MONETARY BULLETIN

2008•3

Contents

The objective of the Central Bank of Iceland's monetary policy is to contribute to general economic well-being in Iceland. The Central Bank does so by promoting price stability, which is its main objective. In the joint declaration made by the Government of Iceland and Central Bank of Iceland on March 27, 2001, this is defined as aiming at an average rate of inflation, measured as the 12-month increase in the CPI, of as close to 2½% as possible.

Professional analysis and transparency are prerequisites for credible monetary policy. In publishing *Monetary Bulletin* three times a year, the Central Bank aims to fulfil these principles.

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

The framework of monetary policy and its implementation and instruments are described in the chapter entitled "Monetary policy and instruments", on pp. 41-44 of this edition of *Monetary Bulletin*.

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Icelandic letters:

ð/Ð (pronounced like th in English this)
þ/Þ (pronounced like th in English think)
In *Monetary Bulletin*, ð is transliterated as d and þ as th in personal names, for consistency with international references, but otherwise the Icelandic letters are retained.

Symbols:

* Preliminary or estimated data.
0 Less than half of the unit used.
\- Nil.
... Not available.
. Not applicable.

Interest rate decision dates and changes in the publication of Monetary Bulletin in 2009

The publication schedule for *Monetary Bulletin* will change in 2009. The publication will appear in its customary form twice per year: at the beginning of May and the beginning of November. In between editions of the full-length *Monetary Bulletin* – in January and August – an updated forecast will be published on the Central Bank's website together with the Bank's report on economic and monetary developments and prospects. Publication of papers in *Monetary Bulletin* will also be discontinued. Instead, papers will appear in a special online publication as they are completed, and they will be compiled in printed form at the end of the year. The Bank's fixed interest rate announcement dates for 2009 will thus be eight in number: four concurrent with the publication of *Monetary Bulletin* and four interspersed between publication dates.

Publication dates for *Monetary Bulletin* and interest rate announcement dates in 2009

Date of interest rate decision	*Commentary published in*	*Weeks since prev. interest rate decision announcement*
January 29, 2009	*Monetary Bulletin* 2009/1 – forecast update	11
March 19, 2009	Press release	7
May 7, 2009	*Monetary Bulletin* 2009/2	7
June 25, 2009	Press release	7
August 13, 2009	*Monetary Bulletin* 2009/3 - forecast update	7
September 24, 2009	Press release	6
November 5, 2009	*Monetary Bulletin* 2009/4	6
December 17, 2009	Press release	6

Monetary policy statement by the Board of Governors of the Central Bank of Iceland

Of vital importance to stabilise the foreign exchange market and strengthen the króna

The króna depreciated sharply both before and after the financial crisis struck in October. The real exchange rate of the króna, currently at a historical low, is much lower than is sustainable for the long term. In November, the real exchange rate was approximately one-third below the average from 1980 to the present. At the end of November it was probably about 20% below its lowest point during that period. This drop in the exchange rate triggers higher inflation and jeopardises the financial position of many households and firms. Thus it is of paramount importance to restore exchange rate stability. The Central Bank will work towards that end.

The Government of Iceland and the Central Bank have formulated a monetary and economic policy that aims at creating lasting stability in exchange rate and economic matters. They consulted with the International Monetary Fund in preparing this policy, which focuses on three main objectives. First, it provides for tight monetary policy that fosters stability in the foreign exchange market and the strengthening of the króna. Second, it emphasises the necessity of exercising fiscal restraint. A temporary deficit is unavoidable in the wake of the shock that the economy has sustained. Long-term fiscal policy must aim at maintaining a manageable level of public sector debt and debt service in spite of lost revenues and increased expenditures. Finally, the policy recognises the need to restructure the financial system in accordance with transparent, internationally recognised principles.

In order to pave the way for stable foreign exchange market activity and in accordance with the agreement with the International Monetary Fund, the Board of Governors of the Central Bank raised the Bank's policy interest rate to 18% on October 28.

The temporary foreign exchange restrictions that were necessary in order to guarantee a basic level of functioning in Iceland will be lifted in stages. The Central Bank's guidelines for financial institutions concerning limitations on the sale of foreign currency have been revoked. Restrictions remain on foreign exchange transactions for movement of capital, and the mandatory submittal of foreign currency to financial institutions has been adopted. This is explained further in a separate press release issued by the Bank today.[1] The restrictions on foreign exchange transactions for the movement of capital will be lifted as soon as conditions allow.

1. *Monetary Bulletin* was published on November 6, 2008. The publication of the Policy Statement of the Board of Governors was delayed until after the Executive Board of the International Monetary Fund had approved the Stand-By Arrangement for Iceland and the subsequent measures had been introduced. The Policy Statement was published on November 28, 2008.

A considerable proportion of króna-denominated securities are owned by foreign investors. Lifting restrictions by stages will make it possible to unwind their króna-denominated positions in a systematic way, as the external balance permits, without undue impact on the exchange rate. This is in the best interests of the Icelandic nation as well as the foreign investors concerned.

Through an auction of Treasury securities in early December and new primary dealer agreements, new life will be breathed into the domestic bond market.

The Central Bank's foreign exchange reserves will strengthen substantially as a result of the loan from the International Monetary Fund. In addition, the currency swap agreements between the Central Bank of Iceland and its counterparts in Denmark, Norway, and Sweden have been extended until year-end 2009. Added to this will be loans from the Faeroe Islands, Poland, Russia, and the Nordic countries. Strong foreign reserves together with other factors will create conditions for a rising exchange rate.

It is not possible to rule out a drop in the exchange rate right after restrictions on foreign exchange transactions for trade in goods and services are lifted. Nevertheless, such a depreciation will likely be short-lived. Underlying economic developments will support the exchange rate of the króna. When domestic demand contracts, imports decline and a surplus develops in the trade account. The trade account is already in surplus and the current account deficit will disappear rapidly.

In light of the above, it is not assumed in advance that the Central Bank will need to intervene in exchange rate developments either by raising the policy rate or by selling foreign exchange. However, this cannot be ruled out. The Bank will maintain tight control over the banks' access to Central Bank credit until foreign exchange market stability has been achieved.

A stronger currency and a widening output slack will lead to disinflation and a subsequent easing of the policy rate. According to forecasts by the Central Bank and the International Monetary Fund, inflation will taper off quickly in 2009, with the twelve-month rise in prices dropping to below 5% by the end of the year.

Financial crisis causes sharp contraction and high inflation

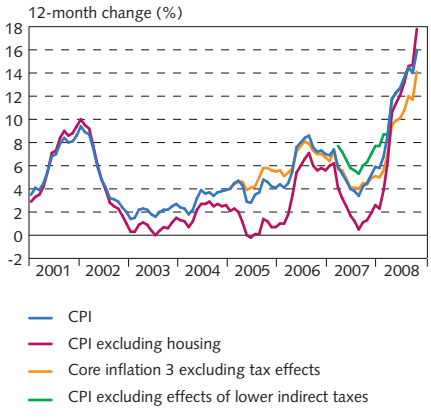
Iceland's monetary policy environment has undergone major changes following the failure of its leading financial institutions. Important channels of monetary policy have become more or less dysfunctional, and cross-border payment systems have been beset by serious and ongoing problems. As a result, the exchange rate of the króna fell precipitously, and a dual currency market developed: a domestic market in which currency is rationed in accordance with a priority list, in line with Central Bank of Iceland guidelines, and an informal offshore market, where the exchange rate is determined in limited and non-transparent transactions. The real exchange rate of the króna is currently much lower than is sustainable for the long term. The first-round effects of the exchange rate weakening were felt in October, when twelve-month inflation reached 15.9%. Inflation is expected to continue rising in the next few months and exceed 20% early in 2009. The outlook for inflation is extremely uncertain and will be determined by the exchange rate to a large extent. The credibility of the Central Bank's inflation target has been badly damaged, and it will be extremely difficult to continue on the basis of that target alone in the months to come. However, if policies to stabilise the króna at a level higher than that of the past several weeks prove successful, inflation could subside quite rapidly, followed by a policy rate easing, especially if wage settlements are extended without further wage rises. A severe recession lies ahead, with an especially large contraction in private consumption. Investment will also contract strongly in spite of the large-scale construction projects in Helguvík and elsewhere. Unemployment will rise and is expected to peak at 10% by year-end 2009. A sizeable surplus will develop quickly in the merchandise and service accounts, and the current account deficit will virtually disappear as early as 2009. It will take the economy a long time to recover fully. How rapid the recovery turns out to be depends primarily on the length of time it takes to stabilise the króna. Foreign direct investment will be very important as well. As long as there is a sizeable slack in the economy, maintaining a stable exchange rate and low inflation should be relatively easy. Although the exchange rate of the króna will temporarily have increased significance in policy rate decisions, a unilateral fixed exchange rate policy is not a viable option. Other things being equal, the inflation target will resume its position as the core of the monetary policy regime once exchange rate stability has been established. However, it is important to seek ways to strengthen the inflation targeting regime and simultaneously conduct a thorough reassessment of the optimal future monetary policy and exchange rate arrangements for Iceland.

I Inflation outlook and monetary policy

Financial crisis completely changes the premises of monetary policy

Although the failure of Iceland's largest banks in October further distorted the transmission channels of the Central Bank's policy rate, the foreign exchange swap market has been virtually non-functional since March. Lack of trust in domestic companies and financial institutions caused bottlenecks in cross-border payment systems, obstructing both inflow and outflow of capital. For a while, the króna fell virtually unhindered in a thin foreign exchange market. Finally, currency rationing was introduced in accordance with a specified order of priority, which led to the development of a dual foreign exchange market. The currency rationing scheme was still in effect in mid-October, when the most recent measurement of consumer prices was compiled, and has not yet been discontinued, although restrictions have been eased to some degree. Pass-through of the recent ISK depreciation into domestic inflation was discernible only to a limited extent in the

Chart I-1
Various inflation measurements
January 2001 - October 2008



Source: Statistics Iceland.

1. This article uses data available on November 3, 2008, but the forecast is based on data until October 27.

October CPI release, as retail inventories appear to have been abundant before the crisis. Twelve-month inflation measured 15.9% in October, and core inflation about 14%.

Economic developments are shrouded in uncertainty at present because of the financial crisis. This uncertainty is reflected in the forecasts published in this *Monetary Bulletin*. Because the channels for monetary policy transmission are largely ineffective, it is not possible to publish forecasts in the way the Central Bank has done in recent years; that is, by publishing the policy rate path that the Bank's staff deem most conducive to the attainment of the inflation target within an acceptable horizon. In the near term, the policy rate will primarily take account of exchange rate developments, which are extremely uncertain at present.

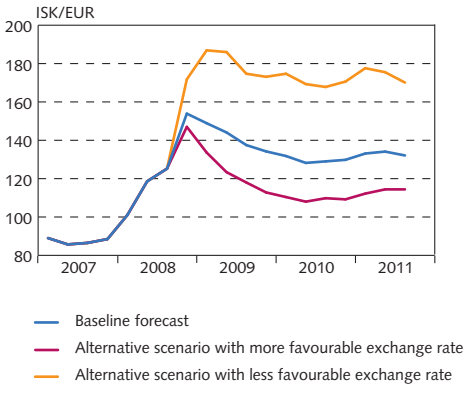
Formally, the Central Bank's inflation target is still in effect, and by law, price stability remains the principal goal of monetary policy. Under the current circumstances, however, it is impossible to base monetary policy decisions on the inflation target alone. While attempts are being made to accomplish one or the other of these objectives – to re-establish the foundations for an inflation targeting framework with a floating exchange rate, or to find another long-term solution for the nation's exchange rate and monetary affairs – in the interim, it is necessary to create a credible monetary anchor by some means. It is clear that developments in the exchange rate will have a decisive effect on the depth and duration of the recession and the time required to regain control of inflation. For this reason, the Central Bank will concentrate on achieving exchange rate stability as soon as possible.

Confidence is a precondition for a stronger currency

The greatest source of uncertainty in the current forecasts is the exchange rate of the króna. At first, it will be determined in particular by the speed with which confidence in the króna can be restored and relatively normal currency market functioning re-established. The real exchange rate is extremely low. Furthermore, underlying trade flows will support the króna over the medium term. A substantial trade surplus is expected to emerge soon. The balance sheet of the overall economy will also shrink considerably once the foreign liabilities of the financial system have been settled or largely written off. On the other hand, the central government's foreign liabilities will increase, which will have a negative effect on the income balance. It is estimated that the overall effect will be to narrow the deficit on income considerably. Overall, projections for 2009 indicate a small current account deficit that will be fully funded by foreign direct investment.

A broadly balanced current account will support the króna over the medium term. However, substantial initial pressure on the króna once it is re-floated cannot be ruled out. Owners of domestic bonds, a large proportion of whom are non-residents, may attempt to sell their ISK assets once an organised foreign exchange market re-opens. This *Monetary Bulletin* includes two alternative scenarios, in addition to a baseline scenario, reflecting this uncertainty. The baseline scenario is based on a moderate appreciation of the króna. The exchange

Chart I-2
Exchange rate of the euro



Source: Central Bank of Iceland.

rate against the euro rises from approximately 154 kr. per euro in Q4/2008 to 134 kr. per euro a year later, and then remains relatively stable over the forecast horizon. It is assumed that the Central Bank's policy rate and occasional intervention in the foreign exchange market will be applied so as to prevent the króna from deviating too far from the path assumed in the baseline scenario.

ISK depreciation will give rise to higher short-term inflation, but a sizeable economic slack will facilitate more rapid disinflation over the medium term

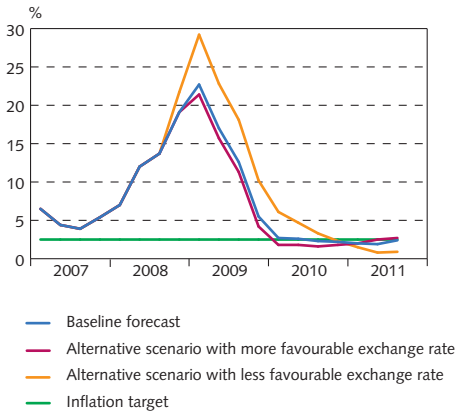
For the short term, inflation is determined primarily by the cost-push effects of the depreciation of the króna. The speed with which the króna rebounds is critical. Retailers' mark-ups have probably been depleted to a large extent, prompting them to pass cost increases through to retail prices in spite of a sharp contraction in demand. When the króna strengthens, however, retail mark-ups will likely remain squeezed. Given the contraction in demand and increasing competition for market share in a shrinking market, inflation should taper off rather quickly. According to the baseline forecast, annual inflation will peak at nearly 23% in Q1/2009 but will fall below 5% by year-end 2009 and will be at target from early 2010 onwards. The rapid decline in inflation depicted in the baseline forecast is based on the assumption of moderate wage growth during the forecast horizon and a stable exchange rate. This implies that real wages will fall considerably and that real disposable income will contract by as much as 25% between year-end 2007 and year-end 2009. GDP will shrink by over 8% in 2009 and by another 2% in 2010. Private consumption is forecast to shrink by even more, or 25% in 2009 and nearly 4% in 2010. Unemployment will rise swiftly over the medium term and is projected to peak at nearly 10% by year-end 2009. Economic recovery is expected to begin in 2011, however, with output growth estimated at just over 3% for that year. The magnitude of the contraction and the subsequent recovery are in line with other countries' experience of currency and banking crises (see Box IV-1).

Based on the above, it is clear that a sizeable negative output gap will emerge in the next few years, which will facilitate disinflation provided that the króna appreciates, partly in response to tight monetary policy.

Monetary policy must support the exchange rate

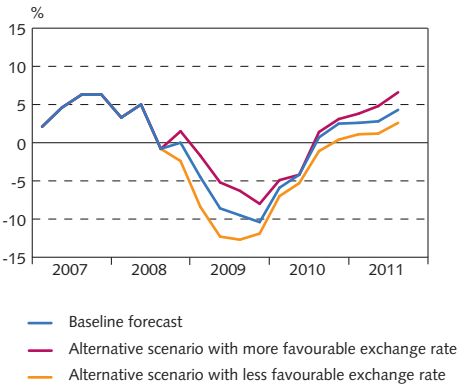
The policy rate and, to some extent, intervention in the foreign exchange market will be applied with the aim of strengthening the króna. For the long term, it is critical to create conditions that allow the Central Bank to reduce the policy rate and lighten the burdens that the financial crisis will impose on the domestic economy. The strengthening of the króna and the stabilisation of inflation are the prerequisites for this. The real policy rate is actually very low in spite of the high nominal rate. A precondition for exchange rate stability is that domestic currency bondholders and depositors have sufficient incentive to hold their ISK assets. This applies to residents and non-residents alike, but roughly estimated, about half of issued domestic

Chart I-3
Inflation



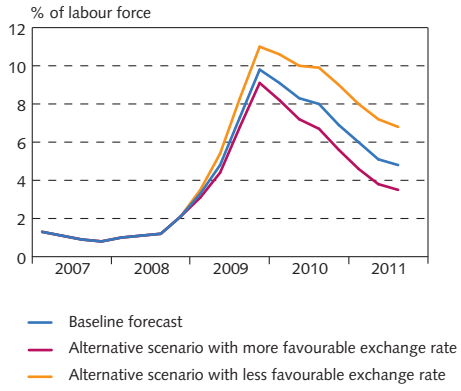
Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-4
Economic growth



Sources: Statistics Iceland, Central Bank of Iceland.

Chart I-5
Unemployment



Sources: Statistics Iceland, Central Bank of Iceland.

bonds are held by non-resident investors. High nominal interest rates notwithstanding, considerable currency outflow could ensue once fully a functional foreign exchange market re-opens. Therefore, it is also necessary to have ample foreign exchange reserves so as to guarantee as swift a recovery as possible from any depreciation of the króna after it is re-floated. Loans from the International Monetary Fund and others should provide the Central Bank with access to ample resources for this purpose.

The baseline scenario assumes that foreign exchange market stability will be established relatively quickly and will lay the foundations for a gradual appreciation of the króna. One of the alternative scenarios illustrated in Charts I-2 through I-5 is based on the assumption that this will be a relatively lengthy process. This implies that excessive weakness of the króna will last longer, concurrent with a further decline in asset prices, a deeper recession, and more persistent inflation. The agreement with the IMF and others, which guarantees increased foreign exchange reserves, and the economic programme on which the agreement is based reduce the probability of such an outcome. In the latter alternative scenario, confidence in the króna is restored far more quickly than in the baseline scenario, as it assumes that normal foreign exchange market functioning will resume sooner. The króna appreciates more rapidly and stabilises at a real exchange rate above that in the baseline scenario, albeit somewhat below the average of the past decade. The erosion of disposable income and the economic contraction would be less pronounced under this scenario. It would entail a moderate current account deficit that would be largely funded with foreign direct investment.

A credible economic plan reduces the cost of rebuilding the economy

The significance of the agreement between the Government of Iceland, the Central Bank, and the IMF lies not only in access to credit, which can be used to some extent to support the króna; it lies also - and more importantly – in the confidence engendered by Iceland's adherance to credible economic policy as outlined in the agreement: monetary policy that aims at low inflation and a higher and more stable exchange rate and low inflation, coupled with an ambitious strategy of fiscal consolidation, following significant short-term deterioration of the fiscal balance. The cost of recapitalising the banking system is quite uncertain, but will undoubtedly be substantial. Public sector revenues will decline sharply in real terms over the next several years due to reduced household and business incomes, declining asset prices, and diminishing private consumption and imports. At the same time, government expenditures will automatically increase. It is unlikely that public sector revenues will return to previous levels in the near future, and the outlook is for a substantial increase in debt. Thus it is necessary to adopt broad-based fiscal measures in coming years, with the objective of re-establishing fiscal balance and ensuring a sustainable debt profile over the medium term.

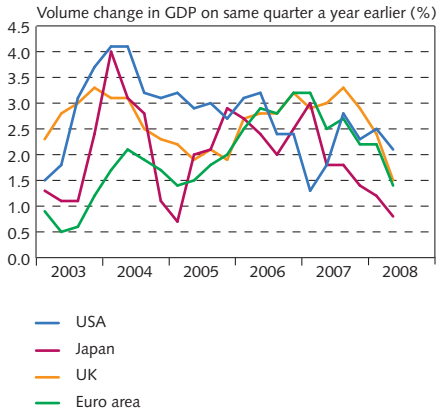
The monetary policy framework must be strengthened

For the long term, it is of paramount importance to learn from the setbacks that the implementation of monetary policy in Iceland has suffered. Basic trust and a functional transmission mechanism are preconditions for the successful implementation of an inflation-targeting regime. These preconditions do not exist at present. A policy aimed at a stable, realistic exchange rate could prove successful while there is significant slack in the economy and the current account is balanced. This does not imply that a fixed exchange rate regime is desirable, since it is unlikely that a unilateral fixed exchange rate regime will be more successful for the long term than it was during previous attempts at maintaining an exchange rate target. Therefore, other things being equal, the Central Bank will return to inflation targeting as soon as conditions warrant it. At the same time, it is important to strengthen the institutional framework of inflation targeting and stress supportive economic policy, including a fiscal framework that takes the inflation target into account.

II External conditions and exports

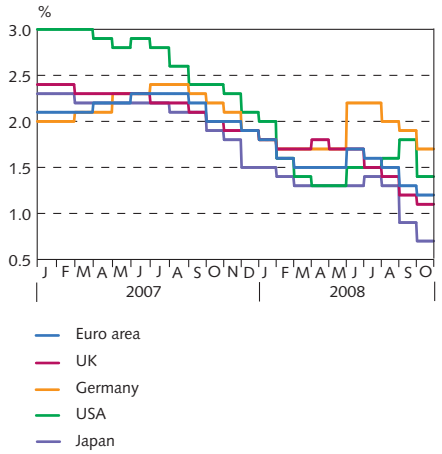
The global financial crisis has deepened, but its full impact on the real economy has yet to be felt. GDP growth forecasts have been revised downwards all over the world. The outlook is for substantially lower output growth in 2009 than in 2008, and a recession is expected in many countries. While food and energy prices have declined significantly in recent months, the effect on the global economy has only been realised to a limited extent. Price rises earlier in the year combined with declines in asset markets have weakened private consumption, however. Dampened global output growth will have an effect on domestic export growth in coming years and will make a negative impact on export prices and overall terms of trade. Export volume is expected to grow by almost 10% this year, despite difficulties in payment intermediation to and from Iceland as a result of the currency crisis, which is expected to have a negative effect on exports until well into 2009. As currency trading returns to normal, exports are expected to grow markedly and make an important contribution to the recovery of the domestic economy.

