A Quarterly Publication of the Central Bank of Iceland

MONETARY BULLETIN

2005 • 4

Contents

Published by:
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Vol. 7 no. 4 December 2005

Printing: Gutenberg hf.
Monetary Bulletin is also published on the Central Bank of Iceland website.
ISSN 1607-6680

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.

Introduction

Results of tighter policy stance begin to appear, which must be followed through

The 0.75 percentage-point increase in the Central Bank's policy interest rate in September marked a turning point in the transmission of monetary policy across the yield curve. The nominal change delivered an equivalent change in real terms and – for the first time since the Central Bank began raising the policy rate in May 2004 – indexed bond yields were affected significantly, which has already led to higher mortgage rates by the banks and Housing Financing Fund. Given that the bulk of household debt is price-indexed, the transmission of the policy rate hike to indexed lending is essential. Last year's fall in indexed rates and subsequent surge in credit supply unleashed soaring credit demand for the purpose of refinancing housing purchases and private consumption. The resulting house price inflation further fuelled private consumption and residential investment. If mortgage rates continue to rise, house price inflation will slow down further and, eventually, so will private consumption growth.

Should domestic demand growth slow down sufficiently, it will facilitate the attainment of the target of inflation close to 2½% over the medium term, as obliged by law and under the joint declaration of the Government of Iceland and Central Bank of Iceland from 2001. The response to the September policy rate hike is promising, but to claim victory in the battle against inflation is premature. Strong imbalances are still present in the economy. The macroeconomic forecast presented in this edition of *Monetary Bulletin* indicates sizeable capacity pressures over the next two years. Hence, other things being equal, inflation will remain some way above the target in the coming months, notwithstanding the effect of the strong króna, although the outlook is somewhat better than in September. Inflation scenarios based on the assumption of an unchanged exchange rate must be viewed with caution, however, because it is unlikely that the króna will maintain its current strength across the forecast horizon.

The outlook is for an even wider current account deficit this year than was forecast in September. According to the updated macroeconomic forecast it will be equivalent to 15½% of GDP. A current account deficit on such a scale is rarely sustainable for long. International experience shows that such an imbalance is soon followed by a currency depreciation or a contraction in domestic demand, or both, which will force a readjustment. The more that the deficit is explained by investment in export sectors, the less adjustment is needed. However, less than half of the current account deficit this year and in 2006 can be attributed to the direct and indirect impact of investment in the aluminium and power sectors. Thus there will be a strong need for adjustment in the coming years, which will probably

take the form of pressure on the króna. The high real exchange rate increases the likelihood that a substantial part of the adjustment will take the form of a depreciation. Currently, the real exchange rate is at its highest level since 1988, and in recent decades such episodes have only proved short-lived.

Monetary policy over the medium term will need to ensure that the exchange rate adjustment which appears inevitable in the long run does not result in a higher rate of inflation than is compatible with the target. A tight monetary stance will be required to do so, for as long as capacity and labour market pressures pose inflationary threats. Furthermore, a sufficiently wide interest-rate differential with abroad must be maintained to contribute to a smooth exchange rate adjustment.

Over the next few months, the twelve-month rise in house prices will probably slow down quite sharply. If the króna remains relatively strong and stable, goods prices are also quite likely to fall. Thus the outlook is for a slowdown in the inflation rate in the coming months. If the housing market cools more quickly than the Central Bank forecasts, house price inflation is likely to slow down even more sharply than is currently expected. Foreseeable exchange rate developments, an ongoing surge in private consumption and greater-than-expected rises in unit labour costs, however, will outweigh these factors in the long run.

Inflation scenarios based on different assumptions for interest rate and exchange developments provide an indication of what may lie ahead. Taken together, they strongly suggest that the inflation target will only be attained if a tight monetary stance is maintained for an extended period.

The Central Bank has repeatedly cautioned against ideas that the inevitable difficulties accompanying a tight monetary policy can be avoided by abandoning the inflation target temporarily, or "letting inflation through", as it has sometimes been called. This is an unrealistic option. Such a volte-face in Central Bank policy would immediately push up inflation expectations, fuel even higher wage increases and catalyse a depreciation of the króna and more inflation. Ultimately the policy rate would need to be raised by even more to bring inflation back down. Businesses and households would suffer more rather than less from such a policy. Nor should it be forgotten that a large share of household and business debt is either price-indexed or exchange rate-linked. Due to this distinctive feature of the Icelandic financial system, even the short-term benefits to households and business from a more accommodative monetary stance could prove to be minimal or even negative.

However, a tight fiscal policy can contribute to a softer landing. Buoyant demand and soaring business profits have generated revenues for the Treasury this year far in excess of forecasts. A similar position could be on the cards in 2006. It is vital for both central and local government authorities to respond to this boost in revenues not by easing their restraint on the expenditure side, but rather by

planning to achieve increased surpluses, which appears to be the aim behind the budget currently before Parliament.

