target

Headline inflation is forecast to reach the inflation target at year-end and remain below target in 2011, which is earlier than according to the August forecast. It is expected to average 5.4% in 2010, 1.9% in 2011, and 1.9% in 2012. Lower-than-anticipated headline inflation in 2011 is attributable in large part to a re-evaluation of the inflationary effects of indirect tax changes. The inflationary effects of tax changes and/or changes in various excise taxes due to the consolidation measures planned for 2011 are now projected to be considerably less than previously estimated, or 0.25 percentage points instead of 1.4 percentage points. Furthermore, they are expected to amount to 0.1 percentage points in 2012, as opposed to the previously estimated 0.6 percentage points. This forecast is based on information from the National Budget proposal for 2011 (see Section V).

More rapid disinflation or risk of a reversal?

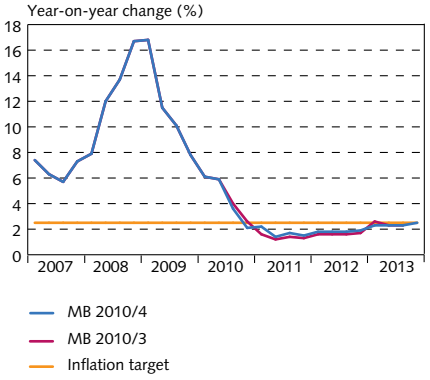
Among the major uncertainties surrounding the inflation forecast is the uncertainty about exchange rate developments. The baseline forecast assumes that the króna will appreciate slowly. If it appreciates more quickly and exchange rate pass-through is more pronounced, there is a chance that inflation will subside more rapidly. On the other hand, the króna could depreciate and there is also the risk of second-round effects due to rising food and energy prices if derived price increases are sizeable and spread to inflation expectations. The baseline forecast assumes that wage rises in the coming round of wage settlements will be modest and that increases in unit labour costs will be broadly in line with the inflation target (see Section VI). If pressure to correct real wages is stronger than expected, there is the risk that inflation will be higher than it would otherwise be (see Section I).

Chart VIII-9
Inflation forecasts using different models
Inflation excluding tax effects Q1/2010 - Q4/2011



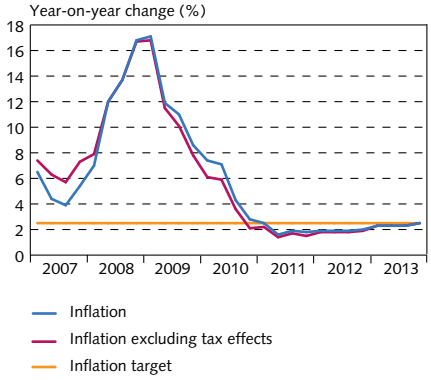
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VIII-10
Inflation excluding tax effects - comparison with MB 2010/3



Sources: Statistics Iceland, Central Bank of Iceland.

Chart VIII-11
Inflation including and excluding tax effects



Sources: Statistics Iceland, Central Bank of Iceland.

Appendix 1

Baseline macroeconomic and inflation forecast 2010/4

Table 1 Macroeconomic forecast[1]