Chart II-1
International economic growth
Real GDP growth Q1/2003 - Q2/2008



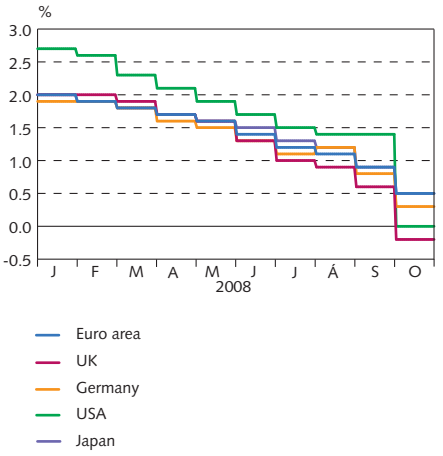
Source: Reuters EcoWin.

Chart II-2
Output growth forecasts in 2008 in main trading areas
Time axis shows month of forecast



Source: Consensus Forecasts.

Chart II-3
Output growth forecasts in 2009 in main trading areas
Time axis shows month of forecast



Source: Consensus Forecasts.

Weak global output growth expected in 2009

The international financial crisis that originated in the United States has now spread virtually all over the world. Its consequences have been most severe in countries with significant imbalances prior to the crisis, including Iceland, Hungary, and South Africa (for a review of the global financial crisis, see Box II-1).

In the United States and other advanced economies, conditions in financial markets have deteriorated sharply since early autumn. Stock prices have plummeted, risk premia have risen, and money markets have been in disarray. Illiquidity hampers banks and other financial institutions and affects non-financial businesses as well.

Output growth in developed countries is likely to be insignificant or negative in the near term, and growth is slowing in emerging market countries as well. As a result, global output growth will slow down considerably. According to the most recent 2009 projections from Consensus Forecasts, GDP will be up 0.5% in the euro area and Japan, down 0.2% in the UK, and flat in the US.

In most advanced economies, the inflation outlook for 2009 has improved slightly, as oil and food prices have fallen in the latter half of the year. Recent price hikes from British energy producers will sustain considerable inflation in the UK in the coming months, however. UK inflation is forecast at roughly 2.9% in 2009.

The export sector will support the Icelandic economy over the medium term

Exports have increased sharply so far in 2008, due in particular to increased aluminium production; however, exports of other industrial goods, such as medical supplies, pharmaceuticals, and food processing equipment, have also been on the rise. The increased production capacity at the Fjardaál aluminium smelter in East Iceland drove aluminium exports rapidly upwards in the second quarter.

There has been some disruption in payment flows for exports in October. This could affect total exports in the fourth quarter and even into the beginning of 2009. The continuing resilience of the export sector is one of the preconditions for a rapid recovery of the economy. Thus it is critical that payment systems and export companies' access to credit, both in Icelandic krónur and in foreign currency, return to normal as soon as possible, and that the import of raw materials for export manufacturing function smoothly.

Imports have contracted so far in 2008, and the contraction is likely to deepen in the fourth quarter, as domestic demand contracts in the wake of the depreciation of the króna and the foreign currency shortage.

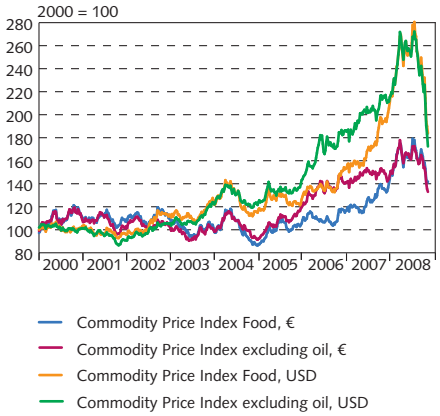
The global financial crisis has contributed to falling commodities prices

The price of aluminium has dropped sharply, as has the price of other commodities. At the beginning of October it had fallen by one-third from its peak in July. This will affect export values negatively in the final months of the year, but the negative impact will be partly offset by the depreciation of the króna. For several years, increased demand from Asia (China in particular), production difficulties in various aluminium-manufacturing countries, rising production costs, increased commodity market activity by investment funds and hedge funds, and the weak US dollar have fuelled price hikes. The global financial and banking crisis has changed all of this. Demand is declining all over the world, production and inventories have increased, the dollar has appreciated against other currencies, energy prices have fallen, investment and hedge funds are deleveraging, and local production problems have been resolved in most areas. The forecast assumes that the average price of aluminium will be 3½% lower in 2009 than in 2008. According to the forecast in this *Monetary Bulletin*, aluminium prices are expected to rise by 7% in 2010, when the balance between supply and demand has been restored and inventories have shrunk. At the same time, metals production for export will increase by about 6% in the next few years. In 2011, however, production is forecast to increase by about one-fifth when the aluminium smelter at Helguvík commences production.

The price of Icelandic marine products rose nearly 30% in foreign currency terms between mid-2004 and year-end 2007 but has been broadly unchanged in 2008. Market participants expect most prices to fall in the near term, due to declining private consumption in Iceland's principal trading partner countries in the wake of the global financial crisis. The competitive position of high-value Icelandic products will also deteriorate. This can already be seen in the contraction in exports of fresh fish by aircraft. Icelandic fish products are generally high-value products, and it is likely that consumers will turn to less expensive items as economic conditions deteriorate. The Central Bank's forecast assumes a 1½% rise in marine product prices in 2008, a 3% drop in 2009, and unchanged prices in 2010-2011.

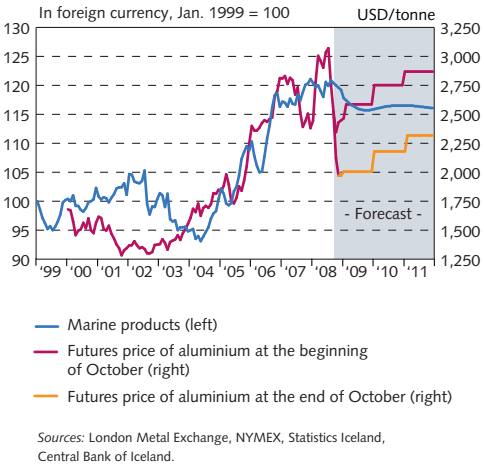
Oil prices fell by nearly 30% in the first half of October. A special meeting of the OPEC nations is scheduled for mid-November, at which time they are expected to decide to curtail production in order

Chart II-4
World commodity market prices
Weekly data January 7, 2000 - October 24, 2008



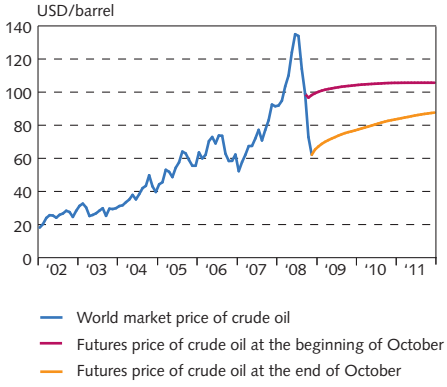
Source: Reuters EcoWin.

Chart II-5
Prices of marine exports and aluminium



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

Chart II-6
World market price of oil[1]
Monthly data January 2002 - December 2011



1. Forecast from beginning of October 2008.
Sources: Bloomberg, NYMEX, Reuters EcoWin.

to forestall further decline in oil prices. Whether a tightening of supply will suffice to stop prices from falling or turn them around in the next few months will depend on the effects of the financial crisis on global output growth. The forecast assumes a roughly 6% decline in oil prices in the coming year, followed by annual increases of 2½% in 2010 and 2011.

The above factors are expected to have a 1% negative impact on the terms of trade for goods and services next year, in addition to the almost 7% fall in the terms of trade this year. In 2010, a 1% recovery is expected, followed by a 1½% reversal in 2011.

Difficulties in payment intermediation harm exports

Export growth has been substantial so far this year. The outlook is for a year-on-year contraction in Q4, as a result of the difficulties in payment intermediation in the wake of the currency crisis and the substantial export growth in Q4/2007. Export growth for the year as a whole will be robust, however, at almost 10%. The Bank's forecast assumes that the above-mentioned difficulties in payment intermediation will affect exports into early 2009, causing a slight contraction for the year as a whole. The outlook is for healthy export growth as soon as exports return to normal and production at the Helguvík aluminium smelter begins. Exports will play an important role in economic recovery following the financial crisis.

Table II-1 Exports and main premises for the outlook for external conditions

	Change from prior year (%) unless otherwise specified[1]			
	2008	*2009*	*2010*	*2011*
Exports of goods and services	9.6 (4.7)	-0.5 (-1.0)	2.6 (3.9)	5.5
Marine production for export	-8.1 (-13.0)	-2.9 (-3.0)	0.0 (0.0)	0.0
Metals production for export	73.2 (73.3)	4.5 (3.9)	1.7 (1.7)	20.3
Export prices of marine products	1.4 (2.5)	-2.9 (0.0)	0.0 (2.0)	0.0
Aluminium prices in USD[2]	2.3 (1.8)	-3.4 (3.5)	6.8 (1.4)	0.0
Foreign fuel prices[3]	50.8 (68.0)	-6.3 (9.3)	2.8 (-0.8)	2.5
Terms of trade for goods and services	-6.8 (-2.9)	-0.9 (-0.1)	1.1 (0.2)	-1.4
Global inflation[4]	4.2 (3.3)	2.6 (2.2)	2.0 (2.1)	2.0
Global GDP growth	2.1 (1.8)	1.1 (1.5)	2.1 (2.0)	2.4
Foreign short-term interest rates (%)[5]	4.3 (4.3)	4.0 (4.2)	4.0 (4.0)	4.0

1. Figures in parentheses represent the forecast from *Monetary Bulletin* 2008/2. 2. Based on aluminium futures. 3. Based on fuel futures. 4. Consensus Forecasts. 5. Based on weighted average forward interest rates of Iceland's main trading partner countries.

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

Box II-1

Global financial crisis deepens

The beginning of the global financial crisis can be traced to the burst of the US housing bubble as the weaknesses and extravagance embedded in the sub-prime mortgage market came to the fore. Defaults on sub-prime mortgages rose sharply, leading credit rating agencies to lower their ratings of sub-prime related mortgage products in the summer of 2007. Banks on both sides of the Atlantic sustained losses as a result. UK mortgage lender Northern Rock was the first institution to experience liquidity problems and subsequently sought assistance from the British government. News of Northern Rock's difficulties leaked out, and there was a run on the bank in September 2007, which ultimately led to its nationalisation the following February.

The run on Northern Rock was the first on a British bank since the mid-eighteenth century and the first major run on a Western banking institution since the early 1970s. The risk of runs on finan-

cial institutions has grown substantially as a result of increased financial vulnerabilities. In order to reduce the likelihood of such an occurrence, many governments have declared publicly that they will guarantee deposit balances in commercial banks far beyond statutory deposit insurance requirements.

In the US, investment bank Bear Stearns was the first major casualty. Bear Stearns had developed a severe liquidity problem, which was resolved when JP Morgan Chase took over the bank in March 2008 with assistance from the US Federal Reserve Bank. The rationale behind the Fed's assistance was the systemic importance of Bear Stearns and the grave repercussions for the securities markets if the bank's assets should suddenly be sold off.

The financial system's problems were not limited to excessive sub-prime lending, however. Abundant liquidity, historically low interest rates, and substantial flow of capital to the US and other countries stimulated growing risk appetite, rising indebtedness, and the development of complex and non-transparent structured products (for further information on the origins of the US sub-prime crisis, see Box II-1 in *Monetary Bulletin* 2008/1).

The unrest in the financial markets intensified during the summer of 2008. Real estate prices continued to fall, and GDP growth slowed down in the US and elsewhere. This compounded the uncertainty surrounding financial institutions' ability to withstand a challenging economic climate. Investors and creditors lost confidence in certain firms, which made it difficult for those firms to finance their activities. Listed companies' share prices began to fall. The US government-guaranteed mortgage lenders Fannie Mae (Federal National Mortgage Association, FNMA) and Freddie Mac (Federal Home Loan Mortgage Corporation, FHLMC), the investment bank Lehman Brothers, and American International Group (AIG), the largest insurer in the US, were among those worst affected.

Early in 2008, there were growing concerns over payment difficulties at Fannie Mae and Freddie Mac, which own a substantial portion of the unsecured mortgages in the United States and had limited equity to support their operations. In an attempt to prevent the housing market slump from deepening, the US Federal Reserve Bank tried to rescue the two mortgage lenders in mid-July, in part by granting them access to low-interest loans on terms similar to those received by commercial banks and by removing the prohibition on Treasury Department purchases of stock in Government-Sponsored Enterprises (GSEs). But the plan did not yield the expected results. Investors' fears that the companies would go bankrupt escalated, and concerns intensified about a domino effect on the financial institutions and corporations worldwide that had invested in their bond issues. By September the situation was so dire that the US government took over the operations, assets, and liabilities of both mortgage lenders.

The next companies to be severely affected were Lehman Brothers and AIG. Like the mortgage lenders, they were large and deeply embedded in the American financial market. The initial attempts to solve their problems through the involvement of private investors proved unsuccessful. In Lehman's case, public sector assistance was not an option, either, as the company did not have sufficient collateral to ensure that a loan from the Federal Reserve would be repaid. In spite of Lehman's size, rather than making an attempt to rescue it, the government opted to face the consequences of its demise on financial stability. On the other hand, insolvency at AIG was considered likely to make a substantial negative impact on global financial stability and US economic developments. AIG is a large issuer of credit default swaps, and had it gone bankrupt, numerous financial institutions would have been forced to raise large

amounts of capital, which would have proven difficult in the current economic climate. Thus it was decided in mid-September to grant AIG a loan in order to save it from bankruptcy.

The effects of Lehman's collapse, the difficulties at AIG, and growing concerns about GDP growth in the US and elsewhere exacerbated the unrest in the global financial markets. Share prices plummeted. Widespread withdrawals from the largest money market funds in the US closed off yet another source of liquidity for financial institutions. Short-term borrowing costs soared, and credit market liquidity dried up. But the consequences were not long in coming. Assets were sold off at garage sale prices, interest premia shot up to unprecedented levels, and CDS spreads hit record highs. Interbank lending virtually stopped, and investment banks, whose high debt ratio makes them particularly sensitive to tight credit markets, had serious problems. The reduced flow of capital to households and businesses as a result of the financial crisis and the financial institutions' liquidity problems makes a profound negative impact on the real economy, thereby dampening GDP growth still further.

The problems spread quickly. As Lehman Brothers headed for bankruptcy, the outlook was poor for another investment bank, Merrill Lynch. It was clear that bankruptcy at Lehman would greatly affect Merrill Lynch. Ultimately, Bank of America took over Merrill Lynch and saved it from collapse. Thereafter, the remaining investment banks on Wall Street – Goldman Sachs and Morgan Stanley – applied for commercial banking licences and were approved by the US Federal Reserve Bank. This enabled the two banks to receive regular deposits and placed them under the surveillance of the Fed, as other US commercial banks are.

This series of events was also a turning point in the history of American banking, as it marked the end of a 75-year era of investment banking on Wall Street. In recent years, Wall Street investment banks have generated handsome returns, but their performance has deteriorated rapidly following the credit crunch. After the rescue of Bear Stearns and Merrill Lynch and the fall of Lehman Brothers in September, genuine doubts about the business model of American investment banks came to the surface. Investors appear to have lost faith in investment banks' ability to withstand shocks, as their indebtedness exceeds that of commercial banks and they do not benefit from the cushion provided by regular deposits.

At the end of September, yet another US banking giant went bankrupt: Washington Mutual. Massive withdrawals in September created a staggering liquidity shortage, and the regulatory authorities declared the bank insolvent. The collapse of Washington Mutual, one of the nation's largest sub-prime lenders, was the largest commercial bank failure in US history. Claimants suffered severe losses.

The financial crisis has not been limited to American financial institutions, however. Banks and financial companies all over Europe have experienced serious problems. Risk premia have risen, and in some countries house prices have fallen in line with slowing output growth and shrinking credit supply. It has been difficult for financial firms to obtain capital, and assets are illiquid and must be sold at depressed prices. Fears of a wave of bankruptcies such as that in the US have compounded concerns about the position of numerous financial companies, with severely negative consequences for the financial markets. The problem has been addressed with acquisitions and mergers in many parts of Europe.

After having taken over Northern Rock, the British government acted as an intermediary in Lloyds TSB's emergency takeover of HBOS. In addition, Bradford & Bingley, one of the UK's largest mortgage lenders, was nationalised when market conditions proved

too difficult. Hypo Real Estate, Germany's second-largest lender, was granted a government loan to avert bankruptcy. Belgium's largest bank, Fortis, was saved from collapse when the Belgian government acquired a 49% stake in the Belgian part of the bank, the Dutch government acquired a similar holding in the Dutch part, and the Luxembourgian authorities granted a loan to Fortis in Luxembourg. Various other financial undertakings in Europe have faced difficulties as well, including companies in France and Denmark.

Government action plans

Central banks in numerous countries have responded swiftly and injected liquidity into the market by various means. The US Federal Reserve has increased the supply of money in circulation in order to counteract the liquidity crunch and has lowered its federal funds rate in response to the economic slump. The Fed has announced various new plans to inject short- and long-term liquidity into the financial system and offset the illiquidity in the conventional markets. It has also attempted to revive the credit markets; for example, by providing temporary guarantees on money market funds and by purchasing reliable corporate and bank bonds.

The Federal Reserve Bank's monetary measures, both conventional and unconventional, and its takeover of large financial institutions have not yet sufficed to guarantee the stability of the financial system, however. Further government action has proven necessary. At the beginning of October, the US Congress approved a legislative bill establishing a fund to assist the banking system. The bill authorises the government to use up to 700 billion US dollars to purchase troubled assets from banks and to purchase shares without voting rights in financial companies.

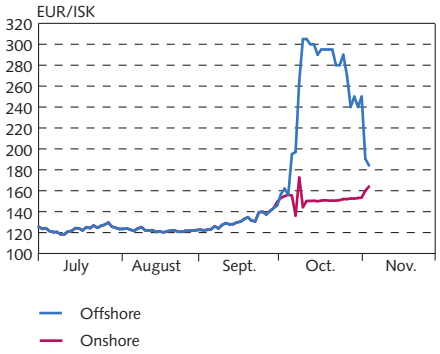
Initially, it was the British government that took the initiative in early October by resolving to intervene more decisively in the financial crisis. Euro area countries then did likewise, followed by the United States. The British government announced that it had decided to purchase preferred shares in British banks for 50 billion pounds sterling in order to prevent further financial market declines in the UK. The banks that fall under the government's rescue plan are the Royal Bank of Scotland, Barclays, and Nationwide Building Society. In addition to purchasing preferred shares, the Bank of England intends to lend the banks 200 billion pounds sterling in accordance with a special liquidity scheme. Euro area countries have also intervened in their financial markets. The German government plans to provide substantial capital in the form of bank guarantees, particularly in the interbank market, in the hope that the government guarantees will enable the banks to raise additional capital in the market, thus obviating the need for further assistance. Some 80 billion euros will be invested in financial companies that have not been able to acquire funding elsewhere. The French government has declared repeatedly that no French bank will be allowed to become insolvent. The French have established two funds: one for government guarantees on the interbank market, and the other to assist distressed financial institutions by allowing the government to purchase shares in them. While rescue packages have been announced by most countries in the euro area, their scope and capitalisation vary. The most common action involves government pledges to guarantee deposits. Many countries have also pledged temporary government guarantees on new loans taken by their banks, including interbank loans. In addition, the Spanish government decided to purchase assets from banks in Spain, thereby expanding their lending capacity. Moreover, in a co-ordinated action, the central banks in the United States, the United Kingdom, the EU, Canada, Switzerland, and Sweden lowered their policy interest rates by 0.5% in early October.

The roots of the problems facing the world's financial systems lie in the risk that accumulated over a prolonged period of low interest rates and abundant liquidity. As in most earlier financial crises, these conditions gradually eroded the confidence of investors and the general public in the strength of financial institutions and markets. Some countries were more vulnerable than others. The first step in solving the problem is to rekindle sufficient faith in financial institutions. This is a difficult task, not least due to the imminent recession in Western countries. The economic contraction began before the upheaval in the capital markets reached the levels of the past few weeks. The US housing market remains one of the chief reasons for the fragility of the real economy and the overall financial system. Growth in private consumption, investment, and the labour market has slowed considerably; therefore, it will take the credit markets quite a while to come to life again. Waning GDP growth in most economies means that exports will not provide the support that they did previously. However, falling oil, commodity, and food prices will bolster individuals' purchasing power.

III Financial conditions

The principal task of the government and the Central Bank in the wake of the financial crisis is to rebuild the banking system and ensure that important markets for the transmission of monetary policy return to normal as soon as possible. Initially, the most critical project is to restore bond and foreign exchange market activities and guarantee effective price formation. The strengthening of the foreign exchange reserves, with the assistance of the International Monetary Fund and others, plays an important role in resolving these matters, as does credible economic policy, which is the precondition for that assistance.

Chart III-1
The ISK exchange rate markets[1]
Daily data, July 1, 2008 - November 4, 2008



1. The offshore exchange rate is an approximate mid-price.
Sources: Investment banks, Reuters Matching, Central Bank of Iceland.

Domestic financial markets non-functional

After a considerable drop in the exchange rate earlier in the year, the króna fell precipitously just before and after the banks collapsed. At the end of September, the Central Bank's fixing rate of the króna had fallen 60% against the euro and 64% against the US dollar since the beginning of the year, but there has been great volatility since then and the króna has continued to fall. These figures do not tell the entire tale, however, because foreign currency trading was subjected to stringent restrictions and the domestic foreign exchange market became disconnected from the offshore market when the banks collapsed. Ultimately, the Icelandic foreign exchange market closed entirely.

There have also been problems in the interbank and swap markets for krónur. This creates serious problems for monetary policy implementation, as normal activity on these markets is a key premise for effective financial market functioning and thereby for the transmission of monetary policy.