Financial companies can also contribute through cautious lending policies. Some have already lowered the loan-to-value ratios of their mortgage lending to 80%, which is a prudent decision both from an economic policy viewpoint and in light of their own interests.

Inflation has slowed down in recent months and the impact of policy rate rises is finally being transmitted to indexed bond yields, and thereby to some extent to mortgage interest rates. At the same time, the impact of higher interest rates in the US and Europe is increasingly being felt. Nonetheless, the inflation outlook is still unacceptable. The Board of Governors has therefore decided to raise the Central Bank's policy interest rate by 0.25 percentage points. Two months ago the Central Bank raised its policy rate by 0.75 percentage points. Next month the Board of Governors will reassess the situation and announce its decision on interest rates – irrespective of whether they will be changed or left unchanged – together with the rationale behind the decision, on the first formal interest rate decision date of the year, January 26, 2006. At the present stage it is difficult to determine what policy rate level is necessary in order to attain the inflation target.

Economic and monetary developments and prospects[1]

Slight improvement in inflation outlook due to the appreciation of the króna and higher interest rates, but major imbalances are still present

Major imbalances are still present in the Icelandic economy. These appear in the widening current account deficit, labour market pressures, an ongoing surge in national expenditure and lending, and the high real exchange rate and asset prices. However, the first signs that the tight monetary stance is beginning to produce results have emerged. The rise in the policy interest rate is being transmitted throughout the yield curve and house price inflation is slowing down. The strong króna has constrained inflation over the past few months, although the appreciation has not been transmitted fully into the domestic price level. GDP growth for 2005-2007 has been revised downwards in the current macroeconomic forecast. Thus the output gap will be marginally smaller than forecast in September and the inflation path lower, assuming that the policy rate and exchange rate remain unchanged. Nonetheless, the inflation outlook two years ahead is still above target, especially bearing in mind that the króna is likely to depreciate across the forecast horizon.

I Overview of macroeconomic and inflation forecast

Assumptions of the current forecast

The forecast presented here is an update to the macroeconomic and inflation forecast that the Central Bank of Iceland published in September. In the update, only the most important assumptions have been revised in light of unfolding events and most recent data, but in other respects it is based on the same assumptions as the September forecast. The forecast horizon for inflation is until Q4/2007.

It should be underlined that Central Bank forecasts are really an analytical tool rather than a simple prediction. Three inflation scenarios are presented below. The first, the baseline scenario, is as usual based on the technical assumption of an unchanged policy interest rate (currently 10.25%) over the forecast horizon and an unchanged effective exchange rate from the day of the forecast, November 9, when the index was close to 102. The effective exchange rate of the króna in the current forecast is therefore roughly 6% higher than in the September forecast. Two alternative scenarios are provided, based on variable interest rate and exchange rate paths. These alternative scenarios deserve particular attention in the current climate, given that the assumption of an unchanged exchange rate seems unlikely to hold.

GDP growth forecast revised downwards

Economic indicators suggest that private consumption will probably grow faster in 2005 than was forecast in September. On the other hand, some planned investments in the aluminium and hydro sectors

1. This article uses data available on November 22, 2005, but the forecast is based on data until November 9.

Table I-1 Updated Central Bank macroeconomic forecast

	Policy rate and exchange rate assumptions[1]							
	Current forecast				*Change from previous forecast (percentage points)*[2]			
	2004	*2005*	*2006*	*2007*	*2004*	*2005*	*2006*	*2007*
Central Bank policy interest rate (%)	6.14	9.36	10.25	10.25	-	0.20	0.75	0.75
Foreign exchange index (Dec. 31, 1991 = 100)[3]	121.0	108.2	102.0	102.0	-	-1.5	-5.6	-5.6

	Current macroeconomic forecast							
	Volume change on previous year (%)				*Change from previous forecast (percentage points)*[2]			
	Current forecast							
GDP and its main components	*2004*	*2005*	*2006*	*2007*	*2004*	*2005*	*2006*	*2007*
Private consumption	6.9	11.1	7.8	4.1	-	0.8	-0.4	-0.2
Public consumption	2.8	3.0	2.9	2.6	-	-0.5	-0.1	-0.1
Gross fixed capital formation	21.0	31.0	-2.9	-19.8	-	-0.1	1.1	-3.8
Business sector investment	23.3	55.8	-4.2	-32.2	-	1.1	2.5	-5.3
Excl. power-intensive projects, ships and aircraft	17.3	6.3	-8.8	0.1	-	0.9	-3.4	-5.3
Residential construction	5.7	11.8	9.5	0.6	-	-0.2	-0.5	0.4
Public works and buildings	26.9	-11.2	-14.0	28.4	-	-3.9	-4.9	5.5
National expenditure	8.4	13.3	4.1	-2.1	-	0.2	0.1	-1.1
Exports of goods and services	8.3	3.6	5.8	15.4	-	-0.8	-0.3	0.9
Imports of goods and services	14.2	24.5	0.5	-1.4	-	1.5	0.4	-0.4
Gross domestic product	6.2	4.7	6.6	4.1	-	-0.8	-0.1	-0.7
Other key aggregates								
Gross domestic product at current prices (b.kr.)	885	989	1,110	1,197	-	-9.0	-5.0	-15.0
Current account balance (% of gross domestic product)	-8.4	-15.6	-11.9	-6.8	-	-1.4	-0.6	-0.7
Output gap (% of production capacity in the economy)	2.1	3.3	4.5	1.9	0.6	-0.3	-0.3	-0.8
Private sector wages (change between annual averages in %)	4.7	6.6	7.2	5.5	-	0.5	0.8	-
Labour productivity (change between annual averages in %)	4.1	1.0	1.4	1.1	0.1	-1.0	-0.5	-0.7
Unemployment (% of labour force)	3.1	2.0	1.9	2.4	-	-	-	-