		Volume change on previous year (%) unless otherwise stated				
	B.kr.		*Forecast*			
GDP and its main components	*2009*	*2009*	*2010*	*2011*	*2012*	*2013*
Private consumption	765.4	-16.0 (-14.6)	-0.3 (0.5)	3.6 (3.3)	2.3 (3.5)	2.2
Public consumption	396.9	-1.7 (-3.0)	-1.7 (-3.2)	-2.4 (-3.8)	-2.4 (-2.4)	2.0
Gross capital formation	207.9	-50.9 (-49.9)	-3.7 (-3.8)	8.3 (24.6)	22.0 (6.3)	12.2
Business investment	115.8	-55.0 (-54.2)	13.6 (15.1)	10.8 (35.6)	26.3 (2.8)	12.0
Residential investment	40.1	-55.7 (-55.7)	-22.1 (-24.3)	24.2 (23.9)	20.4 (26.0)	15.9
Public investment	52.1	-31.6 (-28.9)	-28.2 (-29.9)	-13.5 (-15.2)	4.5 (4.5)	8.0
National expenditure	1,369.1	-20.9 (-20.1)	-1.6 (-0.7)	2.8 (3.7)	4.2 (2.5)	4.0
Exports of goods and services	794.8	7.4 (6.2)	0.4 (-1.2)	0.8 (1.2)	2.0 (1.8)	2.0
Imports of goods and services	663.2	-24.1 (-24.0)	2.9 (1.3)	1.8 (3.7)	4.8 (3.5)	3.9
Gross domestic product	1,500.8	-6.8 (-6.5)	-2.6 (-1.9)	2.1 (2.4)	2.7 (1.7)	3.0
Other key aggregates						
GDP at current prices (in b.kr.)		1,501 (1.500)	1,561 (1.599)	1,617 (1.701)	1,706 (1.806)	1,791
Trade account balance (% of GDP))		8.8 (8.0)	9.5 (9.6)	9.3 (9.2)	8.9 (9.8)	7.8
Current account balance (% of GDP)		-2.2 (-3.8)	-3.0 (-2.2)	-3.7 (-3.7)	-4.1 (-2.6)	-4.5
Underlying current account balance (% of GDP)[2]		4.3 (2.1)	2.8 (3.6)	2.5 (1.1)	1.3 (1.1)	-0.7
Output gap (% of potential output)		-3.1 (-3.0)	-4.5 (-3.9)	-1.9 (-2.1)	-0.6 (-1.2)	0.2
Unit labour costs (change in average year-on-year)		-0.3 (-0.4)	6.5 (6.1)	3.2 (3.5)	3.2 (5.0)	1.9
Real disposable income (change in average year-on-year)		-17.7 (-20.3)	-9.2 (-6.4)	0.6 (-0.2)	3.2 (3.0)	2.3
Unemployment (% of labour force)		8.0 (8.0)	8.2 (8.5)	7.2 (7.7)	5.5 (5.9)	4.0
EURISK exchange rate		172.0 (172.0)	161.9 (162.6)	152.8 (155.6)	151.1 (156.0)	149.9

1. Figures in parentheses are from the forecast in *Monetary Bulletin* 2010/3.
2. Current account without accrued interest due to deposit institutions undergoing winding-up proceedings.

Table 2 Inflation forecast (%)[3]

Quarter	*Inflation (change year-on-year)*	*Inflation excluding tax effects (change year-on-year)*	*Inflation (annualised quarter-on-quarter change)*
		Measured value	
2009:3	11.0 (11.0)	10.1 (10.1)	8.6 (8.6)
2009:4	8.6 (8.6)	7.8 (7.8)	10.4 (10.4)
2010:1	7.4 (7.4)	6.1 (6.1)	4.9 (4.9)
2010:2	7.1 (7.1)	5.9 (5.9)	4.7 (4.7)
2010:3	4.3 (4.8)	3.6 (4.0)	-2.3 (-0.6)
		Forecasted value	
2010:4	2.8 (3.4)	2.1 (2.6)	4.2 (4.8)
2011:1	2.5 (3.0)	2.2 (1.6)	3.4 (3.2)
2011:2	1.6 (2.6)	1.4 (1.2)	1.3 (3.1)
2011:3	1.9 (2.8)	1.7 (1.4)	-1.2 (0.1)
2011:4	1.8 (2.7)	1.5 (1.3)	3.8 (4.6)
2012:1	1.9 (2.2)	1.8 (1.6)	3.7 (1.2)
2012:2	1.9 (2.3)	1.8 (1.6)	1.3 (3.2)
2012:3	1.9 (2.2)	1.8 (1.6)	-1.2 (-0.3)
2012:4	2.0 (2.3)	1.9 (1.7)	4.5 (5.1)
2013:1	2.3 (2.6)	2.3 (2.6)	4.8 (2.3)
2013:2	2.3 (2.3)	2.3 (2.3)	1.1 (2.2)
2013:3	2.3 (2.3)	2.3 (2.3)	-1.1 (-0.3)
2013:4	2.5	2.5	5.4

Annual average	*Inflation*	*Inflation excl. tax effects*
2010	5.4 (5.7)	4.4 (4.6)
2011	1.9 (2.8)	1.7 (1.4)
2012	1.9 (2.2)	1.8 (1.6)
2013	2.3	2.3

3. Figures in parentheses are from the forecast in *Monetary Bulletin* 2010/3.