Central Bank measures to restore foreign exchange market functioning

Earlier in the year, various measures were taken in an attempt to contain the outflow of foreign capital. The policy rate was raised and issuance of Treasury notes and certificates of deposit increased, and ways to strengthen the foreign exchange reserves were sought. However, the collapse of the banking system shattered all of the premises for interbank foreign exchange activity. As a result, foreign currency stopped flowing into the domestic market. The Bank decided to establish a euro auction market in order to re-establish currency trading with krónur. A shortage of foreign currency developed, as foreign credit lines were closed and exporters had difficulty importing currency to Iceland. The Central Bank placed temporary restrictions on currency transactions in the form of guidelines on moderation of currency outflow.

Daily auctions provide an indication of the exchange rate of the króna against other currencies, with the exchange rate in the auction determined by supply and demand. During the first few days of auction activity, demand for foreign currency was strong, as the foreign exchange market had been inactive for some time. The increased demand may also have come from importers needing to settle with their foreign suppliers, who increasingly required cash payment

because of the current conditions in Iceland. Foodstuffs, pharmaceuticals, petroleum products, and public expenditure were given priority, and the banks have been discouraged from using incoming foreign currency for financial foreign exchange transactions.

The rationing of foreign currency results in a dual foreign exchange market, with some transactions taking place on the unofficial market both domestically and abroad. Those without access to foreign currency have been willing to purchase it at prices above those on the formal market. Foreign banking institutions' exchange rate listings for the króna are much lower than domestic listings. Holders of foreign currency, such as exporters, have not benefited from importing more currency to Iceland than is absolutely necessary because of the Central Bank's low official exchange rate. It is therefore critical to lift the restrictions on foreign exchange transactions as soon as possible so that the exchange rate can be determined by supply and demand. Until this happens, confidence will not be fully restored in the currency market.

Exporters must be able to bring currency into Iceland

Foreign currency revenues from exports trickled slowly into the country after the banks fell. At first, changes were made to payment systems in order to simplify the process and guarantee the flow of foreign currency from export companies to Iceland. Among other things, foreign payments to customers of the old banks were routed through the Central Bank, which formally declared that it would guarantee the delivery of all incoming payments routed through its accounts.

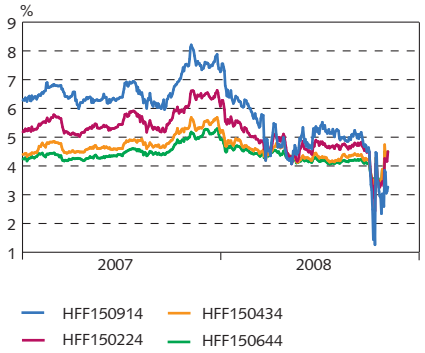
Over the medium term, it is most important that exporters have sufficient incentive to move their foreign revenues to Iceland. As long as foreign currency is rationed at an exchange rate that does not harmonise supply and demand, there will be a dual currency market and multiple exchange rates. Those holding foreign currency can receive a more favourable exchange rate by trading outside the official foreign exchange market. The informal foreign exchange market indicates that the exchange rate of the króna must be lower in order to strike a balance between supply and demand. Exporters, further discouraged by low or even negative real returns on domestic financial assets as inflation rises due to the depreciation of the króna, benefit from delaying the purchase of krónur as long as possible. Restrictions on currency outflow also make holders of foreign currency reluctant to sell more currency in the foreign exchange market than is absolutely necessary. Therefore, it is unlikely that foreign currency will begin to flow freely into the domestic market before the restrictions on capital outflows have been lifted and confidence in Iceland's financial system and exchange rate policy has been restored.

Removal of capital restrictions could trigger massive currency outflow

The sizable stock of fairly liquid ISK assets owned by non-residents amplifies the uncertainty related to the opening of the foreign exchange market. Under the current circumstances, foreign investors cannot close their positions in Iceland. Once investors' access to foreign currency increases, substantial downward pressure on

the exchange rate could result. Prior to the collapse of the banks in October, non-residents owned roughly 400 b.kr. in government-guaranteed bonds; that is, in Treasury notes, Cental Bank certificates of deposit, HFF bonds, Housing Bonds, and Housing Authority Bonds. When capital restrictions are lifted, non-residents may choose to close their positions, and the exchange rate could therefore drop considerably. The effects will be temporary, however, if economic and monetary policy are credible and the foreign reserves large enough to create confidence in the Central Bank's ability to support the currency market. After a period of outflow, króna-denominated bonds will ultimately be purchased by investors interested in holding them in the hope of receiving high returns due to the expected rise in the exchange rate. This would create the conditions for sustained appreciation of the króna.

Chart III-2
Yields on indexed long-term bonds
Daily data January 3, 2007 - November 3, 2008



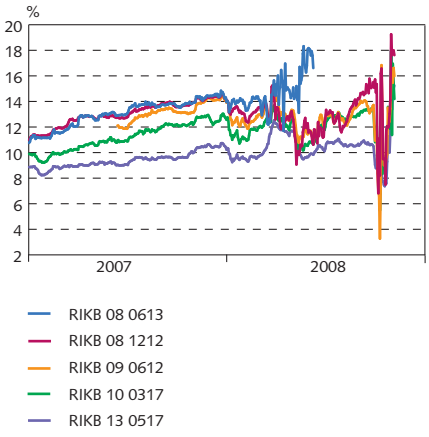
Source: Central Bank of Iceland.

The bond market must be revitalised

Market making with government-guaranteed bonds has not been active since October 7. It is of paramount importance that this situation be rectified because effective price setting in the market for government-guaranteed bonds is a prerequisite for effective price formation in other markets. It is important that new market makers enter the market as soon as possible. The Central Bank is working towards achieving this.

Yields on government-guaranteed bonds fell considerably due to increased demand and investor flight to more secure assets, but yields have normalised recently. It is clear that the supply of government-guaranteed instruments will increase over the medium term. The government faces increased obligations due to the collapse of the banks and their re-financing, as well as the anticipated fiscal deficit in the years to come. Therefore, yields on government-guaranteed bonds are likely to rise in coming months despite strong demand. As time passes, an increased supply of government-guaranteed instruments coupled with high yields should promote a stronger króna, which is the most important goal of monetary policy at present.

Chart III-3
Nominal Treasury bond yields
Daily data January 3, 2007 - November 3, 2008



Source: Central Bank of Iceland.

Robust demand for liquidity

Demand for liquidity provided by the Central Bank increased as the year passed, partly because of increased issuance of certificates of deposit and Treasury notes, which drained liquidity from the markets. During the final days before the collapse of the banking system, the Central Bank's collateral loans and overnight loans increased greatly. Demand remains strong, but due to the collapse of the three largest banks, fewer securities are deemed eligible for these facilities. The Central Bank's sale of foreign currency in its daily auctions further reduces the supply of ISK liquidity on the market. Therefore, it is necessary to ensure that measures designed to facilitate access to foreign currency do not result in an excessive shortage of Icelandic krónur. This is particularly important until market functioning returns to normal. However, access to ISK liquidity must not be so easy that it undermines the Central Bank's exchange rate policy by providing an incentive to convert krónur into foreign currency.

Box III-1

Domestic asset prices and the Bank of England financial market liquidity index

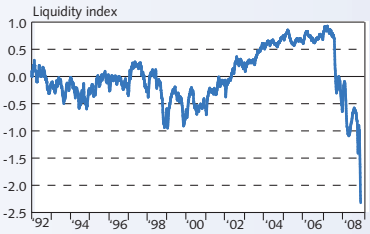
Ready access to foreign liquidity was an important driver of the recent years' economic upswing. Interest rates and interest premia were at historical lows in credit markets worldwide, and new financial products became increasingly popular. Icelandic businesses took advantage of attractive terms and easy access to credit and invested heavily in housing and equities, both in Iceland and abroad. Asset values skyrocketed afterward – share prices, real estate values, and the exchange rate of the Icelandic króna. As a result, access to credit became even easier, and those who took the most risk reaped the greatest rewards. There was a strong incentive to increase leverage, and households and businesses did so in spite of warnings. But circumstances changed almost overnight. Credit was suddenly difficult to obtain, and closure of credit lines ultimately felled the banking system.

The recent years' abundant credit supply reflected in some measure the relaxed monetary stance among central banks worldwide, as well as the glut of debt market liquidity resulting from securitisation. Since the global financial crisis began in 2007, liquidity squeezes have developed, as is manifested by financial institutions' grave difficulties in obtaining funding and by severe market illiquidity, among other things. The Bank of England publishes a financial market liquidity index on a regular basis, so as to provide an indication of the ease with which assets can be sold without substantial impact on market prices, which in turn has a strong effect on individuals', companies' and banks' access to credit. The charts below show the financial market liquidity index in the context of developments in domestic share prices and house prices and in the exchange rate of the króna. As can be seen, there is a close correlation between access to global liquidity and the asset bubble that developed in Iceland over the past several years.

Chart I

Bank of England financial market liquidity index[1]

Daily data, January 1, 1992 - October 17, 2008



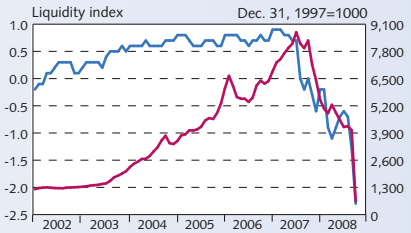
1. The liquidity index shows the number of standard deviations from the mean. It is a simple unweighted average of nine liquidity measures, normalised on the period 1999-2004. See box 2 in the Bank of England Financial Stability Report, April 2007.

Source: Bank of England.

Chart 2

Bank of England financial market liquidity index and the Icelandic OMXI15 equity price index

Monthly data, January 2002 - October 2008

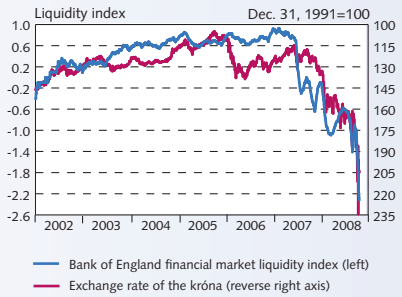


Sources: Bank of England, OMX Iceland.

Chart 3

Bank of England financial market liquidity index and the exchange rate of the króna

Daily data, January 1, 2002 - October 17, 2008

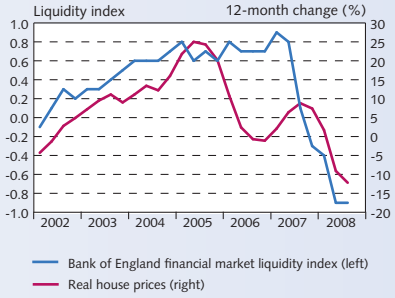


Sources: Bank of England, Central Bank of Iceland.

Chart 4

Bank of England financial market liquidity index and real house prices in Iceland

2002/Q1 - 2008/Q3

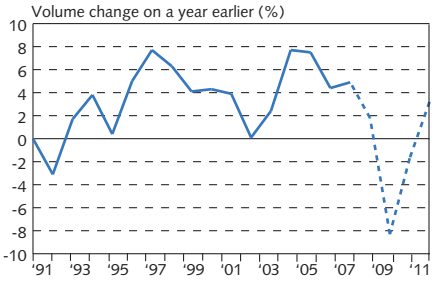


Sources: Bank of England, Statistics Iceland, Central Bank of Iceland.

IV Domestic demand and production

In the past few years, the Central Bank's macroeconomic forecasts have indicated a sharp contraction in the national economy, coupled with a generally deteriorating standard of living. The banking and currency crisis will render that contraction even sharper than previously thought. According to the baseline forecast described below, the economic recession will be Iceland's deepest since the close of World War II. The actual depth of the upcoming recession is shrouded in uncertainty, however. It will be determined to a large extent by how quickly confidence in the króna can be restored and exchange rate stability re-established. Households and businesses have seen their balance sheets subjected to severe shocks due to króna depreciation, falling asset prices, and rising inflation, which compromises their ability to meet their financial obligations and magnifies the contraction in demand. The re-financing of the new banks will also cost the Treasury a considerable sum of money, which will ultimately be passed through to Icelandic households and businesses in the form of higher taxes, higher interest rates, and restrictive government spending policies. As a result, domestic demand is projected to fall off by approximately 17½% in 2009. Declining imports and strong exports offset the contraction in GDP.[1]

Chart IV-1
Economic growth 1991-2011[1]



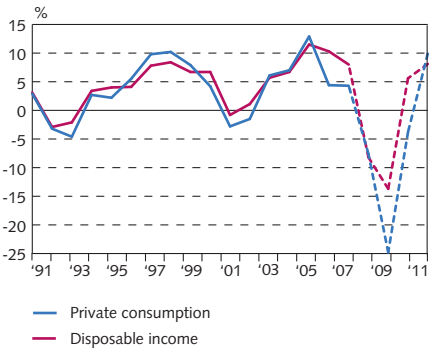
1. Central Bank baseline forecast 2008-2011.
Sources: Statistics Iceland, Central Bank of Iceland.

Record GDP contraction expected in 2009

The evidence of financial crises in many countries indicates that output growth rebounds quickly after a deep economic contraction (see Box IV-1, p. 23). The baseline forecast assumes that the upcoming contraction will be slightly sharper than that accompanying a typical financial crisis. Three factors suggest that the present economic contraction could prove deeper or more prolonged than average. First, the size of the banking system relative to the economy was larger in Iceland than in any other country that has experienced a financial crisis. Second, a larger proportion of the banking system collapsed than in an average crisis. Third, there is strong evidence that the rise in credit growth and asset prices prior to an episode of financial stress varies directly with the depth and length of the ensuing contraction in private consumption and investment.[2] Offsetting this is the fact that, in a small, open economy, a larger proportion of the adjustment is channelled through the external sector via a sharp downturn in imports without having a discernible effect on aggregate demand in trading partner countries. This helps the economy to rebound following a crisis, although a downturn in many of Iceland's main trading partner countries due to the global financial crisis could slow that process.

In view of the above, GDP is projected to contract by approximately 8½% in 2009 and just under 2% in 2010, in spite of a slight upturn in domestic demand in 2010. Output growth is expected to rise to just over 3% in 2011, due in large part to positive developments in foreign trade.

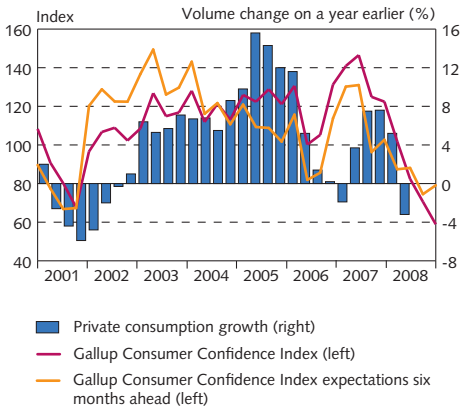
Chart IV-2
Private consumption and disposable income 1991-2011[1]



1. Central Bank baseline forecast 2008-2011.
Sources: Statistics Iceland, Central Bank of Iceland.

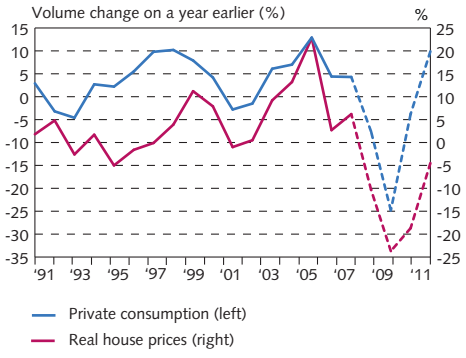
1. A more in-depth examination of the macroeconomic forecast can be found in Appendix 1 on page 40.
2. See International Monetary Fund (2008). "Financial Stress and Economic Downturns", Chapter 4 in *World Economic Outlook*, October 2008.

Chart IV-3
Private consumption and consumer confidence[1]
Q1/2001 - Q4/2008



1. Three-month average of Gallup Consumer Confidence Index. The value for the index in Q4/2008 is for October.
Sources: Capacent Gallup, Statistics Iceland.

Chart IV-4
Private consumption and real house prices 1991-2011[1]



1. Central Bank baseline forecast 2008-2011.
Sources: Statistics Iceland, Central Bank of Iceland.

Sharp contraction in private consumption due to falling asset prices, rising debt, reduced income, and lower employment rates

In the past several years, all factors seemed to combine to stimulate private consumption. Asset prices skyrocketed, disposable income and employment levels rose rapidly, and credit was in abundant supply. These drivers of consumption began losing steam early this year and have now reversed entirely. Households are faced with swiftly mounting unemployment, lower house prices, losses on equity holdings and savings in bank and pension funds, rising inflation, and a weak króna, which undermines purchasing power and raises debt service. The baseline forecast indicates that unemployment will peak at 10% near the end of 2009, real disposable income will shrink by as much as one-fourth in 2008 and 2009, and inflation will top out at nearly 23% early next year. Under these conditions, a profound decline in private consumption is unavoidable.

The forecast assumes that private consumption will contract by 7½% this year and by nearly 25% in 2009. If the forecast is borne out, this will be by far the largest one-year contraction in private consumption since measurements were introduced. The contraction would be somewhat larger than the average in countries that have experienced a financial crisis, where a 10-18% contraction is common. Private consumption is not expected to recover before mid-2010, when a new episode of robust growth is projected to ensue. This scenario is consistent with other nations' experience of financial crises. Growth in private consumption is expected to approach 10% in 2011 and rise still higher thereafter. A lasting drop in the proportion of private consumption to disposable income is expected, however; that is, saving is projected to increase. Icelanders' savings have taken a severe blow, and it is assumed in the forecast that households will attempt to redress the balance by raising their saving rate, in line with historical experience of financial stress episodes.

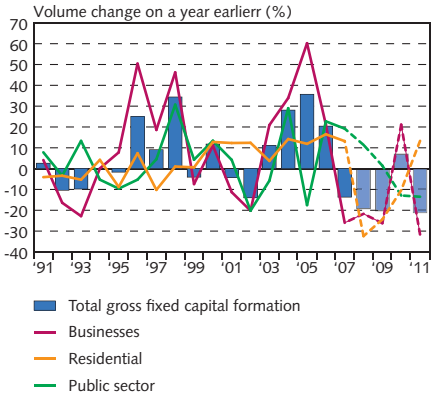
Household equity has deteriorated markedly

At the end of Q2/2008, household assets excluding pension assets totalled approximately 3,770 b.kr., having decreased slightly since the beginning of the year. Equities and corporate bonds have plunged in value in 2008, and individuals have lost a portion of their money market savings in deposit institutions as well. The nation's pension funds have also lost substantial sums. Added to this is the sizeable drop in real property values, both in 2008 and in the years to come. The forecast assumes that house prices will fall by over 40% in real terms during the forecast horizon, after which real house prices will have fallen by close to 50% since they peaked in 2007 (see Table IV-1). This is a sharper decline than in earlier Central Bank forecasts. The financial crisis, together with higher inflation, deterioration in households' financial position, and an exodus of persons will press prices down even more than would otherwise have been the case. If the forecast materialises, the decline in real estate values will be similar to that experienced in Finland in the wake of the banking crisis of the 1990s.

Household debt totalled 1,760 b.kr. at the end of Q2/2008, an increase of 200 b.kr. since the beginning of the year. A part of that increase can be traced to the depreciation of the króna, as foreign-denominated loans accounted for 18% of total household debt at the

end of June. The subsequent further weakening of the króna due to the banking crisis will compromise households' equity position for the long term and will increase their debt service at a time when many are faced with declining employment and shrinking investment income. Households that have taken large foreign-denominated loans in the past year may experience grave difficulties. In some instances, these borrowers are faced with debt service that has doubled as a result of a falling currency and rising interest rates, and their equity may be wiped out as a result.[3] The number of households in such straits will be determined largely by how high the unemployment level will rise and how long the low real exchange rate persists, as arrears will doubtless increase and bankruptcy will become more common in the months to come. In order to prevent bankruptcy among households and businesses that would be viable under normal circumstances, it may prove necessary to refinance their debt.

Chart IV-5
Gross fixed capital formation and its main segments 1991-2011[1]



1. Central Bank baseline forecast 2008-2011.
Sources: Statistics Iceland, Central Bank of Iceland.

Sharp contraction in residential and commercial real estate investment

The downturn in residential investment had already begun when the financial crisis hit after a period of 75% growth between 2002 and 2007 (see Table IV-1). A tightening credit supply, a growing abundance of available housing, a drop in real property values, and shrinking real disposable income had already begun to make their presence felt. The banking and currency crisis exacerbates the effects of all these factors; therefore, it can be assumed that the contraction in real estate investment will be deeper and more protracted than previously expected. Projections indicate a contraction of approximately 32% in 2008 and 24½% in 2009. One sign of the slump is that contractors have already returned a considerable proportion of the lots allocated to them in the past year. If the forecast is borne out, residential investment as a proportion of GDP will be just under 3½% in the next few years, which is considerably below the last four decades' average of 6% but close to the rate prevailing in the wake of the economic downswing of the 1990s.

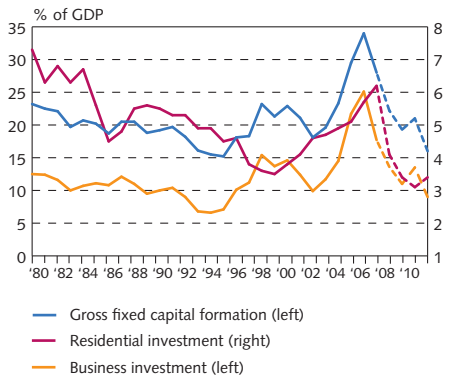
Large-scale development projects involving the construction of large retail stores, hotels, and office buildings have been in progress in the recent term. In some instances, work has already been discontinued, as it is clear that the premises for the business activities in the buildings in question no longer hold, and secure financing can no longer be obtained. As a result, the construction industry will very likely suffer, as is commonly the case during an economic contraction like the one already discernible in the sector.

Business indebtedness will magnify the effects of the crisis on investment

The outlook is for a significant contraction in general business investment, although energy-intensive industry projects will offset this somewhat. Many Icelandic companies carry substantial debt and have a poor liquidity position, and they are ill-equipped to tolerate a shrink-

3. The monthly payment on a 30-year foreign loan in the amount of 15 m.kr., taken in June 2007 and amounting to 60% of the purchase price of the underlying property, had risen by 124,000 kr. at the beginning of October, assuming that the currency composition of the loan was the same as that for household sector as a whole and that the interest premium rose by 2 percentage points during that period. In some instances, repayments of foreign loans have been frozen, but at present it is unclear how this arrangement will be carried out in the future and how large a proportion of borrowers will be offered this type of assistance.