1. Annual averages, assuming unchanged interest rates and exchange rate from the day of forecast. 2. Change since *Monetary Bulletin* 2005/3. 3. Percentage change in index from previous forecast.

have been deferred from this year to 2006 and a sharper contraction is now forecast in public sector investment. Thus the outlook for domestic demand growth this year has not changed much since September. Next year's outlook for domestic demand growth is also virtually unchanged, because a slight downward revision in forecast growth of private consumption and public sector investment is offset by the rescheduled aluminium and hydro sector investments and more investment in other manufacturing segments.

Although the forecast growth of national expenditure in 2005 and 2006 is broadly in tune with the September forecast, the GDP growth forecast for both years has been revised downwards. This is caused by slower export growth and faster import growth, both partly reflecting the rise in the real exchange rate. In addition, the Central Bank's policy rate has been raised since September. This dampens domestic demand growth and raises the real exchange rate, which channels demand out of the economy.

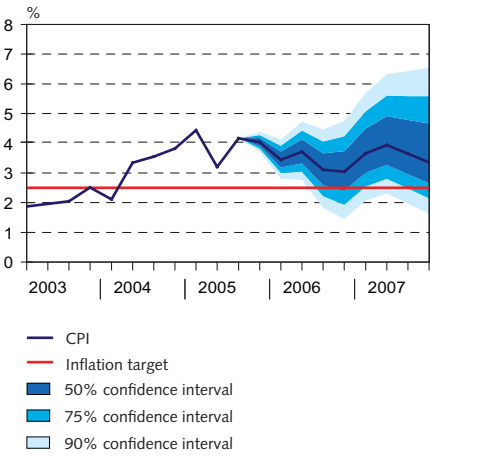
The tighter monetary stance also results in a further slowdown in the growth of domestic demand and GDP in 2007, compared with the September forecast. Consequently, production will not exceed capacity across the forecast horizon by as much as was expected in September.

The inflation outlook has improved, but inflation is still likely to be above target across the forecast horizon

Easing demand pressure and the appreciation of the króna have led to an improvement since September in the inflation outlook two years ahead. On the other hand, a greater increase in unit labour costs is now expected. This is the result both of higher wage settlements following a review in November and a downward revision to estimated growth of labour productivity.

Assuming an unchanged policy rate and exchange rate, the outlook is that inflation will still remain above the 2.5% target across the forecast horizon. Inflation is projected to be just over 3% one year ahead, compared with 3.7% to the same quarter in the September forecast. Two years ahead, inflation is projected to be just over 3½%, compared with 3.8% to the same quarter in the September forecast. Accordingly, the inflation target will not be attained until 2008, if the monetary stance remains unchanged.

Chart I-1
Central Bank inflation forecast – baseline scenario
Forecasting period: Q4/2005-Q4/2007



Source: Central Bank of Iceland.

Table I-2 Updated Central Bank inflation forecast – baseline scenario
Change in the CPI between periods

Measured inflation (%)	*Change on previous quarter*	*Annualised quarterly change*	*Change on same quarter of previous year*
2004:1	0.3	1.3	2.1
2004:2	1.7	7.0	3.3
2004:3	0.5	1.9	3.6
2004:4	1.3	5.2	3.8
2005:1	0.9	3.7	4.4
2005:2	0.5	2.0	3.2
2005:3	1.4	5.7	4.2
Inflation forecast (%)			
2005:4	1.1	4.7	4.0
2006:1	0.3	1.4	3.4
2006:2	0.8	3.1	3.7
2006:3	0.8	3.3	3.1
2006:4	1.1	4.4	3.0
2007:1	0.9	3.8	3.7
2007:2	1.0	4.2	3.9
2007:3	0.5	2.1	3.6
2007:4	0.8	3.3	3.4

Measured inflation (%)	*Change year-on-year*	*Change within year*
2003	2.1	2.4
2004	3.2	4.0
Inflation forecast (%)		
2005	4.0	3.8
2006	3.3	3.4
2007	3.6	3.2

The baseline scenario is based on the assumption that the policy rate and exchange rate remain unchanged from the day of the forecast. Given the inflation outlook implied by the baseline scenario, the assumption of an unchanged policy rate must be considered highly unrealistic. In light of the historically high real exchange rate and the

wide current account deficit, the same applies to the assumption of an unchanged exchange rate.