Chart IV-6
Investment as % of GDP 1980-2011[1]



1. Central Bank baseline forecast 2008-2011.
Sources: Statistics Iceland, Central Bank of Iceland.

ing supply of foreign and domestic credit. Added to this is the hefty increase in financing costs, which is discussed below. The contraction in general business investment could therefore prove more profound in Iceland than in most other countries that have experienced similar financial stress. The baseline forecast assumes a roughly 20% contraction in business investment in both 2008 and 2009 despite the planned increase in aluminium and power sector investment. Business investment as a proportion of GDP remains below historical averages throughout most of the forecast horizon.

Some 70% of deposit institutions' loans to companies outside the financial sector are denominated in foreign currency. While a considerable proportion of the companies with such loans also have revenues in foreign currency, unhedged currency risk is considerable, for example, among businesses in the construction, retail, and service sectors. The value of outstanding loans to companies outside the financial sector has increased significantly since August, when it totalled approximately 130% of GDP.

Although there is still considerable uncertainty about near-term exchange rate developments and the new banks' ability to extend individual companies' outstanding loans, it is very likely that many indebted businesses will become insolvent. The outlook for holding companies is even bleaker. Some of these companies have been established around shareholdings in other undertakings – for example, financial companies – that have become insolvent or are experiencing extreme difficulties. In recent years, holding companies have become highly leveraged, with at least two-thirds of their debt in foreign currency.

Two-year recession followed by a new period of growth

The Icelandic economy is at a turning point. The recent period of booming economic growth characterised by surging private consumption and investment has come to an end. Ahead is a deep recession that, according to the Bank's forecast, will persist for approximately two years. At the end of that period, the economy will probably begin righting itself, and a new period of growth will ensue, although that upswing is unlikely to be as vigorous as the recent one (see Table IV-1). Unlike the last growth episode, however, it appears as though there will be a considerable output slack in the next few years, which should allow for substantial non-inflationary output growth.

Table IV-1 Changes during various periods (%)

	2002-2007[1]	*2007-2011*[2]
Private consumption	39.6	-26.5
Public consumption	16.8	12.8
Gross capital formation	100.6	-45.7
Business investment	132.5	-52.1
Residential investment	74.7	-48.1
Public investment	46.6	-14.9
National expenditure	45.1	-23.3
Exports of goods and services	32.5	18.1
Imports of goods and services	78.3	-30.6
GDP growth	29.8	-5.3
Disposable income	49.8	-9.5
House prices – nominal value	103.5	-28.3
House prices – real value	65.5	-46.9

1. Change from average for 2002 to average for 2007.
2. Change from average for 2007 to average for 2011 in the Central Bank's baseline forecast.

Box IV-1

Sudden stop of international capital inflows

A sudden stop, or a capital account crisis, can be defined as a large – and largely unexpected – fall in capital inflows occurring in conjunction with a sharp rise in credit spreads (See Calvo et al., 2006, Mendoza, 2008, and Chamon et al., 2006). Such a scenario is generally associated with a sharp depreciation of the currency and an abrupt collapse in aggregate demand. Output falls and unemployment rises substantially. This is what the Icelandic economy is experiencing now. While the macroeconomic consequences of sudden stops are generally very similar, the causes can vary, as can the factors triggering the crisis.

Vulnerabilities and crises

An economy can live with currency and maturity mismatches for years if, by chance, nothing triggers a crisis. But balance sheet weaknesses, macroeconomic imbalances, credit booms, etc., can make such an economy vulnerable to a sudden stop. Given these vulnerabilities, however, there are many possible crisis triggers (see, for example, Ghosh et al., 2008). A sudden stop may result in a single crisis (banking, currency or sovereign debt), a twin crisis (banking and currency) or a triple crisis (banking, currency and debt). In 2007, the United Kingdom and the United States faced a banking crisis (but not a currency or sovereign debt crisis). Iceland is now experiencing a twin crisis. Sovereign debt will be severely affected also, but due to a low initial debt ratio, sovereign debt should remain manageable, assuming fiscal consolidation in the years ahead. Laeven and Valencia (2008) give an in-depth historical analysis of banking crises worldwide. The number of crises in the world since 1997 is shown in Chart 1.

In Iceland, the financial vulnerabilities were the size of banking sector balance sheets relative to the economy, combined with doubts that the Central Bank could act as a credible foreign-currency lender of last resort. The banking crisis trigger was the closing of international wholesale money markets amid the global credit crunch. The currency crisis was the consequence of foreign-currency funding problems due to a loss of confidence in the Icelandic banking sector. This contributed to foreign exchange hoarding through the spot market and to severe distortions in the foreign exchange swap market.

According to the empirical literature (Calvo et al., 2006), the probability of a sudden stop increases with the current account deficit and foreign currency-denominated debt (where the latter may be impaired substantially by a real exchange rate depreciation). Therefore, the risks of such a scenario in Iceland were substantial, as has been discussed frequently in previous issues of *Monetary Bulletin*.

Macroeconomic impact

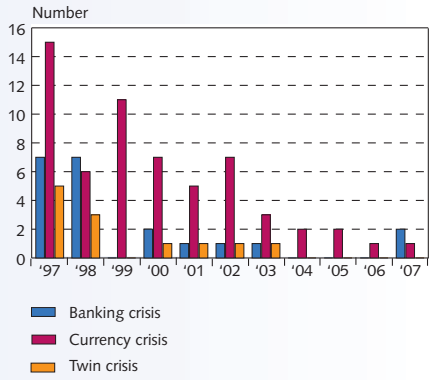
Sudden stops are generally preceded by current account deficits, and absorption and production levels above trend. Many historical crises have also been characterised by the build-up of asset price bubbles (especially in real estate) on the back of financial liberalisation or, more lately, financial innovation, which neither the market nor regulators fully understood. A capital account crisis causes (1) a sudden switch from trade deficit to surplus, (2) a sharp decline in domestic production and absorption, and (3) a fall in asset prices (generating what is typically known as a boom-bust cycle). Experience shows that larger build-ups of asset prices and leverage tend to lead to deeper contractions following crises (see Table 1 and IMF (2008)). Empirically, the contraction in domestic demand (due to lower real wages, etc.) dominates the increase in foreign demand for domestic goods (as a result of the real exchange rate depreciation).

Output rebounds after sudden stop

Recoveries that follow collapses could ensue quite quickly. In fact, a strong V-shape recovery in macroeconomic variables historically takes place in a so-called Phoenix Miracle-like fashion, where output

Chart 1

Frequency of financial crises 1997-2007

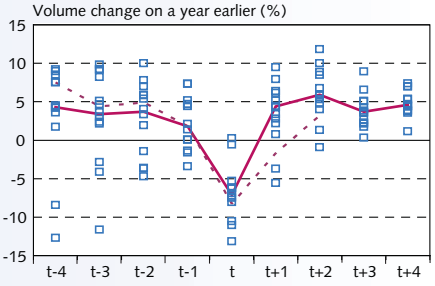


Source: Laeven and Valencia (2008).

Chart 2

Economic growth preceding and following crises in a number of countries[1]

Median (line), distributions (boxes) and forecast for Iceland (broken line)



1. Argentina (2002), Brazil (1999), Bulgaria (1996), Ecuador (1999), Finland (1991), Indonesia (1998), Korea (1998), Malaysia (1998), Mexico (1995), Philippines (1998), Russia (1998), Thailand (1998), Turkey (2001), Uruguay (2002).

Sources: IMF, Statistics Finland, Central Bank of Iceland.

"rises from its ashes" (see Chart 2). Interestingly, the output rebound takes place with virtually no recovery in domestic or external bank credit, which is highly suggestive of sudden underutilisation of production capacity during the recession. That said, considerable downside risk to a strong V-shape growth recovery remains, not to mention the long-lasting social repercussions of a twin crisis.

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Table 1 Comparison with other major financial stress episodes in developed countries during the 1990s[1]

	Initial conditions					
	Asset price increase[2]				*Net lending ratio*[4]	
	Equity prices in real terms	*House prices in real terms*	*Credit/GDP*	*Banks' assets*[3]	*Households*	*Businesses*
Finland	80.0	36.1	16.6	21.0	6.5	-5.1
Sweden	68.5	17.5	19.1	27.2	...	...
Norway	73.9	26.5	18.8	27.6	-6.9	-3.6
Japan	54.4	12.2	7.4	22.4	5.3	-5.1
United Kingdom	19.9	22.9	2.5	16.1	-2.3	-3.4
United States	14.5	4.9	3.1	9.5	-0.4	-0.3
Average	51.9	20.0	11.3	20.6	-2.1	-3.5
Iceland	253,0	68,6	91,5	17,7	...	...

	Outcomes							
	Asset price decrease[5]				*Macroeconomic deleveraging*[9]			
	Equity prices in real terms	*House prices in real terms*	*Credit/ GDP*	*Banks' assets*[8]	*Households*	*Businesses*	*Output loss*[10]	*Quarters to recovery*
Finland	-85.9	-39.8	-16.8	-5.1	16.2	17.0	-13.6	27
Sweden	-69.5	-20.1	-21.3	-4.9	...	...	-5.8	19
Norway	-76.9	-24.6	-2.7	-12.5	16.5	8.5	-3.9	12
Japan	-58.5	-11.1	-6.8	-8.5	0.5	15.4	-5.1	19
United Kingdom	-21.4	-23.3	-5.6	-6.5	9.6	4.4	-2.6	13
United States	-21.0	-4.8	-3.8	-5.4	0.8	0.6	-1.3	5
Average	-55.5	-20.6	-9.5	-7.2	8.7	9.2	-5.4	15.8
Iceland	-81.1[6]	-22.6[7]	...	...	...	...	-15.0	16[11]

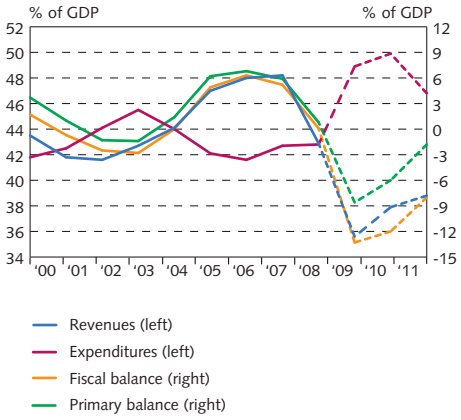
1. For countries other than Iceland, data are based on Table 4.4 in International Monetary Fund (2008), p. 149.
2. Trough-to-peak changes before the start of the crisis in the detrended Hodrick-Prescott (HP) filter levels of the variables. In the case of Iceland, the period for equity prices, house prices, and total credit system lending is from the beginning of 2002 until September 2008.
3. Maximum percent deviation from detrended (HP filter) levels of bank assets before the start of the crisis. For Iceland, this is the maximum deviation from the detrended combined asset levels of the parent companies of the three commercial banks since 2003, when the privatisation of the State-owned banks was completed.
4. Deviation from the trend according to the HP filter one year before the crisis. These data are not available for Iceland.
5. Peak-to-trough changes after the start of the crisis in the detrended (HP filter) level of the variables.
6. Peak-to-trough changes after the crisis started in the detrended (HP filter) level of equity prices in the Central Bank's baseline forecast in this issue of *Monetary Bulletin*.
7. Peak-to-trough changes after the crisis started in the detrended (HP filter) level of house prices in the Central Bank's baseline forecast in this issue of *Monetary Bulletin*. It is appropriate to bear in mind that real house prices had already dropped considerably when the crisis hit, as is discussed in Section VIII of this *Monetary Bulletin*. The decline in real house prices from the top of the upswing to the bottom of the downswing in the forecast is approximately 30% in the detrended (HP filter) level of house prices, and 49% based on unfiltered real house prices.
8. Minimum percent deviation from detrended (HP filter) level of bank assets after the start of the crisis.
9. Trough-to-peak changes in the detrended (HP filter) net lending ratios.
10. Output loss is measured as the decline from peak to trough in percent of peak level output. For Iceland, this is based on the Central Bank's baseline forecast in this issue of *Monetary Bulletin*.
11. According to the Central Bank's baseline forecast in this issue of *Monetary Bulletin*.

Sources: International Monetary Fund and Central Bank of Iceland.

V Public sector finances

The financial crisis will have a profound effect on public sector finances. The outlook is for the public sector surplus, which amounted to 5½% of GDP in 2007, to turn into a deficit of over 13% in 2009, mostly because of the effects of automatic stabilisers. Deviations from previous estimates of balances published by the Treasury and the local authorities will therefore be sizeable in the next few years. In the fiscal budget for 2009, presented to Parliament on October 1, the central government deficit was estimated at 3.7% of GDP. As the national economy recovers, the deficit will begin to shrink again. It is projected at 8% of GDP in 2011. Public sector debt will increase dramatically because of the deficit and the cost borne by the Treasury from the collapse and refinancing of the banking system. Debt will be slightly in excess of GDP as early as 2009.

Chart V-1
Public sector finance 2000-2011[1]



1. Central Bank baseline forecast 2008-2011.
Sources: Statistics Iceland, Central Bank of Iceland.

Profound change in fiscal position

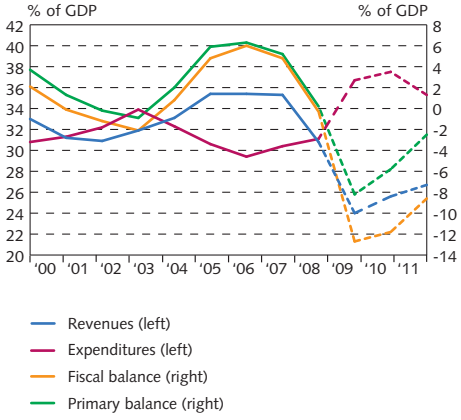
Looking beyond core public sector operations, it is clear that the interest expense on increased debt will amount to tens of billions of krónur in the years to come. The burden of re-financing virtually the entire banking system, including the Central Bank, will fall on the Treasury, as will the guarantees that the Depositors' and Investors' Guarantee Fund or the assets in the banks' estates will not cover. Substantial uncertainty still surrounds the final settlement of the failed banks' liabilities. Based on a rough estimate of the sale price of their assets, it can be expected that total public sector debt will increase from 30% of GDP at year-end 2007 to slightly greater than GDP at year-end 2009. The development of the debt ratio as the forcast horizon progresses is quite uncertain. It will depend on the ability of the Treasury to borrow from abroad, usually at a lower interest rate than is possible domestically, and on the profitability of the newly acquired banks. It is likely that at first the debt ratio will continue to rise due to Government deficits; however, in the medium term, the debt ratio must decline.

Steep decline in tax revenues …

The Government's tax revenues will shrink dramatically because of the financial crisis and the ensuing recession. In krónur terms, the decline in tax revenues between 2008 and 2009 is estimated at 81.5 b.kr., or 15½%. It is expected that revenues will contract by one-fifth between 2007 and 2011, assuming constant price levels. Because of the substantial taxes paid by financial undertakings, the contraction is likely to be steepest in corporate income tax because a very large share of the revenue came from the banks. Revenues from taxes on capital income will also fall markedly. Tax revenue from capital-based taxes will decrease by up to 80% between 2007 and 2011, at constant price levels. The contraction in consumption and excise taxes will also be substantial, concurrent with a nearly 18% drop in national expenditure in 2009.

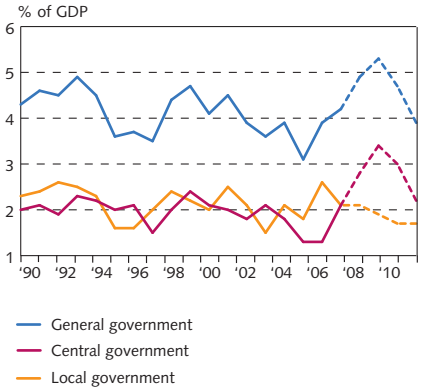
It will take many years to rebuild the capital base after major write-offs; therefore, it is assumed that revenues from corporate and capital income taxes will remain low throughout the forecast horizon.

Chart V-2
Treasury finance 2000-2011[1]



1. Central Bank baseline forecast 2008-2011.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart V-3
Public sector fixed investment 1990-2011[1]



1. Central Bank baseline forecast 2008-2011.
Source: Statistics Iceland, Central bank of Iceland.

However, revenues from indirect taxes are expected to increase as the forecast horizon progresses, in line with growing domestic demand. It is assumed that total tax revenues will amount to 32.2% of GDP at the end of the forecast horizon, as opposed to 41% in 2007.

... concurrent with rising expenditure due to interest payments and transfer outlays

Apart from the dramatically increased interest expense falling on the Treasury in the years to come and the expenditure arising from the promises made in connection with the recent wage settlements, transfer outlays will increase sharply as a result of the contraction, with the bulk of the increase due to the social security system and unemployment benefits. Public expenditure as a share of GDP is expected to increase from 42½% in 2007 to 47% in 2011. This assumes that public consumption growth will increase by 2.9% per year and that public expenditure will rise by 16 b.kr. at constant price levels during the period from 2007 through 2011.

The forecast takes into account that attempts will be made to soften the economic contraction with a rather smaller decrease in public investment than is allowed for in the fiscal budget for 2009. Investment is projected to contract by one-fourth at constant price levels between 2008 and 2011, when it will equal approximately 4% of GDP.

Measures necessary to guarantee a sustainable fiscal balance

As is stated above, the baseline forecast assumes that the 5½% public sector surplus in 2007 will turn into a deficit amounting to 13% of GDP in 2009. The deficit will be 12% of GDP in 2010 but will then narrow, in line with growing economic activity, to 8% of GDP in 2011. This is a much poorer outcome than was projected in June, although that forecast did assume considerable changes in public sector performance. The greatest difference, in addition to a prolonged reduction in the revenue base, lies in the interest payments on the added Treasury debt.

The forecast is based on the assumption that no action will be taken to dampen the effect of the automatic stabilisers in 2009, but it is assumed that the preparation of the framework budget for 2010-2014 will be marked by fiscal consolidation. No decision has been made on whether expenditure cutbacks or tax increases will ensue, but it will be necessary to adopt special measures in order to improve the cyclically adjusted primary balance by a minimum of ½% of GDP year-on-year in the years to come if the new debt ratio is expected to be stable. If the objective is to lower the debt ratio to the requirement set by the Maastricht Treaty in 15 years' time, then it will be necessary to improve the cyclically adjusted primary balance by 4½% of GDP year-on-year over what the balance otherwise would have been. An exact estimate of the required primary balance, however, is highly sensitive to economic growth and to the interest rate on the added Treasury debt (for further discussion of public sector performance and sustainable debt, see Box V-1).

Box V-1

Sustainability of public sector debt

Debt that grows in excess of income cannot be sustainable. Sooner or later, such behaviour must cease, if not due to the borrower's prudence, then due to the lender's actions. This applies to public sector finances as well. If public sector finances are to be sustainable, the ratio of public debt to GDP must either remain constant or decrease.

In examining whether the public sector's operations and balance sheet can be deemed sustainable, it is necessary to consider two factors: the interest burden on the debt, and the cyclically adjusted primary balance of public sector.[1] In order to gain a better understanding of this, it is useful to express the public sector budget constraint as:

$$B_t = B_{t-1} + i_t B_{t-1} - D_t \quad (1)$$

where B_{t-1} is net debt at the beginning of the period t, B_t is net debt at the end of the period, i_t is the nominal interest rate during the period, and D_t is the primary balance. The accounting relationship in Equation (1) can be rewritten as a proportion of GDP in nominal terms, P_tY_t, where P_t is the price level and Y_tt is real GDP (where Δ represents change):[2]

$$\Delta b_t = \rho_t b_{t-1} - d_t \quad (2)$$

where $b_t = B_t/(P_tY_t)$, $d_t = D_t/(P_tY_t)$ and ρ_t represents the difference between accrued real interest on debt and output growth and is given as $\rho_t = (1 + i_t)/[(1 + \pi_t)(1 + \gamma_t)] - 1 \approx i_t - \pi_t - \gamma_t$ when i_t, π_t (inflation) and γ_t (output growth) are relatively low values.

Equation (2) therefore states that changes in the debt ratio correspond to the real interest burden in excess of output growth (i.e., the product of the real interest rate in excess of output growth and the debt ratio) less the primary balance as a proportion of GDP.

From Equation (2) it can be seen that, in order to prevent the debt ratio from rising, the cyclically adjusted primary balance as a proportion of GDP should at least equal the real interest burden over and above output growth. If the objective is to reduce the debt ratio, the primary balance must therefore be greater than the real interest expense over and above output growth.

Equation (2), however, sets no real constraints on a government's decisions on taxation or expenditure apart from any existing limits on the government's access to credit or funding through seigniorage. In order to see more clearly how public sector debt restricts governmental decisions, it is necessary to examine the intertemporal budget constraint. This can be done by solving Equation (2) over time. By assuming that, in equilibrium, long-term real interest rates are constant and output growth equals the constant growth rate of potential output, then $\rho = \rho_t$ and:

$$(1+\rho)b_{t-1} = \sum_{j=0}^{\infty}(1+\rho)^{-j}d_{t+j} + \lim_{j\to\infty}(1+\rho)^{-j}b_{t+j} \quad (3)$$

Assuming that the public sector cannot accumulate unlimited debt, it is said that the revenue and expenditure plans of the public sector fulfil the so-called NoPonzi condition, and the latter term on the right side of Equation (3) equals zero. In that instance, the intertemporal budget constraint satisfies:

1. The term cyclically adjusted primary balance refers to the budget balance excluding interest payments, after adjusting for the effects of the business cycle. In the context of governments' and central banks' consolidated balance sheets, D_t reflects conventional tax levies and public expenditures, as well as changes in central banks' base money.
2. Where $(1 + i_t)B_{t-1}/P_tY_t$ can be expressed as $(B_{t-1}/P_{t-1}Y_{t-1})(1 + i_t)/[(1 + \pi_t)(1 + \gamma_t)]$.

(4) $$(1+\rho)b_{t-1} = \sum_{j=0}^{\infty}(1+\rho)^{-j}d_{t+j}$$

Equation (4) states simply that if the government is indebted ($b > 0$), the present value of the primary balance with the discount rate $1/(1+\rho)$ must be high enough to cover interest payments and principal on the debt. As debt and interest payments rise and output growth declines, the government must raise taxes or reduce expenditures, either in the present or in the future.

Financial ratios of sustainable public sector finance

As can be seen from Equation (2), the primary balance as a proportion of GDP must equal the net interest burden as a proportion of GDP in order to maintain a constant debt ratio; that is:

(5) $$\rho_t b_{t-1} = d_t$$

If it is assumed, for example, that the debt ratio remains unchanged at 125% of GDP and that equilibrium output growth is 3.2% (which is consistent with the properties of the Central Bank's macroeconomic model), the interest burden as a proportion of GDP is determined by government debt in the manner shown in Table 1.

Table1 Debt ratio 125% of GDP, 3.2% equilibrium output growth

Interest burden % of GDP	*Real interest rate*	*Interest level (real interest – output growth)*
-0.75	2.60	-0.60
-0.50	2.80	-0.40
-0.25	3.00	-0.20
0.00	3.20	0.00
0.25	3.40	0.20
0.50	3.60	0.40
0.75	3.80	0.60

For example, if the objective is to reduce the debt ratio from 125% of GDP to 60% of GDP in 15 years' time and to pay the debt as though it were an annuity loan, it can be shown that debt service as a proportion of GDP is determined by potential output growth and the real interest rate terms that are offered (see Table 2).

Table 2 Debt ratio drops from 125% to 60% in 15 years

Debt service as % of GDP			
1.5% output growth	*2.5% output growth*	*3.2% output growth*	*Real interest rate*
5.30	4.43	3.79	2.60
5.56	4.61	3.97	2.80
5.75	4.80	4.15	3.00
5.94	4.98	4.33	3.20
6.13	5.17	4.52	3.40
6.33	5.36	4.70	3.60
6.52	5.55	4.89	3.80

Therefore, the question of whether tax increases or expenditure cuts will be necessary depends to a considerable degree on what credit terms are offered and whether – and if so, how quickly – the debt is to be reduced. Other things being equal, however, it will be necessary to increase the primary balance surplus if the debt

ratio rises as anticipated, given the obligations that will fall on the Treasury in the years to come. Given a potential output growth rate of 3.2% and a real interest rate of 3.6%, the cyclically adjusted primary balance must improve by ½ percentage point if the debt ratio increases to 125%, assuming a constant debt ratio (see Table 1). On the other hand, if the objective is to reduce the debt ratio by half in the next 15 years, the primary balance must improve by nearly 4½ percentage points each year (that is, slightly more than 4½ percentage points in Table 2 less the 0.1% primary balance based on the balance that would have been necessary prior to the financial crisis).

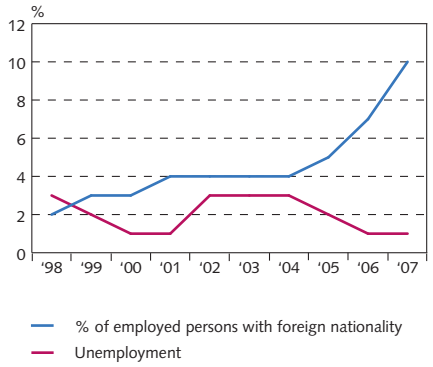
VI Labour market and wage developments

The labour market is at a turning point. Demand for labour is expected to contract so sharply that the characteristic flexibility of the Icelandic labour market will not be sufficient to stave off significant unemployment in coming years. Unemployment is expected to rise rapidly until the end of 2009 and remain above the highs of the last decade until the latter part of the forecast horizon. In spite of a marked contraction in real wages, it is expected that private sector wage settlements will be extended without additional wage increases in early 2009.

Chart VI-1
Recruitment and redundancy plans of businesses over the next 6 months

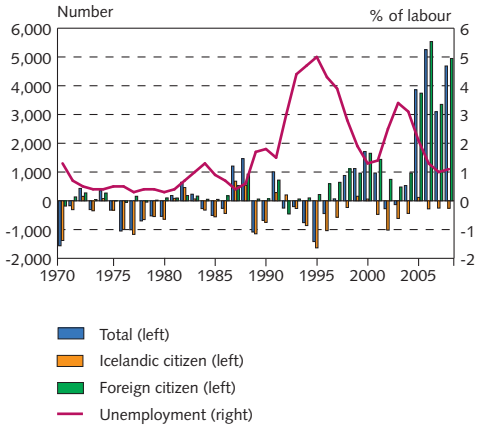
Source: Capacent Gallup.

Chart VI-2
Foreign labour and unemployment 1998-2007



Sources: Directorate of Labour, Statistics Iceland.

Chart VI-3
Internal migration and unemployment 1970-2008[1]



1. January-September 2008.
Sources: Directorate of Labour, Statistics Iceland.

Clear signs of a turnaround before the banking crisis

In contrast with surprisingly strong data from Statistics Iceland's Q3/2008 labour market survey, which showed a 5% year-on-year increase in total hours worked, monthly data indicate a clear turnaround. The September figures from the Directorate of Labour provide the first unambiguous sign of weakening labour demand. Seasonally adjusted unemployment rose from 1.3% to 1.5%, and foreign labour imports seem to have come to a halt.

Mass layoffs have been prominent in the construction, financial, and service sectors and are expected to increase further in coming months. However, excess demand for labour remains in few sectors, particularly health and social services. Companies that produce goods for the domestic market are preparing for a sharp contraction in demand. The export sector has not been unscathed by problems in the foreign exchange market, although a weak króna creates favourable conditions for increased market share abroad. Should the contraction in demand in Iceland's chief trading partner nations persist, however, growth potential could be negatively affected.

The flexibility of the Icelandic labour market will not suffice …

Repatriation of foreign workers is the most likely reason why waning demand for labour did not cause unemployment to rise until September. During the last downswing, the proportion of foreign nationals in the Icelandic labour market remained unchanged, as that slump was expected to be of short duration due to upcoming aluminium and power sector projects. As a result, employers were willing to keep excess foreign workers rather than lay off workers temporarily only to find the domestic pool of labour depleted as soon as labour market conditions improved. The current situation is quite different. The incipient downturn will be much deeper and more protracted than the one in 2002. Furthermore, due to the sharp depreciation of the króna this year, overseas workers benefit far less from working in Iceland, in terms of both the home country value of potential remittances and the workers' chances to earn money by working long hours. A significant proportion of the foreign workers who migrated to Iceland during the recent upswing have left the country. According to information from employment agencies, most foreign nationals who lose their jobs choose to return to their native country.

Icelandic citizens who lose their jobs might also look for work abroad. Deteriorating labour market conditions in neighbouring coun-

tries may limit their opportunities, however. Demand in the sectors where redundancies in Iceland are significant – e.g., construction, financial and general services – is likely to weaken elsewhere as well, both in EEA states and in other countries.

One of the main characteristics of the Icelandic labour market is the rapidity with which labour participation adapts to demand, particularly among the youngest group (age 16-24). This adaptability can be expected in the present instance as well. Labour participation is estimated at 2 percentage points lower in 2009 than in 2008, and roughly 3 percentage points lower in 2010-2011. The labour market will also adapt to curtailed demand by reducing working hours. It is assumed that employers will attempt to cut wage costs by reducing both expensive overtime and the overall number of hours worked.

… to avert record unemployment

In spite of the flexibility of the Icelandic labour market, a dramatic increase in unemployment in the next few years cannot be avoided. The shock to the Icelandic economy is of such a scale that it is unrealistic to assume that reduced labour participation, shorter working hours, and labour migration will be sufficient to offset the contraction in demand. According to the forecast published in this *Monetary Bulletin*, unemployment will rise swiftly until the end of 2009, when it will peak at approximately 10%. This is considerably higher than during the mid-1990s but is consistent with the experience of countries that have gone through comparable financial crises. Unemployment is expected to remain very high until year-end 2010, averaging 8% for that year and tapering off to about 4% by the end of the forecast horizon.

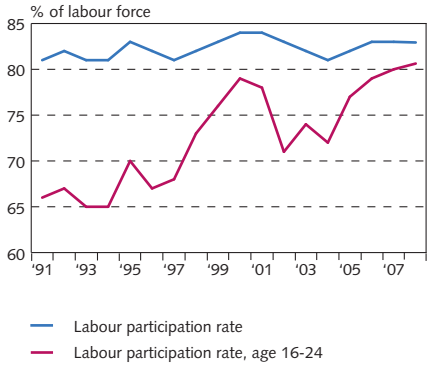
The assumptions underlying current wage settlements will not hold …

Even before the financial crisis struck Iceland full force, it was clear that the assumptions underlying the private sector wage settlements would not hold. These assumptions are two: inflation must have slowed down in the latter half of 2008 and early in 2009, and real wages in the private sector must not fall between January and December 2008. As of September, real wages had already contracted by nearly 5% since January. Because of the sharp depreciation of the króna in September and October, the outlook for the coming months is for rising rather than falling inflation, as the wage settlements assumed.

… but wage agreements will most likely be extended without supplementary wage hikes

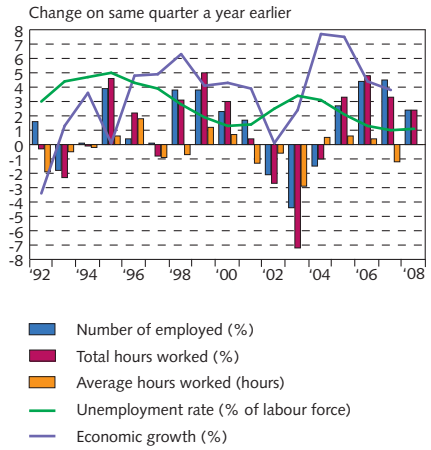
In view of rapidly deteriorating labour market conditions, and despite the fact that the preconditions for the current wage settlements will not hold, the forecast assumes that private sector wage settlements will be extended without additional pay hikes. Furthermore, the forecast assumes that public sector wage settlements will be extended for a period comparable to that for private sector settlements, with wage rises similar to those agreed upon by the private sector.

Chart VI-4
Labour participation rate 1991-2008[1]



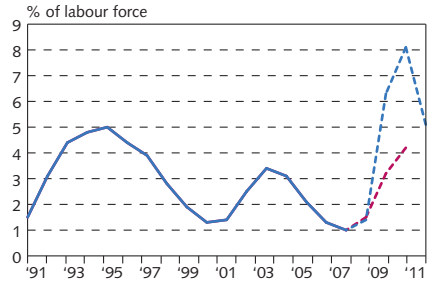
1. Average of Q1/2008 - Q3/2008.
Source: Statistics Iceland.

Chart VI-5
Changes in labour market 1992-2008[1]



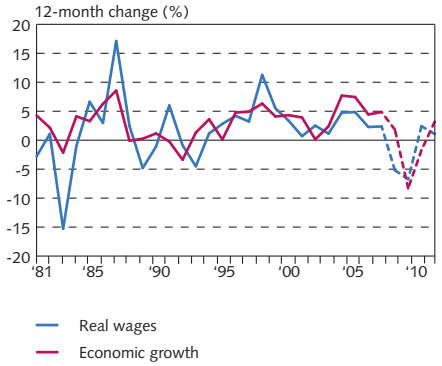
1. Average of Q1/2008 - Q3/2008.
Source: Statistics Iceland.

Chart VI-6
Unemployment rate 1991-2011[1]



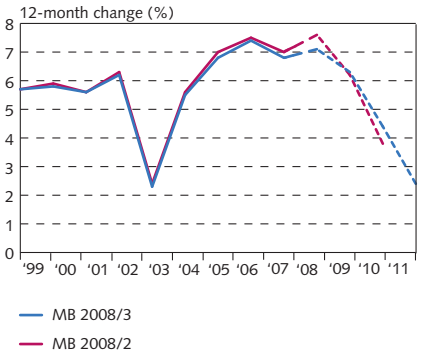
1. Central bank baseline forecast 2008-2011.
Sources: Directorate of Labour, Central Bank of Iceland.

Chart VI-7
Real wages and economic growth 1981-2011[1]



1. Central Bank baseline forecast 2008-2011.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VI-8
Unit labour cost 1999-2011[1]



1. Central Bank baseline forecast 2008-2011.
Source: Central Bank of Iceland.

Real wages will decline …

Real wages have always been much more volatile in Iceland than in neighbouring countries, although the downward flexibility of real wages weakened considerably after inflation was brought down in the early 1990s. While wage settlements have never gone so far as to include nominal wage cuts, the 1993 wage settlements were extended for over 1½ years without a wage rise.

Based on the inflation forecast in this *Monetary Bulletin*, an extension of the current wage settlements without supplementary wage hikes would entail a nearly 7% drop in real wages in 2009. The combined reduction in real wages in 2008 and 2009 totals approximately 12%. However, real wages will begin to recover in early 2010, provided that inflation subsides as quickly as the forecast indicates.

… as will nominal wages in certain sectors

Although it is assumed that wage settlements will be extended, with the implied modest nominal wage increase, compensation is likely to fall in nominal terms at the firm level in some sectors, especially in the three new commercial banks. In addition, the performance-linked bonuses that have been customary in the financial sector and in specialised trade companies will be reduced sharply over the next few years. As a result, individual wage drift should be negligible.

Growth in unit labour cost expected to decline rapidly

Given the modest wage developments described above and increased productivity in the latter part of the forecast period, growth in unit labour cost will lose pace rapidly until mid-2011. ULC growth is projected at just over 6% in 2009 but is expected to fall back to 2½% in 2011.

VII External balance

Current account projections are extremely uncertain as a result of the financial crisis. How the crisis will affect the balance sheets of the financial system and the overall economy – and hence the balance on income – is highly uncertain at this stage. There is also great uncertainty about the effects on the real economy, and therefore on the size of both the current account deficit and the general government deficit. How the public sector deficit is financed will also affect the current account over the medium term. According to the current forecast, the contraction in domestic demand will cause a sharp reversal in the external accounts. A sizeable trade surplus is projected, and the current account deficit in 2009 will be accordingly small.

Trade surplus in Q4/2008

Import growth has slowed down in recent months, while exports have increased substantially. As a result, the deficits in the merchandise and services accounts have narrowed markedly. A considerable surplus is expected in Q4, as imports are likely to contract sharply in response to the financial crisis.

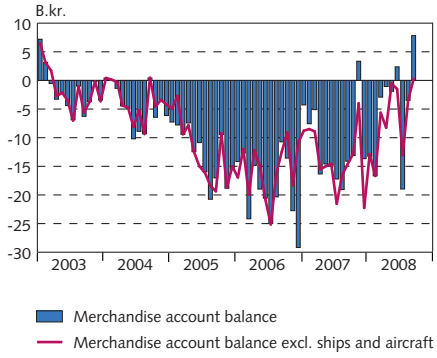
Considerable uncertainty regarding balance on income

The deficit on the income account has been extremely large in recent quarters, particularly in Q2/2008, when the deficit was affected by negative returns on residents' foreign direct investment. The deficit is expected to narrow in Q3 but remain substantial due to significant capital losses.

The collapse of Iceland's large commercial banks will have a substantial effect on net income receipts in the medium term. There will be large write-downs of the banks' foreign currency-denominated debt, although considerable liabilities will remain in the old banks' accounts for some time. However, interest payments to abroad will rise considerably due to borrowings for the build-up of the foreign exchange reserves. Borrowing for the refinancing of the domestic banking system, the fulfilment of government obligations with respect to the collapsed banks, and the Treasury deficit will probably be confined largely to the domestic ISK market, at least in the short run. All of these factors are subject to enormous uncertainty, which makes it difficult to estimate the prospective net interest payments to abroad over the next few years. Falling stock prices worldwide and the general contraction abroad adversely affect returns on the remainder of residents' foreign investments. Thus there is little expectation of returns on equity holdings, although the depreciation of the króna offsets diminishing returns somewhat.

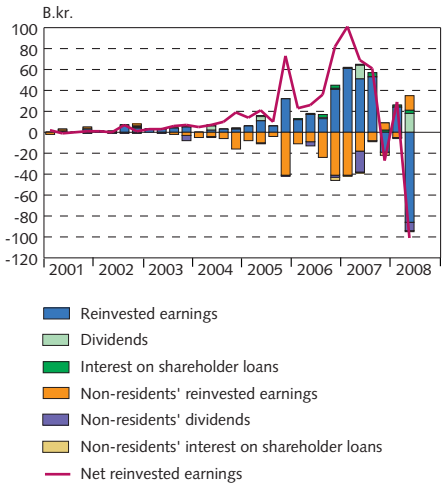
The robust returns of domestic companies owned by non-residents add to the income deficit. The drop in aluminium prices since mid-year reduces profits in the aluminium sector and will narrow the income account deficit in the latter half of the year, particularly in Q4. The bulk of non-residents' foreign direct investment in Iceland is related to aluminium production. However, lower aluminium prices reduce export revenues from the sale of both aluminium and energy.

Chart VII-1
Merchandise account balance
Monthly data at fixed exchange rate



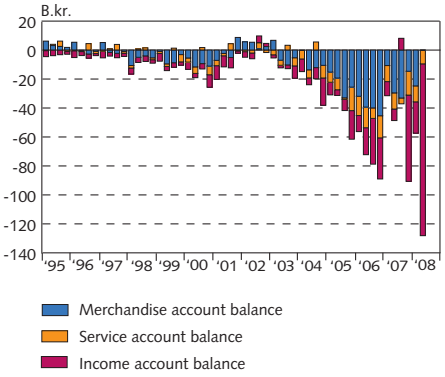
Sources: Statistics Iceland, Central Bank of Iceland.

Chart VII-2
Direct investment and investment expenditure
Q1/2001 - Q2/2008



Source: Central Bank of Iceland.

Chart VII-3
Current account balance components[1]
Q1/1995 - Q2/2008



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

Due to these offsetting effects, the total impact of falling aluminium prices is smaller than might be expected at first perusal.

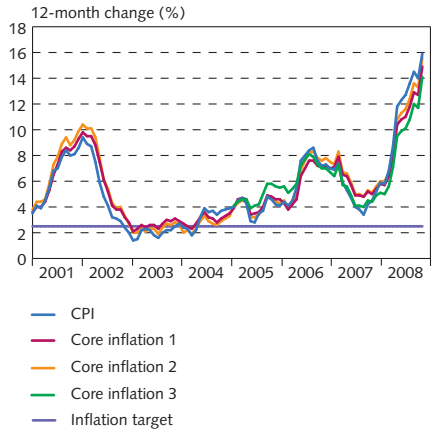
Large trade surplus expected in coming years

Despite the significant income account deficit, the balance on goods and services will turn to a surplus. The forecast assumes a trade surplus amounting to 9% of GDP in 2009, and a modest current account deficit of approximately 1% of GDP for that year. Investment in the aluminium and power sectors and related imports will reverse this trend temporarily in 2010, but in 2011 a trade surplus of 8½% of GDP is forecast, together with a current account surplus of 3½%.

VIII Price developments and inflation outlook

The inflation outlook is highly uncertain, largely due to uncertainty regarding exchange rate developments. Inflation is likely to rise in the near term due to depreciation of the króna. Once the króna appreciates, however, inflation can be expected to subside rather quickly. A sharp economic contraction is ahead, and unemployment will hit record highs. Therefore, wage costs are expected to increase only modestly in the next few years, and inflation expectations will decline rapidly. The drop in house prices will also expedite the disinflation process. The current forecast must be interpreted in light of the unusually great uncertainty surrounding the inflation outlook. Section I discusses two alternative scenarios that illustrate different assumptions concerning the speed of the króna's recovery and its impact on economic developments. If the króna appreciates later than is assumed in the baseline scenario, inflation and the economic contraction will be more severe early in the forecast horizon. On the other hand, if the króna appreciates earlier, inflation and the economic contraction will be less pronounced.

Chart VIII-1
Inflation January 2001 - October 2008[1]

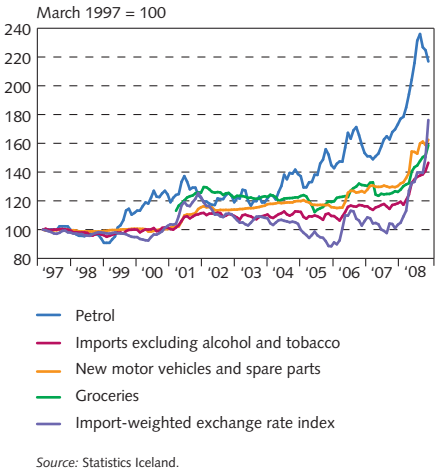


1. The core indices are compiled on the same basis as the CPI, with Core Index 1 excluding prices of agricultural products and petrol, and core Index 2 excluding prices of public services as well. Core Index 3 also excludes the effect of changes in mortgage rates.
Source: Statistics Iceland.

Inflation driven by depreciation of the currency

Inflation rose sharply in August but levelled off in September as a result of positive base effects. However, the initial effects of the financial crisis on the exchange rate were already discernible in October measurements. In October, the consumer price index rose by 2.2% month-on-month, and twelve-month inflation measured 15.9%.[1] Inflation had therefore risen by more than 3 percentage points since June. Underlying twelve-month inflation – i.e., excluding volatile items, public services, and real interest rates – was over 14% in October, having risen by some 4 percentage points since June. Import prices excluding alcoholic beverages and tobacco rose by 4%, with the twelve-month increase measuring nearly 25%. The general rise in import prices was offset by falling petrol prices, which in turn were driven by declining global oil prices. The effect of the weaker króna on the price of domestic goods, which is attributable to rising prices of imported input and a stronger competitive position among domestic producers, was similar to the effect on import prices. Prices of domestic goods, excluding agricultural products and vegetables, rose by 4% in October alone, with the twelve-month increase approaching 20%.

Chart VIII-2
Import-weighted exchange rate and import prices March 1997 - October 2008

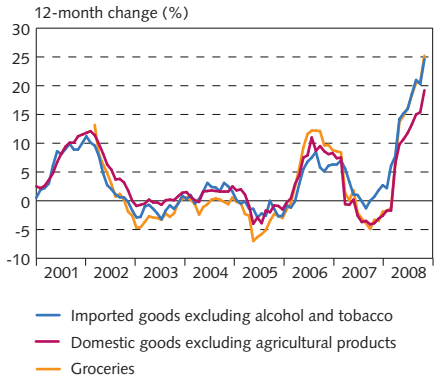


Source: Statistics Iceland.