Many of the assumptions behind the baseline scenario are uncertain, and some more than usual. Hence, considerable emphasis should be given to assessing the probability that the true inflation path will diverge from the baseline scenario. Broadly the risks to the forecast are the same as in September. On the assumption of an unchanged policy rate, the inflation risk profile is tilted to the upside. The risk is particularly pronounced further along the forecast horizon. Alternative scenarios based on financial market analysts' expectations about the policy rate and exchange rate paths, calculated using uncovered interest rate parities, reinforce this assessment.[2] If the policy rate is kept unchanged but the exchange rate follows the uncovered interest rate parity path, inflation will be around 4½%, which is 1 percentage point higher than in the baseline scenario. The higher policy rate path that the analysts forecast would bring down the inflation rate, but not sufficiently to counteract the effect of the depreciation. The alternative scenarios based on variable interest rate and exchange rate paths therefore both produce a higher rate of inflation than in the baseline scenario.

2. The expected policy rate path is based on a survey among financial market analysts, as discussed in more detail in Section III and Box VIII-1. The spread between this path and foreign forward interest rates can be used to produce an expected exchange-rate path based on uncovered interest rate parity. These paths are explained in more detail in Section VIII.

II External conditions

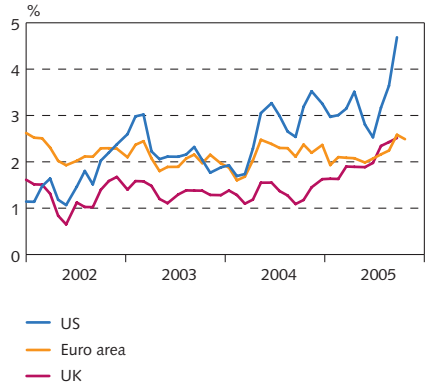
Growth prospects among trading partner countries broadly the same as forecast in September, but a poorer inflation outlook

Global economic developments in recent months point to fairly favourable external conditions for the Icelandic economy in the medium term. Higher fuel prices have not halted a broad global recovery, which has gained pace in regions that have been lagging behind, e.g. continental Europe. World trade has been growing faster than it had for some while, at almost 10% p.a. Both these factors bode well for Iceland's export sectors. This positive development reinforces, but does not fundamentally alter, the scenario on which the Central Bank's September forecast was based. Thus the previous assumptions for growth among trading partner countries remain broadly unchanged.

Inflation has been on the increase in Europe and North America, although the main driver is still higher energy prices. If energy prices do not rise even further, inflation should eventually wane again. However, if oil prices continue to climb they could increasingly affect inflation expectations and wage developments. International forecasts for inflation among Iceland's main trading partner countries next year (e.g. Consensus Forecasts) have been revised some way upwards towards the level assumed in the Central Bank's September forecast. Thus it was not considered necessary to revise the Bank's assessment of global inflation developments when the current forecast was prepared.

Climbing inflation coupled with waning excess capacity will probably lead Iceland's main trading partner countries to keep on tightening their monetary policies, at least towards a neutral stance. This is discussed in more detail in Section III on Financial conditions below. Excess liquidity and broad money growth are also a growing cause for concern, in Europe among other places, because they increase the probability of interest rate hikes. This is already reflected in the path for long-term interest rates, which have headed upwards since September.

Chart II-1
Inflation in the US, UK and euro area
January 2002 - October 2005

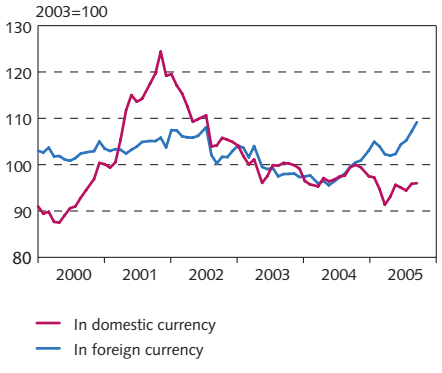


Source: EcoWin.

Substantial rise in marine prices in foreign currency since September

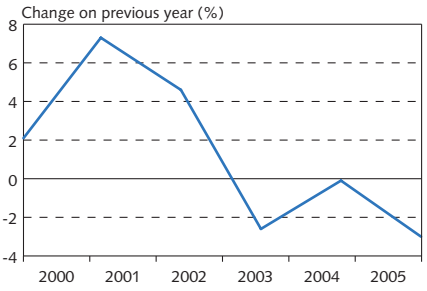
The global economic recovery, higher world market prices of food and robust demand in major market regions for fish products from Iceland have caused a rapid increase in prices of marine products in foreign markets over recent months. In September, prices of marine exports were 10% higher year-on-year in foreign currency terms and more than 2% higher than before the Central Bank's last forecast was made. Over the past twelve months, prices of frozen-at-sea fish have soared by 23% and fresh fish by 15%. These changes are reflected in an upward revision by one percentage point of the forecast for marine export prices in foreign currency since September. Higher export prices have softened the impact that the appreciation of the króna in recent months has had on fisheries companies. At the same time, they may also have contributed to the appreciation, or the stronger króna may have forced businesses to raise their prices in foreign markets, conceivably at the expense of market share.