The depreciation of the króna will probably continue to pass through to prices in the next few months. The pass-through is subject to considerable uncertainty, however, due to the substantial amount of offshore and informal currency trading. If a lack of foreign currency results in goods shortages, prices could rise steeply when inventories near depletion. On the other hand, the contraction in domestic demand and the relatively strong inventory position prior to the cur-

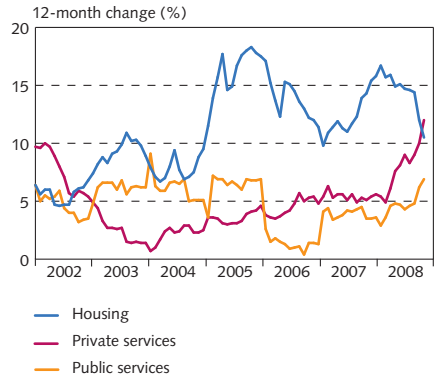
1. Due to unusual circumstances, Statistics Iceland made two changes in the calculation of the consumer price index in October. First, the proportion of real estate transactions in which property and liquid assets were used as a means of payment rose significantly from May 2008. In calculating the present value of the purchase agreements in such transactions, it was decided to raise the discount factor used for the calculation of the cash value of the property. The effect of this correction was a 0.22% reduction in the CPI. Second, changes in the list price of automobiles since September were excluded, as new motor vehicle registrations have virtually halted. Had these changes not been made, the CPI would have risen by a further 0.3%.

Chart VIII-3
Goods prices January 2001 - October 2008



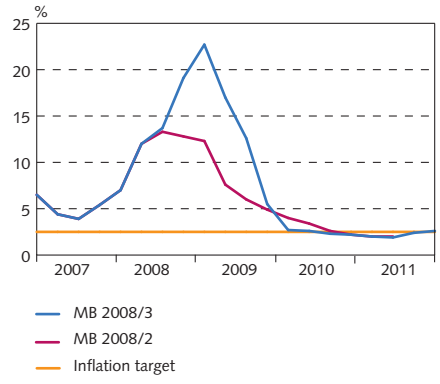
Source: Statistics Iceland.

Chart VIII-4
Prices of housing and services
January 2002 - October 2008



Source: Statistics Iceland.

Chart VIII-5
Inflation - comparison with MB 2008/2



Sources: Statistics Iceland, Central Bank of Iceland.

rency crisis should dampen these effects, and inventories should last longer than they might otherwise.

Services price inflation continues to rise

The price of private services rose by 2% in October and by nearly 12% over the preceding twelve months. This is the largest twelve-month increase in services prices in more than a decade. Increased cost pressures in the wake of the recent depreciation of the króna could explain the large rise in the price of services. Services price inflation is expected to slow down rather quickly as demand falls off, however, because wage rises are likely to be moderate.

Real house prices continue to fall

The real estate market slump is deepening. In October, market prices fell by 1½% month-on-month, with the annual decrease approaching 1%, according to the market price component of the CPI. In real terms, house prices have fallen by 14½% nationwide over the past twelve months, with the decline somewhat sharper in regional Iceland than in the greater Reykjavík area. Paid rent rose by 2.5% in October and by approximately 24% over the previous twelve months. While the supply of rental apartments is expected to increase over the medium term, demand may also rise as time passes. For the longer term, rent will probably follow the downward trend in house prices, which will intensify as general price level hikes subside in the coming year.

Rising near-term inflation

Considerable uncertainty surrounds expected developments in the ISK exchange rate once the króna is floated again. It is conceivable that the króna will weaken sharply right after the commencement of unrestricted currency trading. The speed at which exchange rate developments and cross-border trading are restored to normal will greatly affect inflation developments in the medium term. The baseline forecast assumes that inflation will exceed 19% in Q4/2008 and peak at nearly 23% in Q1/2009. However, it can be expected to fall off quickly thereafter and is projected at 5½% in Q4/2009. As the effect of the exchange rate shock diminishes and the effects of the contraction in domestic demand intensify, inflation will slow down even more. It is expected to reach the Central Bank's inflation target of 2.5% early in 2010 and remain close to target for the remainder of the forecast horizon.

Lower house prices a key factor in disinflation

Falling house prices will play a key role in disinflation in the medium term. Apart from the direct impact on the CPI through the housing component, the reduction in house prices erodes household wealth and thereby discourages private consumption. In Q3/2008, nominal house prices dropped year-on-year for the first time since 1997. The baseline forecast assumes that house prices will continue downward as a result of declining demand caused by the financial crisis, falling disposable income, dwindling credit supply, and repatriation of foreign workers. According to the forecast, nominal house prices will fall by nearly 13% in 2009, followed by another decline of almost 17% in 2010. The drop in nominal prices between the annual averages of

2007 and 2011 is therefore roughly 28%, which corresponds to a nearly 50% decrease in real terms.

Króna to appreciate in the medium term

The main assumption behind the baseline forecast is that foreign exchange market functioning will be restored. It is expected that a credible economic plan prepared in collaboration with the IMF and the associated access to foreign credit will provide enough confidence to stop the collapse of the exchange rate and evoke long-term appreciation of the króna.

The forecast assumes that the euro will stand at ISK 153 in Q4/2008 but that the króna will then strengthen and remain rather stable at 130-135 against the euro beginning in mid-2009. These developments are shrouded in uncertainty, but they play a key role in how quickly inflation can be controlled and the policy rate lowered. If it takes a long time to restore confidence in the króna and inflation remains high, nominal interest rates must remain high for a longer period of time. This, in turn, could determine how quickly economic recovery can begin.

Output slack contributes to disinflation …

According to projections published in the last *Monetary Bulletin*, a substantial contraction of GDP was foreseen in the next several years, leading to significant output slack. This was expected to contribute to disinflation. As is described in Section IV, the current forecast envisages a sharper contraction in GDP and a correspondingly more pronounced output slack as a result of the financial crisis. However, the slack might be seen as increasing somewhat less than expected in view of the contraction. This is primarily due to rising cost of capital, which in turn results from higher risk premia. Furthermore, it can be assumed that the capital stock will deteriorate, due in part to lost human capital following the banking crisis and the cost of moving factors of production between sectors. As a result, it is assumed that growth in potential output will decrease during the early part of the forecast horizon but begin to recover by the end of the horizon. Slower growth in potential output implies a smaller negative output gap than would otherwise exist. The slack will emerge early in 2009 and peak at 6½% in mid-2010, with some underutilised capacity remaining throughout the forecast horizon. This will promote rapid disinflation, however, once the króna begins to appreciate again.

… and wage pressures subside swiftly

As is discussed in Section VI, unemployment is expected to gain pace rapidly in the next few months. According to the forecast, it will peak at about the same time as the output slack. These factors should combine to reduce wage pressures significantly and result in moderate nominal wage growth despite high inflation. On the other hand, the outlook is for insignificant productivity growth until the latter half of 2010. Unit labour cost will therefore rise somewhat, although it will diminish rather quickly towards the end of 2010. Growth in unit labour cost is expected to be well in line with the inflation target by the end of the forecast horizon.

Appendix 1

Baseline macroeconomic and inflation forecast 2008/3

Table 1 Macroeconomic forecast[1]

		Volume change on previous year (%) unless otherwise stated				
	B.kr.		*Forecast*			
GDP and its main components	*2007*	*2007*	*2008*	*2009*	*2010*	*2011*
Private consumption	749.0	4.3 (4.2)	-7.6 (-0.9)	-24.8 (-7.7)	-3.8 (-7.8)	9.9
Public consumption	316.8	4.2 (3.3)	3.5 (3.5)	2.9 (4.0)	2.9 (3.5)	2.9
Gross fixed capital formation	356.9	-13.7 (-14.9)	-19.2 (-9.0)	-20.2 (1.3)	6.9 (1.8)	-21.2
Business sector investment	211.6	-26.0 (-25.4)	-21.7 (-16.6)	-26.2 (0.1)	21.1 (6.4)	-31.6
Residential construction	90.6	13.2 (13.2)	-32.4 (-5.3)	-24.4 (-7.5)	-10.4 (-9.3)	13.3
Public works and buildings	54.7	19.2 (4.3)	11.4 (21.2)	1.4 (16.9)	-12.9 (0.3)	-13.5
National expenditure	1,429.4	-1.4 (-2.3)	-8.3 (-1.9)	-17.6 (-3.3)	0.6 (-2.7)	0.8
Exports of goods and services	451.7	18.1 (18.1)	9.6 (4.7)	-0.5 (-1.0)	2.6 (3.9)	5.5
Imports of goods and services	587.9	-1.4 (-1.4)	-16.8 (-4.1)	-24.5 (-4.2)	10.6 (1.1)	-0.1
Gross domestic product	1,293.2	4.9 (3.8)	1.8 (1.1)	-8.3 (-2.0)	-1.7 (-1.9)	3.2
Other key aggregates						
Trade balance (% of GDP)		-10.5 (-10.6)	-1.6 (-9.1)	9.3 (-7.4)	6.6 (-6.2)	8.5
Current account balance (% of GDP)		-15.4 (-15.6)	-16.3 (-17.4)	-1.3 (-13.3)	-2.0 (-10.7)	3.4
Output gap (% of potential output)		3.2 (3.3)	3.1 (1.9)	-4.7 (-1.2)	-5.8 (-4.2)	-4.2
Unit labour cost (change between annual averages in %)		6.8 (7.0)	7.1 (7.6)	6.3 (6.2)	4.4 (3.8)	2.4
Real earnings (change between annual averages in %)		8.0 (5.8)	-8.2 (-5.3)	-13.7 (-5.4)	5.6 (-0.3)	8.1
Unemployment (% of labour force)		1.0 (1.0)	1.4 (1.5)	6.3 (3.2)	8.1 (4.2)	5.1
EURISK exchange rate		87.4 (87.4)	124.6 (115.0)	141.1 (115.9)	129.7 (113.8)	133.0

1. Figures in parentheses show forecast in *Monetary Bulletin* 2008/2.

Table 2 Inflation forecast (%)[2]

Quarter	*Inflation (Change on same period of previous year)*	*Annualised quarterly inflation*
	Measured value	
2007:1	6.5 (6.5)	2.0 (2.0)
2007:2	4.4 (4.4)	5.8 (5.8)
2007:3	3.9 (3.9)	5.6 (5.6)
2007:4	5.4 (5.4)	8.4 (8.4)
2008:1	7.0 (7.0)	8.2 (8.2)
2008:2	12.0 (12.0)	27.0 (27.0)
2008:3	13.7 (13.3)	12.1 (10.8)
	Forecast value	
2008:4	19.1 (12.8)	30.7 (6.4)
2009:1	22.7 (12.3)	21.7 (6.4)
2009:2	17.0 (7.6)	5.0 (6.7)
2009:3	12.6 (6.0)	-3.7 (4.4)
2009:4	5.5 (4.9)	0.6 (2.0)
2010:1	2.7 (4.0)	9.4 (2.8)
2010:2	2.6 (3.4)	4.6 (4.2)
2010:3	2.3 (2.6)	-4.9 (1.4)
2010:4	2.2 (2.2)	0.2 (0.6)
2011:1	2.0 (2.0)	8.7 (2.0)
2011:2	1.9 (2.0)	4.0 (4.2)
2011:3	2.4	-3.0

Annual average	*Inflation*
2007	5.0 (5.0)
2008	13.0 (11.3)
2009	14.1 (7.6)
2010	2.4 (3.0)
2011	2.2

2. Figures in parentheses show forecast in *Monetary Bulletin* 2008/2.

Monetary policy and instruments

The objective and implementation of monetary policy

The objective of monetary policy is price stability. On March 27, 2001, a formal inflation target was adopted, as follows:[1]

- The Central Bank aims for an annual rate of inflation, measured as the twelve-month increase in the CPI, which in general will be as close as possible to 2½%.
- If inflation deviates by more than 1½% from the target, the Central Bank shall be obliged to submit a report to the Government explaining the reason for the deviation, how it intends to respond, and when it expects the inflation target to be reached again. This report shall be made public.
- The Central Bank shall publish inflation forecasts, projecting inflation at least two years into the future. Forecasts shall be published in the Bank's *Monetary Bulletin*. This shall also contain the Bank's assessment of the main uncertainties pertaining to the inflation forecast. The Bank shall also publish its assessment of the current economic situation and outlook.

Since monetary policy aims at maintaining price stability, it will not be applied in order to achieve other economic targets, such as a balance on the current account or a high level of employment, except insofar as this is consistent with the Bank's inflation target.

Macroeconomic and inflation forecasts perform an important function in monetary policy conduct. As of *Monetary Bulletin* 2007/1, the Bank's forecasts are based on the policy rate path that its staff consider appropriate for attaining the inflation target. The policy rate path is chosen with the aim of bringing inflation to 2½% within an acceptable horizon and stabilising it close to that target afterwards. Confidence limits are presented for the policy rate to underline the uncertainties surrounding the forecast, emphasising that the policy rate path is subject to change over time as new data become available.

The Central Bank announces interest rate decisions on scheduled, prearranged dates. Before an interest rate decision is made, the Board

Overview of Central Bank interest rates October 31, 2008

Traditional instruments	*Current rate (%)*	*Last change*		*Rate one year ago (%)*
		Date	*Percentage points*	
Current accounts	17.50	October 28, 2008	5.00	12.75
Overnight loans	20.00	October 28, 2008	7.00	15.25
Required reserves	17.50	October 28, 2008	6.00	13.00
Collateral loans – policy rate	18.00	October 28, 2008	6.00	13.30
Certificates of deposit, 7 days	17.75	October 28, 2008	6.00	13.20

1. Joint declaration of the Government of Iceland and the Central Bank of Iceland. Published on the Central Bank of Iceland website, www.sedlabanki.is.

of Governors convenes monetary policy meetings, as is detailed in the Bank's internal rules on the preparation, arguments for and presentation of monetary policy decisions, which are set pursuant to the provisions of the Central Bank Act. The internal rules are published on the Central Bank website: www.sedlabanki.is.

Main monetary policy instruments

In particular, the Central Bank implements its monetary policy by managing money market interest rates, primarily through interest rate decisions for its collateral loan agreements with credit institutions, which then affect other interest rates. Yields in the money market also have a strong impact on currency flows and thereby on the exchange rate, and in the long run on domestic demand. Generally speaking, transactions with financial institutions can be classified as regular transactions and other transactions. Transactions between financial institutions and the Central Bank are subject to the Rules on Central Bank of Iceland Facilities for Financial Undertakings, no. 808 of August 22, 2008.

Regular transactions:

- Current accounts are deposits of the credit institutions' undisposed assets. These are settlement accounts for netting between deposit institutions and for interbank market trading, including transactions with the Central Bank. Interest rates on these accounts set the floor for overnight interest rates in the interbank market.
- Overnight loans are provided at the request of credit institutions and secured with the same securities that are eligible for collateral loan transactions (see below). Overnight interest rates form the ceiling for overnight interest rates in the interbank market.
- Certificates of deposit are issued with a maturity of 7 days, at the request of credit institutions. They are registered at the Icelandic Securities Depository and with Clearstream. Their function is to counteract temporary surplus liquidity in the banking system. The auction format is fixed-price. Financial institutions can also deposit funds in time deposit accounts bearing the same interest rate.
- Collateral loans are the Central Bank's main instrument. Auctions of 7-day agreements are held every week. Credit institutions must put up securities that are eligible as collateral, as specified in the Central Bank's Rules no. 317 of April 2, 2008. Auctions can be fixed-price or auctions where the total amount is announced. Fixed-price auctions have been used so far. The interest rate on collateral loans constitutes the Central Bank's policy rate.

Other transactions:

Other transactions take place as decided by the Board of Governors.

- Collateral loans, certificates of deposit, and time deposits with periods other than those assumed in regular transactions
- Currency swap agreements
- Repurchase agreements with securities that are deemed eligible as financial collateral according to Article 11 of the Rules on Central

Central Bank of Iceland interest rate decisions

Date Policy rate interest decision dates in 2008	Interest on collateral loans (%) Nominal rate[1] (policy rate)	Yield	Change
November 6, 2008	18.00		0
October 28, 2008	18.00		6.00
October 15, 2008	12.00		-3.50
September 11, 2008	15.50		0
July 3, 2008	15.50		0
May 22, 2008	15.50		0
April 10, 2008	15.50		0.50
March 25, 2008	15.00		1.25
Previous decisions			
December 20, 2007	13.75		0
November 1, 2007	13.75		0.45
September 6, 2007	13.30		0
July 5, 2007	13.30		0
May 16, 2007[1]	(13.30)	14.25	0
March 29, 2007	(13.30)	14.25	0
February 8, 2007	(13.30)	14.25	0
December 21, 2006	(13.30)	14.25	0.25
November 2, 2006	(13.09)	14.00	0
September 14, 2006	(13.09)	14.00	0.50
August 16, 2006	(12.65)	13.50	0.50
July 6, 2006	(12.21)	13.00	0.75
May 18, 2006	(11.54)	12.25	0.75
March 30, 2006	(10.87)	11.50	0.75
January 26, 2006	(10.20)	10.75	0.25
December 2, 2005	(9.97)	10.50	0.25
September 29, 2005	(9.75)	10.25	0.75
June 3, 2005	(9.07)	9.50	0.50
March 22, 2005	(8.61)	9.00	0.25
February 18, 2005	(8.38)	8.75	0.50
December 2, 2004	(7.92)	8.25	1.00
October 29, 2004	(6.99)	7.25	0.50
September 17, 2004	(6.53)	6.75	0.50
July 1, 2004	(6.06)	6.25	0.50
June 1, 2004	(5.59)	5.75	0.25
May 6, 2004	(5.35)	5.50	0.20
February 10, 2003	(5.16)	5.30	-0.50
December 12, 2002	(5.63)	5.80	-0.50
November 6, 2002	(6.10)	6.30	-0.50
October 15, 2002	(6.57)	6.80	-0.50
September 18, 2002	(6.85)	7.10	-0.50
August 30, 2002	(7.31)	7.60	-0.30
August 1, 2002	(7.59)	7.90	-0.60
June 18, 2002	(8.15)	8.50	-0.30
May 16, 2002	(8.42)	8.80	-0.50
April 30, 2002	(8.88)	9.30	-0.30
March 26, 2002	(9.15)	9.60	-0.50
November 8, 2001	(9.60)	10.10	-0,80
March 27, 2001	(10.33)	10.90	-0.50

1. The policy rate as quoted until May 2007 is presented as a nominal discounted rate.

Bank of Iceland Facilities for Financial Undertakings. The purchases must take place on a regulated securities market.

Reserve requirements

Required reserves apply to credit institutions that are not dependent on Treasury budget allocations for their operations. The required reserve base comprises deposits, issued securities and money market instruments. The required reserve ratio is 2% for the part of the required reserve base that is tied for two years or less. The maintenance period is based on the 21st day of each month until the 20th of the following month, and the two-month average reserve is required to reach the stipulated ratio during the period. Reserve requirements do not apply to foreign branches of Icelandic financial institutions.

Intervention in the foreign exchange market

Foreign exchange market intervention, in keeping with the declaration on the inflation target from 2001, is employed only if the Central Bank considers this necessary in order to promote its inflation target or sees exchange rate fluctuations as a potential threat to financial stability.

Temporary measures

Because of the extraordinary financial market developments in October 2008, the exchange rate of the króna will continue to affect interest rate decisions more than they did previously.

Economic and monetary chronicle

July 2008

On July 3, the Board of Governors of the Central Bank of Iceland decided to leave the Bank's policy interest rate unchanged at 15.5%.

September 2008

On September 11, the Board of Governors of the Central Bank of Iceland decided to leave the Bank's policy interest rate unchanged at 15.5%.

On September 19, the Financial Supervisory Authority approved Byr Savings Bank's application to change the savings bank into a limited liability company.

On September 29, the Office of the Prime Minister announced an agreement between the government and the largest owners of Glitnir Bank hf., following consultation with the Central Bank of Iceland and the Financial Supervisory Authority, under which the government would contribute new share capital in the amount of 600 million euros, thereby becoming the owner of a 75% stake in Glitnir.

October 2008

On October 6, the Financial Supervisory Authority announced its decision to stop trading temporarily with all financial instruments issued by Glitnir Bank hf., Kaupthing Bank hf., Landsbanki Íslands hf., Straumur-Burdarás Investment Bank hf., SPRON hf., and Exista hf., and traded on a regulated securities exchange.

On October 6, Parliament passed the Act on Authority for Treasury Disbursements due to Unusual Financial Market Circumstances, no. 125/2008. According to the Act, special and very unusual circumstances refers to particular financial and/or operational difficulties experienced by a financial undertaking, including the probability that it will not be able to honour its commitments vis-à-vis its customers or creditors, the likelihood that the premises for revocation of its operating licence exist, or the likelihood that the undertaking cannot meet the minimum requirements for equity, and the measures adopted by the Financial Supervisory Authority are not likely to limit the damage or risk of damage to the financial markets. Under such circumstances, the Financial Supervisory Authority is authorised to adopt special measures.

On October 7, the Financial Supervisory Authority announced its decision to define short sales of shares of specified issuers as behaviour opposed to accepted market practices. From October 7, 2008, through January 16, 2009, it is prohibited to sell short shares in Glitnir Bank hf., Kaupthing Bank hf., Landsbanki Íslands hf., Straumur-Burdarás Investment Bank hf., SPRON hf., and Exista hf., that had been admitted for trading on the regulated securities exchange in Iceland, unless the seller has the securities in his custody at the time of the offer. The

prohibition also includes all other financial instruments that have the same purpose and same economic exposure as the short sale of the specified shares, as well as other financial instruments whose value is determined by the price of the specified shares.

On October 7, the Financial Supervisory Authority announced that it had intervened in the operations of Landsbanki Íslands hf., based on the authority contained in the Act on Authority for Treasury Disbursements due to Unusual Financial Market Circumstances, no. 125/2008. The Financial Supervisory Authority appointed a resolution committee, which assumed all of the authorisations of the Board of Directors of Landsbanki.

On October 7, the Financial Supervisory Authority announced that it had intervened in the operations of Glitnir Bank hf., based on the authority contained in the Act on Authority for Treasury Disbursements due to Unusual Financial Market Circumstances, no. 125/2008. The Financial Supervisory Authority appointed a resolution committee, which assumed all of the authorisations of the Board of Directors of Glitnir.

On October 9, the Financial Supervisory Authority announced that it had intervened in the operations of Kaupthing Bank hf., based on the authority contained in the Act on Authority for Treasury Disbursements due to Unusual Financial Market Circumstances, no. 125/2008. The Financial Supervisory Authority appointed a resolution committee, which assumed all of the authorisations of the Board of Directors of Kaupthing.

On October 9, New Landsbanki Íslands hf. commenced operations after having taken over a part of the operations of Landsbanki Íslands hf.

On October 13, the Financial Supervisory Authority granted MP Investment Bank hf. a commercial banking licence. The commercial banking licence took effect on October 10, 2008.

On October 14, the Central Bank of Iceland announced that it had drawn a total of 400 million euros on the currency swap agreements with the central banks of Denmark and Norway.

On October 14, the OMX Nordic Exchange Iceland hf. approved Landsbanki Íslands hf.'s request for the delisting of its shares. The bank's shares were removed from trading after the market closed on October 14, 2008.

On October 15, the Board of Governors of the Central Bank of Iceland decided to lower the Bank's policy interest rate by 3.5 percentage points, to 12%.

On October 15, the OMX Nordic Exchange Iceland hf. approved Glitnir Bank hf.'s October 14 request for the delisting of its shares. The bank's shares were removed from trading after the market close on October 14, 2008.

On October 15, the Central Bank of Iceland came to an agreement with market makers in the foreign exchange market, as well as with

several other financial undertakings, concerning temporary foreign exchange arrangements. Daily auctions of the euro against the króna provide an indication of the exchange rate of the króna vis-à-vis other currencies and ensures a minimum level of cross-border business activity. The exchange rate is determined by supply and demand for foreign currency, which is initially in accordance with the Central Bank's guidelines on modifications in currency outflow.

On October 15, New Glitnir Bank hf. commenced operations after having taken over a part of the operations of Glitnir Bank hf.

On October 17, a meeting of Icebank hf. shareholders approved a motion to change the name of the bank to Sparisjódabanki Íslands hf.

On October 22, New Kaupthing Bank hf. commenced operations after having taken over a part of the operations of Kaupthing Bank hf.

On October 27, the Financial Supervisory Authority announced its opinion that, on October 6, Landsbanki Íslands hf. was unable to remit payment of deposits in specified accounts to customers requesting such payment. Therefore, by law, the Depositors' and Investors' Guarantee Fund was obligated towards the Landsbanki Íslands hf. customers who did not receive payment from their accounts. Comparable obligations had developed on October 9 with respect to Kaupthing Bank hf., and on October 3 with respect to Glitnir Bank hf.

On October 28, the Board of Governors of the Central Bank of Iceland decided to raise the Bank's policy interest rate by 6 percentage points, to 18%.

Credit ratings – changes July-October 2008

Moody's credit ratings for foreign-currency obligations

	Affirmed	*Long-term obligations*	*Short-term obligations*	*Financial strength*
Republic of Iceland	Oct. 8	Aa1→A1	P-1	
Housing Financing Fund	Oct. 8	Aa1→A1		
Glitnir	Sept. 30	A2→Baa2	P-1→P-2	C-→D
	Oct. 8	Caa1	Not-Prime	E
Kaupthing	Oct. 9	A1→Baa3	P-1→P-3	C-→D+
Landsbanki	Oct. 8	A2→Caa1	P-1→Not-Prime	C-→E

Fitch Ratings' credit ratings for foreign-currency obligations

	Affirmed	*Long-term obligations*	*Short-term obligations*	*Individual rating*	*Support rating*
Republic of Iceland	Sept. 30	A+→A-	F1→F2		
	Oct. 9	BBB-	F3		
Glitnir	Sept. 30	A-→BBB-	F2→F3	B/C→F	2
	Oct. 7	B	B	F	4
	Oct. 8	D	D	F	5
Kaupthing	Sept. 30	A-→BBB	F2→F3	B/C→C	2
	Oct. 8	CCC	C	E	5
Landsbanki	Sept. 30	A→BBB	F1→F3	B/C→C	
	Oct. 7	B	B	F	4
	Oct. 8	D	D	F	5
Straumur-Burdaras	Sept. 30	BBB-→BB+	F3→B	C/D	3
Investment Bank	Oct. 9	BB-	B	D	5

Standard & Poor's credit ratings for foreign-currency obligations

	Affirmed	*Long-term obligations*	*Short-term obligations*	*Financial strength*
Republic of Iceland	Sept. 29	A→A-	A-1→A-2	
	Oct. 6	BBB	A-3	
Housing Financing	Sept. 29	A→A-	A-1→A-2	
Fund	Oct. 6	BBB	A-3	
Glitnir	Sept. 29	BBB+→BBB	A-3	A-2→A-3
	Oct. 7	CCC	C	
	9. okt.	D	D	

R&I's credit rating for foreign-currency obligations

	Affirmed	*Long-term obligations*
Republic of Iceland	Sept. 30	AA+→AA
	Oct. 7	A+
	Oct. 9	BBB-

Tables and charts

Tables and charts are generally based on statistical information available on October 22, 2008, apart from financial market data, which are from September 30, 2008. A list of symbols is on p. 2.

A Tables

B Charts

Table 1 Main monthly indicators

	Consumer prices		Exchange rate		Yields (end of period, %)						Money and credit (end of period)[6]			
	% change in CPI[1] over the previous		% ch. in effective exchange rate [1,2]			Short-term		Long-term[5]			12-month % change			
	1 month	12 months	1 month	12 months	Central Bank collateral loans[3]	3-month REIBOR[4]	RIKB 10 0317	RIKB 13 0517	RIKS 15 1001	HFF 150644	Base money	M3	DMB lending	DMB foreign liabilities[7]
2006														
August	0.3	8.6	4.7	-12.2	12.65	13.3	8.8	8.0	4.3	4.1	30.7	17.9	47.2	80.0
September	0.6	7.6	1.0	-13.5	13.09	13.5	8.6	7.8	4.1	3.9	60.2	19.3	42.2	81.2
October	0.2	7.2	3.2	-13.8	13.1	14.3	9.2	8.0	4.6	4.2	37.3	9.4	39.5	75.1
November	0.0	7.3	-2.7	-16.2	13.1	14.5	9.7	8.4	4.8	4.3	25.4	19.4	36.8	75.4
December	0.0	7.0	-2.1	-15.4	13.3	15.2	9.8	8.9	4.9	4.2	33.1	15.4	41.4	73.5
2007														
January	0.3	6.9	0.3	-16.6	13.3	15.1	9.3	8.3	5.1	4.4	44.4	17.9	37.3	68.6
February	0.4	7.4	3.5	-10.9	13.3	15.3	9.9	8.8	5.5	4.4	-8.4	14.9	32.1	55.8
March	-0.3	5.9	-0.2	-3.1	13.3	13.8	10.5	9.1	5.0	4.3	102.7	26.1	27.8	40.1
April	0.6	5.3	1.0	6.4	13.3	14.1	10.8	9.2	.	4.3	28.2	28.2	26.6	31.7
May	0.9	4.7	3.6	9.7	13.3	13.9	10.8	9.1	.	4.3	46.0	32.1	24.8	34.1
June	0.5	4.0	1.0	14.3	13.3	13.9	10.9	9.1	.	4.4	48.5	38.5	22.1	33.1
July	0.2	3.8	1.7	15.8	13.3	14.1	11.4	9.5	.	4.6	61.7	44.8	24.0	48.3
August	0.0	3.4	-6.3	3.6	13.3	14.3	11.9	9.6	.	4.5	210.3	58.2	33.1	60.7
September	1.3	4.2	0.5	3.2	13.3	14.2	12.2	9.5	.	4.6	56.7	47.5	31.4	65.6
October	0.5	4.5	3.2	3.1	13.3	13.9	12.5	10.2	.	5.0	83.0	50.6	30.8	63.8
November	0.6	5.2	-2.1	3.7	13.8	14.3	12.2	10.4	.	5.3	182.0	56.6	32.3	59.0
December	0.7	5.9	-1.5	4.4	13.8	14.3	12.6	10.2	.	4.9	23.0	63.3	30.7	59.1
2008														
January	0.2	5.8	-3.6	0.4	13.8	13.9	11.1	9.5	.	4.7	85.6	51.2	40.1	69.1
February	1.4	6.8	-3.5	-6.4	13.8	13.7	12.1	9.8	.	4.4	218.7	42.4	44.1	66.8
March	1.5	8.7	-10.5	-16.1	15.0	15.4	13.2	12.3	.	4.4	158.6	25.4	55.1	100.2
April	3.4	11.8	-3.8	-20.2	15.5	15.8	12.5	11.7	.	4.3	177.2	49.7	47.1	91.7
May	1.4	12.3	-0.7	-23.4	15.5	16.0	10.5	9.6	.	4.2	121.2	34.1	48.4	93.6
June	0.9	12.7	-4.8	-27.8	15.5	16.0	12.0	10.2	.	4.2	140.4	30.7	52.4	93.3
July	0.9	13.6	0.0	-29.0	15.5	16.1	12.8	10.7	.	4.1	201.7	30.8	49.8	76.5
August	0.9	14.5	0.0	-24.3	15.5	16.1	13.0	10.6	.	4.2	...	22.4	44.7	64.7
September	0.9	14.0	-7.8	-30.5	15.5	16.1	10.8	9.0	.	3.7	...	...	...	...

1. Percentage changes between period averages. 2. Based on the official effective exchange rate basket (trade-weighted). A positive sign indicates appreciation of the Icelandic króna. 3. From June 2007, the presentation of the policy rate has been changed. It is now presented as a nominal rate instead of a yield. 4. Average yield on the interbank market in Icelandic krónur. 5. For Treasury bonds and HFF bonds, the quoted yield is in excess of changes in the CPI. Trading with HFF bonds began in July 2004; prior figures are for housing bonds. 6. Annual figures are changes over one year. Domestic borrowers only as of January 2002. Latest figures are preliminary. 7. DMBs = deposit money banks = commercial and savings banks and other institutions permitted to accept deposits from the public. Since July 2007, derivatives have been counted as foreign liabilities and the presentation of Central Banks' short-term position has been changed.

Table 1 (continued) Main monthly indicators

	Foreign exchange market and reserves				Foreign trade and external conditions					Labour market		Public finance	Asset prices 12-mo. % changes	
	Gross foreign currency reserves:			CB										
		as ratio of:												
	Position B.kr.	Merch. imports[8]	For. short-term liabil.[9]	net purchases (b.kr.)	Trade balance (b.kr.)	Merchandise exports (b.kr.)	Merchandise imports (b.kr.)	Marine product prices 12-mo.% ch.[10]	Real exchange rate of króna[11]	Unemployment	Wages, 12-mo. % change[12]	Reg. Treasury financial balance, % of reg. revenues, from Jan.[13]	Equity prices[14]	Housing prices[15]
2006														
August	72.6	2.3	0.09	1.6	-14.4	16.6	31.0	10.7	101.9	1.2	10.6	9.7	28.6	10.8
September	71.3	2.3	0.10	1.4	-7.4	25.4	32.7	10.2	103.4	1.0	10.8	11.9	35.8	10.5
October	70.9	2.3	0.10	1.5	-9.1	20.0	29.1	11.1	106.8	1.0	11.0	15.5	35.1	7.2
November	92.4	2.9	0.11	1.6	-15.9	20.2	36.0	11.7	103.7	1.1	10.5	15.6	21.0	4.8
December	167.9	4.8	0.20	1.2	-20.9	20.1	41.0	11.2	101.1	1.2	9.8	17.3	15.8	5.0
2007														
January	160.4	4.9	0.17	1.9	-2.8	25.9	28.7	30.6	102.3	1.3	10.1	45.5	12.3	6.9
February	160.1	4.8	0.16	1.6	-5.0	23.9	28.9	22.5	105.6	1.3	9.8	34.8	10.8	5.0
March	154.6	4.8	0.14	1.6	-3.3	30.6	33.9	12.9	104.8	1.3	9.7	28.7	27.1	5.8
April	151.1	4.7	0.12	1.8	-11.1	21.8	32.8	1.5	105.9	1.1	9.8	23.2	39.1	5.3
May	144.5	4.7	0.11	1.5	-9.5	24.2	33.7	-3.0	109.9	1.1	9.6	19.5	43.1	9.3
June	143.7	4.7	0.10	1.5	-9.5	23.1	32.6	-7.0	111.5	1.0	9.8	16.9	51.6	9.2
July	145.0	4.8	0.07	1.6	-11.0	21.7	32.7	-6.8	113.6	0.9	8.3	16.9	63.7	12.7
August	151.9	4.8	0.07	1.4	-13.0	17.8	30.9	2.2	106.4	0.8	8.0	14.3	37.8	10.8
September	154.9	4.9	0.07	1.5	-9.6	21.0	30.6	4.7	107.9	0.8	8.1	14.3	26.9	11.0
October	156.7	4.9	0.08	1.8	-8.6	33.5	42.0	5.0	111.2	0.8	8.1	14.7	28.4	16.7
November	162.7	4.9	0.06	1.5	2.6	36.0	33.4	4.8	108.6	0.8	8.3	14.3	13.1	14.1
December	162.8	4.9	0.05	1.7	-9.3	25.5	34.8	3.5	107.5	0.8	8.6	14.6	-1.4	15.0
2008														
January	174.8	4.9	0.08	1.5	-9.5	24.2	33.7	5.6	103.9	1.0	6.2	44.2	-22.2	14.0
February	182.8	5.0	0.08	1.6	-12.4	19.5	31.9	13.2	101.1	1.0	6.8	36.9	-33.2	12.7
March	220.0	5.1	0.06	1.3	-2.3	34.3	36.6	27.7	91.0	1.0	7.8	26.1	-32.6	9.6
April	206.8	5.0	0.06	...	-0.8	39.8	40.7	30.1	89.8	1.0	8.2	21.1	-32.8	7.0
May	190.1	4.5	0.05	...	-1.6	47.6	49.2	36.0	90.1	1.0	7.9	17.3	-41.9	3.8
June	203.0	4.6	0.0	...	2.3	41.4	39.1	48.7	85.9	1.1	8.5	11.5	-47.3	3.2
July	227.0	5.1	0.1	...	-17.5	34.2	51.6	47.6	86.6	1.1	9.1	9.5	-52.3	2.6
August	307.7	6.8	0.1	...	-3.2	31.3	34.5	38.1	87.6	1.2	9.1	3.5	-49.3	1.6
September	374.8	...	...	...	...	...	...	...	81.6	...	...	...	-57.4	0.6

8. Gross foreign exchange reserves at end of period as a ratio of the average monthly value of merchandise imports. Calculated at fixed exchange rates. 9. The denominator is foreign short-term liabilities of credit institutions and investment banks and includes derivatives as of July 2007. 10. Prices in SDR. Annual figures are % changes between annual averages. Since January 2007, the 12-month percentage change in marine product prices denominated in the króna. 11. Real effective exchange rate of the Icelandic króna based on relative consumer prices (a trade-weighted average of 17 trading partner countries' consumer prices is used), 2000 = 100. Average over periods. 12. Annual figures show change in annual averages. 13 Cash basis. Without privatisation revenues. Adjusted for changed timing of expenditure charges in Jan.-Nov. 2004. 14. OMXI15 index. Annual figures are % changes over year. 15. Residential housing in the greater Reykjavík area. Annual figures are % changes over year.

Sources: Directorate of Labour, Iceland Stock Exchange (OMX Iceland), Land Registry of Iceland, State Accounting Office, Statistics Iceland, Central Bank of Iceland.

Table 2 Historical economic indicators

	Consumer prices [1]		Króna effective exchange rate			Interest rates (%)			Money and credit % change over year			Ratio of gr. reserves to merch. imports[5]	Net external debt[6]	Growth of real GDP (%)
	Consumer price index[1]	CPI inflation (%)	Nominal exchange rate[2]	Real exchange rate[3] Relative CPI	Real exchange rate[3] Relative ULC	Gov. bonds average yield[4]	Banks' secured lending (real yield) Non-indexed	Banks' secured lending (real yield) Indexed	M3	DMBs' lending	Credit system lending			
1978	3.5	44.0	13.9	107.1	117.7	3.3	-13.4	.	48.7	47.3	62.8	2.6	39.2	6.0
1979	5.0	44.5	18.7	101.7	111.2	3.5	-15.4	.	55.9	58.1	46.4	2.5	39.7	4.9
1980	8.1	61.8	25.9	101.8	110.4	3.5	-8.3	2.3	65.4	66.4	71.1	2.4	35.9	5.8
1981	12.2	50.8	34.7	106.2	115.0	3.2	-1.7	2.5	70.5	72.2	54.1	3.0	36.5	4.3
1982	18.4	51.0	54.5	97.7	112.6	3.5	-9.4	2.9	58.0	92.0	100.2	2.1	46.4	2.1
1983	33.9	84.2	100.0	91.8	94.1	3.8	-14.2	3.0	78.7	85.6	82.9	2.5	57.2	-2.2
1984	43.7	29.2	116.3	96.3	91.2	7.0	3.4	5.5	33.4	43.0	40.2	2.1	60.2	4.1
1985	57.9	32.4	148.7	94.8	91.1	6.9	-2.3	5.0	47.6	29.7	35.2	2.8	63.6	3.3
1986	70.2	21.3	171.0	97.1	92.0	8.5	4.3	5.2	35.0	19.1	20.1	3.6	56.5	6.3
1987	83.4	18.8	177.3	106.0	117.2	8.7	4.7	7.7	35.2	42.1	31.4	2.4	49.4	8.5
1988	104.6	25.4	202.6	111.4	126.7	8.7	11.8	9.2	24.0	37.2	34.0	2.4	51.3	-0.1
1989	126.7	21.1	254.7	102.4	110.4	7.4	6.5	7.8	27.2	25.2	33.8	3.0	56.8	0.3
1990	145.5	14.8	283.7	99.1	98.6	7.0	9.3	8.0	14.9	11.0	12.5	3.3	43.8	1.2
1991	155.4	6.8	283.6	101.7	100.5	8.1	10.0	9.2	14.4	11.6	15.4	3.2	44.9	-0.2
1992	161.2	3.7	285.0	101.7	101.8	7.4	11.8	9.3	3.8	5.3	11.8	4.0	53.0	-3.4
1993	167.8	4.1	308.8	96.2	93.8	6.7	11.5	9.1	6.5	5.0	11.1	4.3	58.9	1.3
1994	170.3	1.5	324.8	91.0	82.5	5.0	9.5	7.9	2.3	-1.3	4.5	2.6	53.3	3.6
1995	173.2	1.7	322.3	91.1	87.2	5.6	10.1	8.7	2.2	-8.5	5.9	2.4	52.0	0.1
1996	177.1	2.3	322.9	91.3	88.0	5.5	10.5	8.9	6.8	11.8	9.3	3.0	49.8	4.8
1997	180.3	1.8	318.7	92.2	89.4	5.3	11.1	9.0	11.5	12.7	11.8	2.6	51.3	4.9
1998	183.3	1.7	313.6	93.8	92.0	4.7	11.8	8.8	12.3	30.3	15.1	2.2	57.6	6.3
1999	189.6	3.4	313.1	96.3	96.4	4.4	8.0	8.6	19.0	26.3	17.3	2.6	67.1	4.1
2000	199.1	5.0	313.3	100.0	100.0	5.1	12.7	9.5	11.3	26.1	17.2	2.1	94.0	4.3
2001	212.4	6.7	376.3	87.3	86.7	5.1	9.4	10.2	16.7	12.6	19.2	2.1	102.0	3.9
2002	222.5	4.8	365.2	91.7	90.4	5.2	13.7	10.1	12.9	0.9	3.2	2.5	89.8	0.1
2003	227.3	2.2	343.3	96.0	95.8	4.4	9.4	9.1	21.3	14.8	11.4	3.5	93.3	2.4
2004	234.6	3.2	336.3	98.1	93.5	3.9	8.3	8.0	17.1	39.5	19.9	3.6	113.5	7.7
2005	244.1	4.0	301.8	111.4	106.2	3.7	10.7	7.2	17.7	51.5	31.1	2.9	152.4	7.4
2006	260.6	6.8	337.2	104.2	104.5	4.6	10.9	6.9	15.4	41.4	33.6	2.8	204.2	4.4
2007	273.7	5.0	328.9	108.6	117.9	6.0	14.3	8.0	63.3	30.7	21.9	2.9	246.4	4.9

1. Annual averages (May 1988=100) and changes between years. 2. Annual averages. Exchange rate of the króna against a trade-weighted average of foreign currencies. 1983=100. 3. 2000=100. ULC=unit labour cost. 4. Annual average yield of indexed Treasury bonds of all maturities. Yields on Iceland Stock Exchange (OMX Iceland) from 1987. Before that, primary market yields. 5. Gross foreign exchange reserves at end of period as a ratio of the average monthly value of merchandise imports in the last 12 months. Calculated at fixed exchange rates. 6. External debt ratio is calculated as a percentage of accumulated GDP for the last four quarters at current exchange rate.