Chart II-2
Estimated marine product prices
January 2000 - September 2005



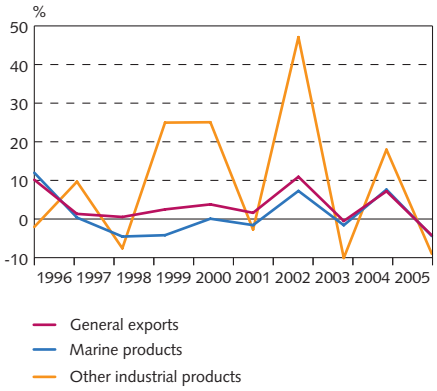
Sources: Statistics Iceland, Central Bank of Iceland.

Chart II-3
Value of fish catch at constant prices
January - September 2000-2005,
changes between years in %



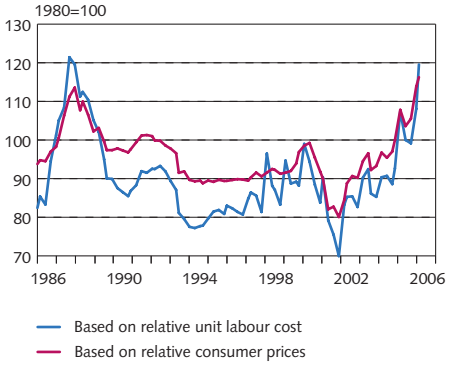
Source: Statistics Iceland.

Chart II-4
Volume of merchandise exports
January - September 1996-2005



Source: Statistics Iceland.

Chart II-5
Real effective exchange rate of the króna
Q1/1986 - Q1/2006



Source: Central Bank of Iceland.

Fish catch value at constant prices will probably decline this year

External conditions have not developed as favourably on the supply side of the economy. Catches of several major species, e.g. cod and oceanic redfish, have decreased year-on-year. Despite increased harvests of saithe, haddock and deep-sea redfish, catch value has slipped this year, measured at constant prices. Unless a sharp turnabout takes place in the closing months of the year, some contraction appears to be on the cards for 2005, which could lead to a drop in marine export volume. Increased exports of unprocessed wetfish also imply less domestic value added.

Marked decline in manufactured exports apart from aluminium so far this year

Exports of aluminium are expected to remain virtually unchanged year-on-year in 2005, as forecast. Exports by the manufacturing sector have recorded hefty growth in most years recently, but other manufactured goods than aluminium are heading for a sizeable decline this year. The decrease amounted to 9% over the first nine months, somewhat more than was measured in mid-year. There are various reasons for the contraction. In some cases large-scale deliveries have been delayed, but much of the explanation probably lies in a deterioration of the competitive position of domestic producers caused by the stronger real exchange rate.

Real exchange rate at its strongest for decades

Firm indications have emerged that the strong real exchange rate is beginning to have a substantial effect on various export sectors. Certain fisheries segments have actually benefited from rising product prices, but one sign of the impact of the strong króna is an increase in the share of unprocessed fish. The contraction in manufactured exports is probably largely the result of the strong real exchange rate, as mentioned above. Its effect may be more pronounced than in the past, because of the growing ability of some manufacturers which operate facilities in other parts of the world to transfer some of their production abroad if necessary.

In terms of relative consumer prices, the real exchange rate is currently stronger than in 1988 and at its highest level since the 1970s. Measured against relative unit labour costs it is not quite as strong in historical terms and marginally lower than in 1988, but uncertain productivity estimates introduce a considerable margin of error into these figures. Be that as it may, it seems clear that higher productivity, for example in fisheries, enables the sector to weather a stronger real exchange rate than in the past.

The strong króna may have a considerable impact on tourism in the long run

The tourism sector has felt unexpectedly little effect so far from the strong real exchange rate. First-half tourist traffic to Iceland was up year-on-year in 2005. Income from tourists remained unchanged in króna terms, which implies sizeable growth in foreign currency terms, and overnight stays increased by 4% over the first nine months of

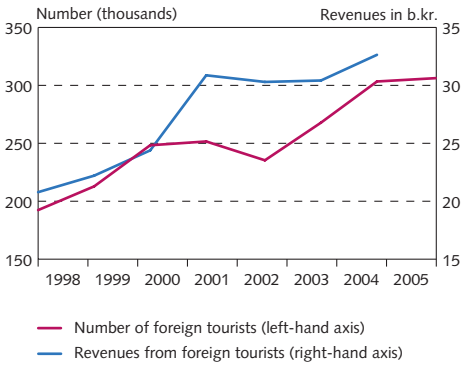
the year. Supply of low-fare flights to Iceland has been stepped up in recent years, presumably offsetting the effect of the exchange rate on tourist traffic, and domestic tourism service providers are likely to have absorbed exchange rate losses or hedged against them. However, if the current strong exchange rate persists, its impact will probably increase and could be quite pronounced next year.