Table 2 (continued) Historical economic indicators

	Components of GDP (% change from previous year)			External trade (% change from previous year)							Labour market (% of labour force)		Wages (% change from previous year)	
				Goods & services (volume changes)				General government (% of GDP)[7]						
	Private consump-tion	Gross fixed cap. formation	National expendi-ture	Exports	Imports	Terms of trade	Curr. acc. balance (% of GDP)	Financial balance	Revenues	Expend-itures	Unem-ployment	Labour particip.[8]	Real wages[9]	Real disp. income per capita
1978	9.0	-5.5	2.1	15.2	3.7	0.2	1.2	0.0	33.8	33.8	0.3	73.6	.	8.5
1979	2.8	-1.8	3.4	6.3	2.5	-8.6	-0.7	0.9	35.1	34.2	0.4	73.0	.	2.0
1980	3.4	13.9	5.9	2.7	3.0	-2.8	-1.9	1.4	35.4	34.1	0.3	74.1	.	1.1
1981	6.2	1.2	5.6	3.2	7.1	-0.4	-4.0	1.3	36.8	35.5	0.4	76.8	0.7	5.4
1982	5.0	0.1	5.0	-8.9	-0.6	-0.7	-7.9	1.7	37.9	36.2	0.8	77.6	1.7	2.2
1983	-5.6	-12.7	-8.6	11.0	-9.7	-1.4	-1.9	-2.0	35.8	37.8	1.0	77.4	-16.7	-12.5
1984	3.7	9.4	6.4	2.4	9.1	0.7	-4.6	2.2	36.9	34.7	1.3	77.6	-3.1	-2.5
1985	4.2	1.0	2.7	11.1	9.4	-0.9	-3.9	-1.6	35.4	37.0	0.9	79.3	1.2	10.8
1986	6.9	-1.6	4.5	5.9	0.9	5.4	0.5	-4.0	35.4	39.4	0.7	80.9	5.7	9.5
1987	16.2	18.8	15.7	3.3	23.3	4.3	-3.4	-0.8	35.6	36.5	0.4	84.1	9.0	25.8
1988	-3.8	-0.2	-0.6	-3.6	-4.6	-0.8	-3.5	-2.0	39.5	41.5	0.6	80.1	2.2	-2.7
1989	-4.2	-7.9	-4.4	2.9	-10.3	-3.9	-1.3	-4.4	38.5	43.0	1.7	78.7	-9.1	-9.4
1990	0.5	3.0	1.5	0.0	1.0	-3.2	-2.1	-3.3	38.1	41.4	1.8	77.5	-4.9	-4.6
1991	3.0	2.6	3.5	-5.9	5.3	3.5	-4.0	-2.9	39.8	42.7	1.5	81.0	1.4	2.1
1992	-3.2	-10.4	-4.6	-2.0	-6.0	-0.5	-2.4	-2.8	40.8	43.6	3.1	81.8	-0.8	-2.7
1993	-4.6	-9.8	-2.9	6.5	-7.5	-3.7	0.7	-4.5	39.0	43.4	4.4	81.1	-2.6	-0.8
1994	2.9	-0.2	1.8	9.3	3.8	0.2	1.9	-4.7	38.6	43.2	4.8	81.3	-0.3	-0.1
1995	2.2	-1.7	2.2	-2.3	3.6	1.1	0.7	-3.0	39.6	42.5	5.0	82.9	2.8	3.8
1996	5.7	25.0	6.8	9.9	16.5	-3.2	-1.8	-1.6	40.5	42.0	4.4	81.6	4.0	3.9
1997	6.3	9.3	5.8	5.6	8.0	2.1	-1.8	0.0	40.5	40.5	3.9	81.0	3.6	5.9
1998	10.2	34.4	13.8	2.5	23.4	5.1	-6.8	-0.4	40.8	41.2	2.8	82.3	7.6	7.1
1999	7.9	-4.1	4.2	4.0	4.4	-0.6	-6.8	1.1	43.1	41.9	1.9	83.2	3.3	4.7
2000	4.2	11.8	5.9	4.2	8.6	-2.4	-1.7	1.7	43.5	41.8	1.3	83.5	1.6	5.2
2001	-2.8	-4.3	-2.1	7.4	-9.1	0.3	-0.2	-0.7	41.8	42.5	1.4	83.6	2.0	-1.2
2002	-1.5	-14.0	-2.3	3.8	-2.6	0.6	1.5	-2.6	41.6	44.1	2.5	82.8	2.3	0.2
2003	6.1	11.1	5.7	1.6	10.7	-4.1	-4.8	-2.8	42.7	45.6	3.4	82.1	3.4	4.2
2004	7.0	28.1	9.9	8.4	14.5	-1.3	-9.8	0.0	44.1	44.0	3.1	80.7	1.4	5.3
2005	12.9	35.7	15.8	7.2	29.4	1.0	-16.1	4.9	47.0	42.1	2.1	81.9	2.6	8.0
2006	4.4	20.4	9.3	-5.0	10.2	3.6	-25.4	6.3	48.0	41.6	1.3	83.1	2.6	8.1
2007	4.3	-13.7	-1.4	18.1	-1.4	0.1	-15.5	5.5	48.2	42.7	1.0	83.0	3.8	2.8

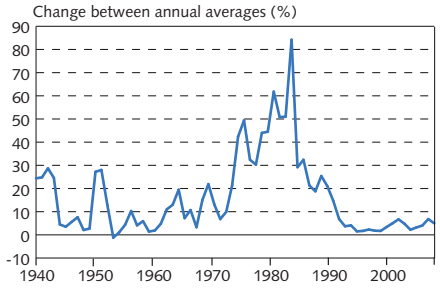
7. Central and local governments and the social security system. 8. Participation rate as per National Economic Institute definition until 1990, but based on Statistics Iceland labour market survey from 1991. 9. Statistics Iceland wage index. Deflated by consumer prices. Since January 2007, the 12-month percentage change in marine product prices denominated in the króna.

Sources: Directorate of Labour, Iceland Stock Exchange (OMX Iceland), Ministry of Finance, Statistics Iceland, Central Bank of Iceland.

Chart 1

Consumer price inflation 1940-2007

Change between annual averages (%)

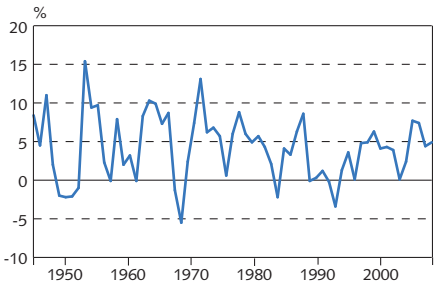


Source: Statistics Iceland.

Chart 2

Economic growth 1945-2007[1]

Change in real GDP between years

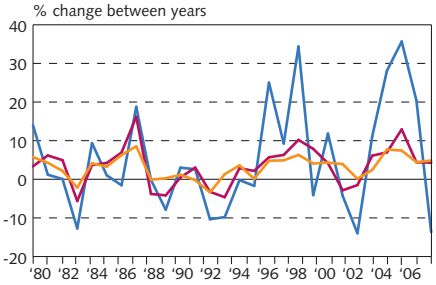


1. Preliminary 2007.
Source: Statistics Iceland.

Chart 3

Growth of GDP, private consumption and gross fixed capital formation 1980-2007[1]

% change between years



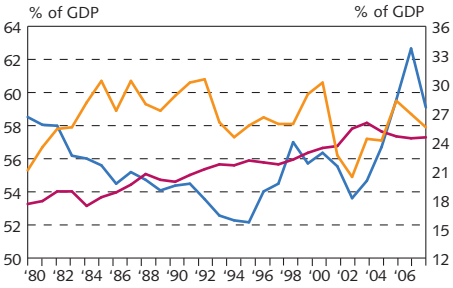
Gross fixed capital formation
Private consumption
GDP

1. Preliminary 2007.
Source: Statistics Iceland.

Chart 4

Private consumption, public consumption and gross fixed capital formation

% of GDP 1980-2007[1]



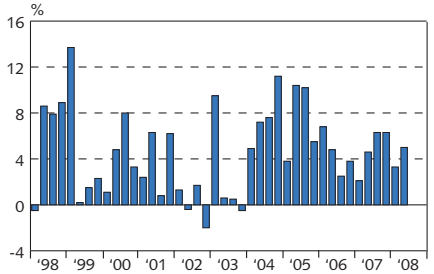
Gross fixed capital formation (right)
Public consumption (right)
Private consumption (left)

1. Preliminary 2007.
Source: Statistics Iceland.

Chart 5

Quarterly economic growth Q1/1998 - Q2/2008[1]

Volume change in GDP on a year earlier (%)

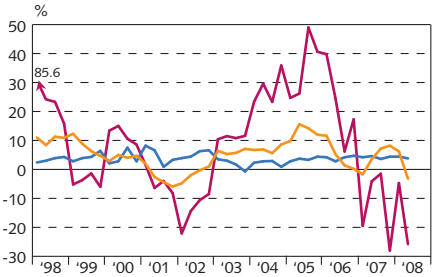


1. Latest data are preliminary.
Source: Statistics Iceland.

Chart 6

Components of economic growth Q1/1998 - Q2/2008[1]

Volume change on a year earlier (%)

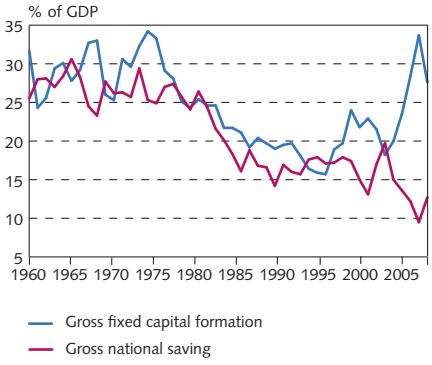


Public consumption
Gross fixed capital formation
Private consumption

1. Latest data are preliminary.
Source: Statistics Iceland.

Chart 7

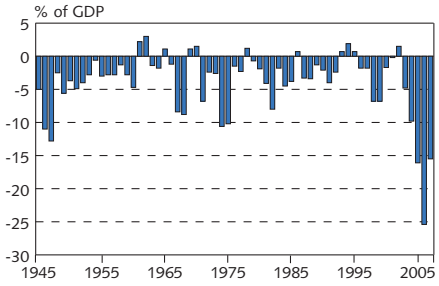
Gross national saving and fixed capital formation 1960-2007[1]



1. Preliminary 2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 8

Current account balance 1945-2007[1]

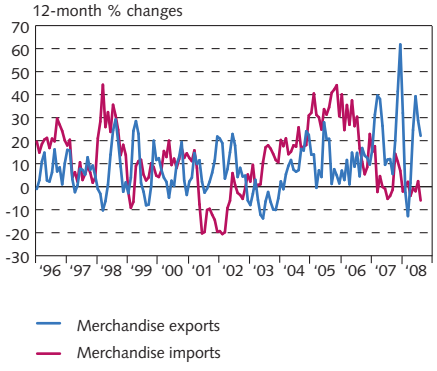


1. Preliminary 2007.
Source: Statistics Iceland.

Chart 9

Merchandise trade January 1996 - August 2008[1]

3-month moving averages at fixed exchange rates

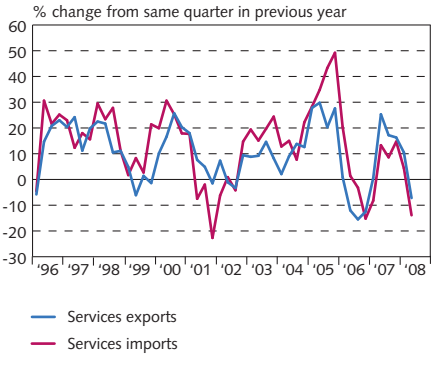


1. Latest data are preliminary.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 10

Exports and imports of services Q1/1996 - Q2/2008[1]

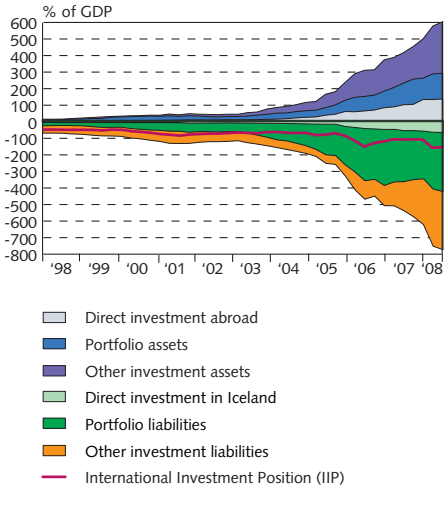
At constant exchange rate



1. Latest data are preliminary.
Source: Central Bank of Iceland.

Chart 11

External debt and assets Q1/1998 - Q2/2008[1]

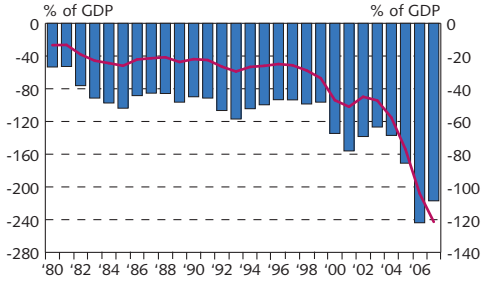


1. Latest data are preliminary.
Source: Central Bank of Iceland.

Chart 12

External debt position 1980-2007[1]

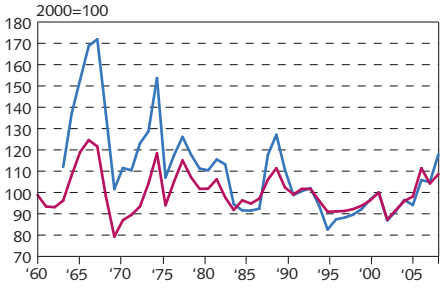
At end of year and latest quarter



1. Latest data are preliminary.
Source: Central Bank of Iceland.

Chart 13

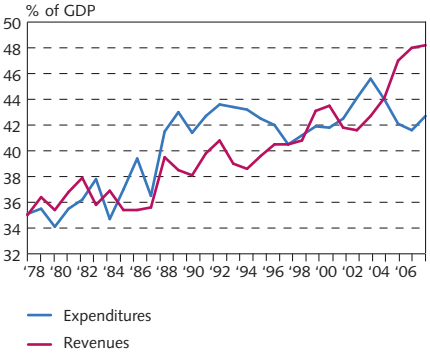
Real effective exchange rate of the Icelandic króna 1960-2007[1]



1. Preliminary 2007.
Source: Central Bank of Iceland.

Chart 14

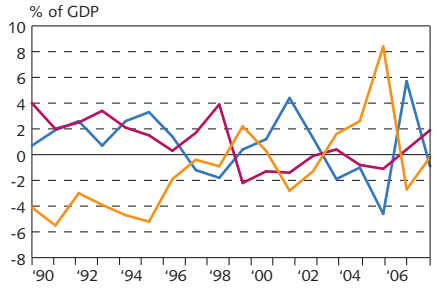
General government revenues and expenditures 1978-2007



Source: Statistics Iceland.

Chart 15

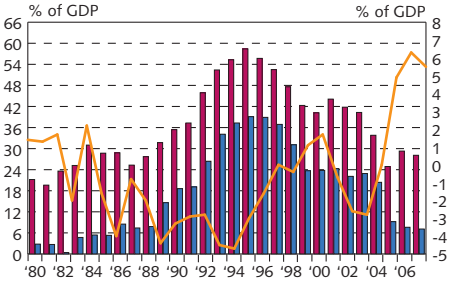
Treasury borrowing 1990-2007



1. Including reduction in pension fund commitments and outstanding long-term interest.
Source: Treasury accounts.

Chart 16

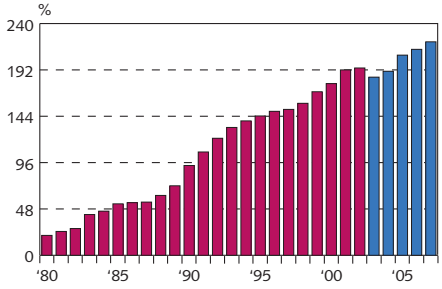
General government balance and debt 1980-2007



Sources: Ministry of Finance, Statistics Iceland, Central Bank projections.

Chart 17

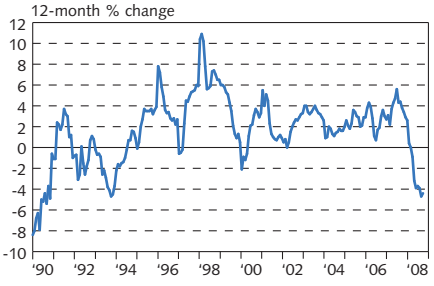
Household debt as percentage of disposable income 1980-2007[1]



1. New classification from 2003 (blue columns). Estimate for 2007.
Source: Central Bank of Iceland.

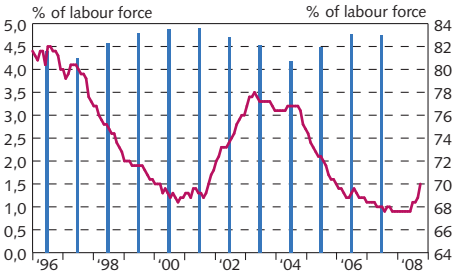
Chart 18

Real wages January 1990 - September 2008



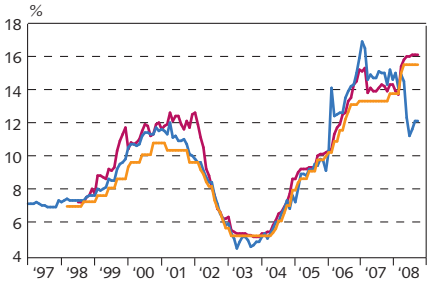
Source: Statistics Iceland.

Chart 19
Unemployment and labour participation[1]
January 1996 - September 2008



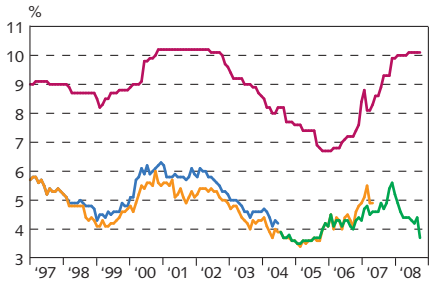
1. Statistics Iceland's labour market survey 1996-2007.
Sources: Directorate of Labour, Statistics Iceland, Central Bank of Iceland.

Chart 20
Short-term interest rates
January 1997 - September 2008
At end of month



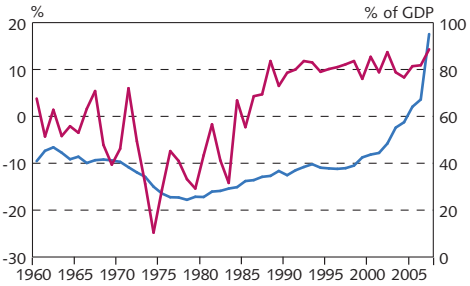
Source: Central Bank of Iceland.

Chart 21
Long-term interest rates
January 1997 - September 2008
At month-end



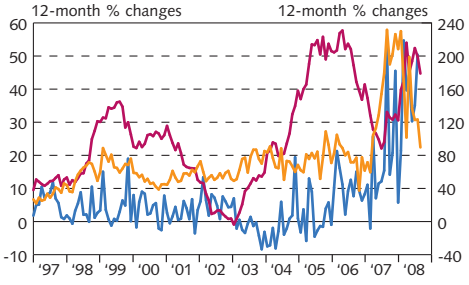
Source: Cental Bank of Iceland.

Chart 22
Real yield and broad money 1960-2007[1]
Real yield on non-indexed bank loans and M3 as percent of GDP



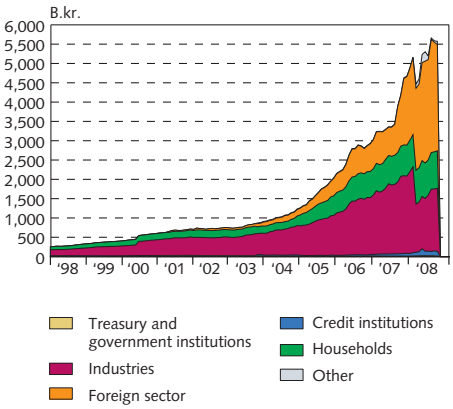
1. Latest data are preliminary.
Source: Central Bank of Iceland.

Chart 23
M3, DMB lending and base money
January 1997 - August 2008[1]



1. Latest figures are preliminary.
Source: Central Bank of Iceland.

Chart 24
Deposit money bank lending by sector
January 1992 - August 2008[1]

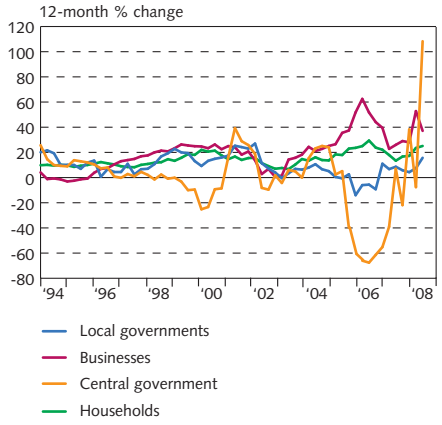


1. Reclassification of lending in September 2003 based on the ÍSAT-95 standard led to a reduction in household debt figures and an increase in business and municipalities' debt figures. Latest figures are preliminary.
Source: Central Bank of Iceland.

Chart 25

Growth of credit system lending Q1/1994 - Q2/2008

Lending by sectors[1]

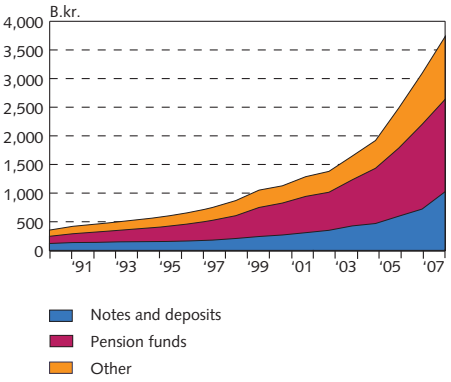


1. Reclassification of lending in September 2003 based on the ÍSAT-95 standard led to a reduction in household debt figures and an increase in business and municipalities' debt figures. Latest figures are preliminary.
Source: Central Bank of Iceland.

Chart 26

Credit system liabilities at end of year 1990-2007[1]

At current prices

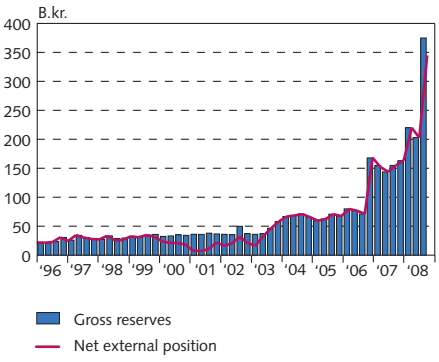


1. Latest figures are preliminary.
Source: Central Bank of Iceland.

Chart 27

Reserve assets and Central Bank net external position, Q1/1996- Q3/2008[1]

Quarterly, at current exchange rates



1. Latest data are preliminary.
Source: Central Bank of Iceland.

Boxes and appendices

2007/1 The impact of foreign labour on inflation
2006/2 Review of private sector wage agreements

Central Bank research and forecasts

2008/1 Forecast errors in Central Bank of Iceland inflation forcasts
2007/3 The policy interest rate according to the Taylor rule and the effects of revised estimates of the output gap
2007/3 Estimating Iceland's equilibrium real exchange rate
2007/2 Changes in the baseline forecast from *Monetary Bulletin* 2007/1
2007/1 Calculation of confidence intervals
2006/3 Forecast errors in Central Bank of Iceland inflation forecasts
2006/3 Inflation developments in the face of a large króna depreciation
2006/2 New presentation of the macroeconomic and inflation forecast

Periodical boxes and appendices

2008/2 Financial market analysts' assessments of the economic outlook
2008/2 Changes in the macroeconomic forecast since *Monetary Bulletin* 2008/1
2008/2 Changes in the inflation forecast since *Monetary Bulletin* 2008/1
2008/2 Alternative scenarios
2008/2 Baseline macroeconomic and inflation forecast 2008/2
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2008/1 Changes in the macroeconomic forecast since *Monetary Bulletin* 2007/3
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2007/1 Macroeconomic and inflation forecast 2007/1