September forecast for export growth revised downwards, but the outlook two years ahead is broadly unchanged

Given the contraction in merchandise exports over the first nine months, exports are likely to grow by rather less in 2005 than was forecast in September. Export growth has been revised downwards in the current forecast by almost 1 percentage point to 3½%. Growth is accounted for entirely by services, which were up by 6½% in real terms during the first half of this year. Services exports surged in Q2 and the September forecast for ongoing rapid growth remains unchanged. However, there is a high degree of uncertainty in this upbeat growth outlook.

Forecast export growth for 2006 is slightly down from September due to the stronger real exchange rate. Also, slightly less growth in aluminium production is expected this year, but more in 2007. The forecast for exports in 2006 has therefore been revised marginally downwards, to just under 6%. Export growth in 2007, on the other hand, has been revised upwards to 15½%. Projected aluminium production capacity in 2007 has also been upped on top of the extra capacity delayed from 2006, which outweighs the impact of the real exchange rate on other exports.

Chart II-6
Number of foreign tourists and revenues
January - September 1998-2005



Sources: Icelandic Tourist Board, Statistics Iceland, Central Bank of Iceland.

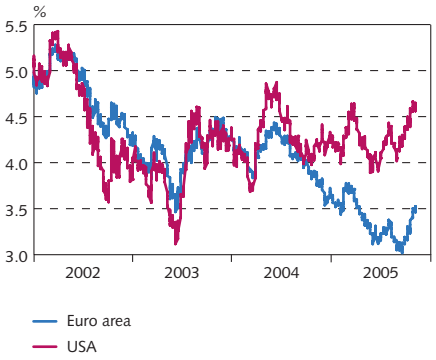
Table II-1 Main assumptions for developments in external conditions

	Current forecast (%)[1]			*Change from previous forecast (percentage points)*[2]		
	2005	*2006*	*2007*	*2005*	*2006*	*2007*
Exports of goods and services	3.6	5.8	15.4	-0.8	-0.4	0.9
Marine production for export	-2.0	3.0	2.0	-2.0	-	-
Prices of marine products in foreign currency	9.0	6.0	3.0	1.0	1.0	-
Prices of exported goods and services in foreign currency	7.1	3.3	0.2	-0.8	-1.2	-0.1
General import prices in foreign currency	2.5	2.3	2.0	-	-	-
Terms of trade for goods and services	0.3	3.9	0.7	-1.0	2.3	0.2
Foreign short-term interest rates	2.6	3.1	3.5	0.1	0.3	0.6

1. Percentage change year-on-year, except for interest rates. 2. Change since *Monetary Bulletin* 2005/3.
Source: Central Bank of Iceland.

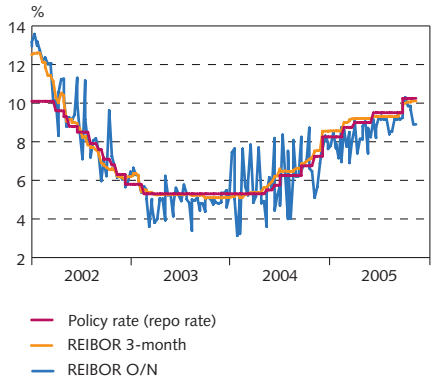
III Financial conditions

Chart III-1
Yield on 10-year government bonds
Daily data January 1, 2002 - November 11, 2005



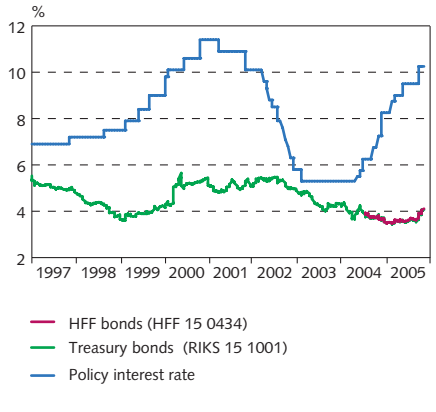
Source: EcoWin.

Chart III-2
Central Bank policy
interest rate and interbank interest rate
Weekly data January 4, 2002 - November 11, 2005



Source: Central Bank of Iceland.

Chart III-3
Central Bank policy interest rate
and yields on indexed long-term bonds
Weekly data January 8, 1997 - November 8, 2005



Source: Central Bank of Iceland.

Financial conditions are gradually tightening

After the Central Bank raised its policy interest rate by 0.75 percentage points in September, financial conditions have tightened considerably and a further tightening is expected. Monetary policy has been transmitted throughout the yield curve and also reached yields on indexed long-term bonds. The concurrent appreciation of the króna has made loans denominated in foreign currencies less attractive to borrowers if they expect that the real exchange rate will eventually return to a more sustainable long-term level. Offsetting this, increased foreign issues of bonds denominated in Icelandic currency have boosted demand for domestic bonds and driven down interest rates on instruments with a maturity of between one and five years. The most important change in financial conditions since September is undoubtedly the rise in housing mortgage interest rates. Yields on Housing Financing Fund (HFF) bonds have jumped since the policy rate hike at the end of September. However, the full impact will only be felt after a general rise in household mortgage interest rates, a process which has only just begun.

Long-term interest rates abroad have begun to rise

Interest rates are still very low in the main countries where Icelandic financial institutions and corporations procure their capital. Since September, however, interest rates on long-term bonds have risen quite sharply in both Europe and North America. In the US, the Federal Reserve has continued its process of measured interest rate increases. After the hike at the beginning of November the federal funds rate is 4%, up from a low of 1% over the period June 2003 to June 2004. Unfolding economic developments (see section II) have also increased the probability that the European Central Bank will raise its minimum bid rate, which is still only 2%. If this development continues, as appears likely, it will have a substantial effect on the transmission of monetary policy in Iceland; until recently, low foreign rates have delayed the transmission of monetary tightening across the yield curve.

The Central Bank's latest rate hike appears to have influenced expectations about the medium-term development of the policy rate

The zero-coupon curve on nominal instruments has risen in line with the latest Central Bank policy rate increase. The hike is also reflected in a higher implied forward interest rate path, which has served as a measure of market expectations about medium-term policy rate developments. The latest hike appears to have exceeded market expectations, judging from forward rates.

Although the yield curve has edged upwards following the last hike, its shape has hardly changed. Based on the implied forward curve, the Central Bank's policy rate is still expected to peak shortly at 10.75%, and then soon head down to 7% at the end of 2007, which is one percentage point above what the curve implied in September.

The immediate conclusion would seem to be that the Central Bank's last rate hike had only a modest impact on market expectations about the development of the policy rate, apart from nudging the entire curve upwards.

However, the implied forward rate curve needs to be interpreted with caution at present, because recent issues of króna-denominated bonds by non-residents – or rather the demand for domestic bonds that they generate – have shifted yields on shorter nominal Treasury instruments downwards but spurred demand for deposits in the interbank market at same time; as counterparties to the bond issuers, Icelandic banks use both nominal Treasury notes and the interbank market to hedge their positions. This increased demand has driven down interbank interest rates, especially at the longer end of the spectrum, i.e. deposits with a term of roughly one year.[3] As a result, the implied forward rate curve probably does not adequately reflect market expectations of the medium-term development of the policy rate.

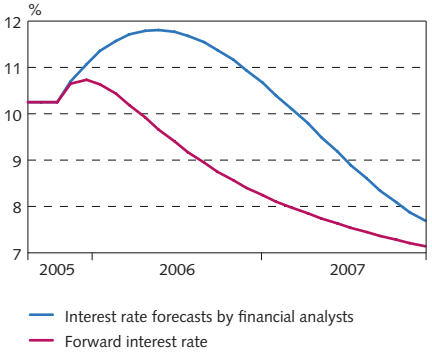
Market analysts' expectations of policy rate developments over the next two years appear to support this conclusion (see Box VIII-1). On average, they expect the policy rate to peak at just below 12% in the middle of next year, which is considerably higher than can be read from implied forward rates, and they also expect a significantly slower decrease, to just over 11% one year ahead and just under 8% two years ahead.[4] These forecasts are well above those made by the same analysts in the survey published in *Monetary Bulletin* 2005/3 in September, which were just over 9% one year ahead and 7.5% two years ahead. Contrary to the picture given by implied forward rates, the Central Bank's policy rate hike in September and its policy message in *Monetary Bulletin* then appear to have had a considerable effect on analysts' expectations about the development of interest rates over a two-year horizon.

The September rate hike was transmitted in full in real terms ...

Since the Central Bank began raising its policy rate in May 2004, the effectiveness of the interest rate increases has been partly offset by rising inflation expectations. For most of the time since the second half of 2004, inflation expectations have been close to 4%. However, they did not increase after the inflation spike in the autumn, except among households, whose average forecast twelve months ahead was higher in late October/early November than in July.[5] The 0.75 percentage-point rise in September was therefore transmitted in full in real terms, which is a precondition for a tighter monetary stance to influence interest rates on indexed bonds.

Chart III-4

Central Bank policy interest rate projected from forward interest rate and forecasts by financial analysts September 2005 - December 2007

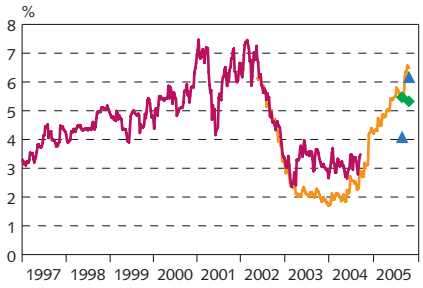


Source: Central Bank of Iceland.

Chart III-5

Central Bank policy interest rate in real terms

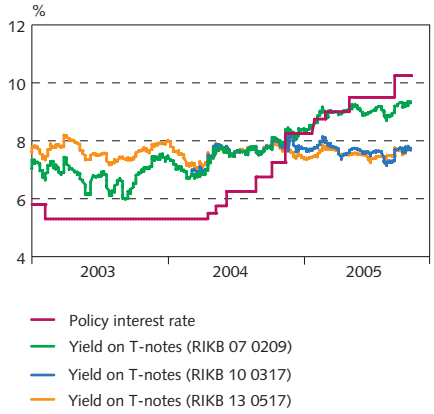
Weekly data January 8, 1997 - November 8, 2005



Household expectations twelve months ahead were surveyed at the end of August/beginning of September and at the end of October/beginning of November. The September value shows analysts' expectations for twelve-month inflation to end-2006 and the later value is for twelve months ahead.
Source: Central Bank of Iceland.

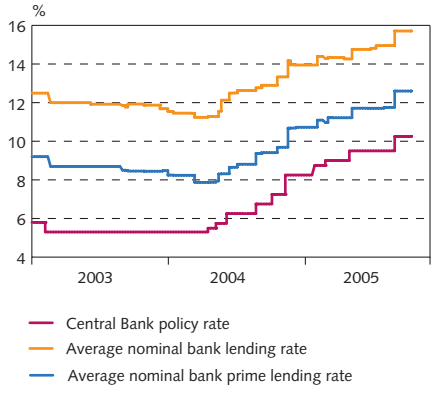
3. A detailed discussion of issues of króna-denominated Eurobonds is found in the article by Thorvardur Tjörvi Ólafsson in this edition of *Monetary Bulletin*, pp. 55-83.
4. As noted in Box VIII-1, one analyst presents a sharply divergent assessment of how the policy interest rate will develop two years ahead. He predicts that the policy rates will soon peak at a lower level than other respondents to the survey have forecast, followed by a swift decrease to a lower level at end-2007 than is indicated by the implied forward rate.
5. Households' inflation expectations are closely linked to their perception of past inflation and should therefore begin to fall back over the next few months if inflation continues to wane.

Chart III-6
The Central Bank
policy rate and yield on Treasury notes
Daily data January 3, 2002 - November 11, 2005



Source: Central Bank of Iceland.

Chart III-7
The policy interest rate and
non-indexed bank lending rates
Weekly data January 4, 2002 - November 11, 2005



Source: Central Bank of Iceland.

... but large-scale foreign issues of króna-denominated bonds have suppressed interest rates on nominal bonds ...

Although the policy rate hike in September exceeded broad market expectations and the sharp tone of *Monetary Bulletin* was interpreted as a clear message that further rises could be expected, interest rates on two- to eight-year nominal bonds were left relatively unaffected. International issues of króna bonds were probably a contributing factor. Eurobonds of market value of roughly 115 b.kr. have been issued and the resulting demand for domestic bonds has driven interest rates in Iceland down, as pointed out above. International bond issues are likely to continue for as long as domestic credit demand remains robust – which is reflected in a wide interest-rate differential with abroad – and there is an ample supply of domestic bonds for hedging.

... and contributed to the appreciation of the króna

The demand for domestic bonds stirred by foreign issues has not only suppressed interest rates, but also contributed to the appreciation of the króna, although just how much of the appreciation can be attributed to the bond issues is difficult to evaluate, because the policy rate hike in September had the same effect. At the time of writing, the króna has appreciated by almost 6% since the policy rate was raised at the end of September. In real terms the króna is currently roughly one-fifth stronger than on average over the past two decades. It seems likely that the real exchange rate will revert to its long-term mean in the coming years. Conceivably, the exchange rate could overshoot. In that case, real returns in foreign buyers' currency will almost certainly turn sharply negative. The fact that Icelandic bonds are in demand at interest rates which are relatively low considering the prevailing exchange rate and economic climate in Iceland may indicate that foreign buyers are not particularly well informed about the Icelandic economy and underestimate the foreign exchange risk involved. A re-evaluation of this risk could cause a sharp rise in required returns as soon as the króna begins to depreciate.

Nominal lending rates rose in pace with the policy rate and indexed lending rates are starting to rise

As is often the case, interest rates on nominal lending by credit institutions closely tracked the change in the Central Bank's policy rate in September. Average prime rates offered by deposit money banks (DMBs) are currently roughly 12½%. However, the spread between the policy rate and prime rates is somewhat narrower than in 2003. A broad-based rise in indexed lending rates is likely, on the back of rising yields on indexed bonds and recent rises in mortgage lending rates announced by the HFF and other credit institutions.

Credit growth has still not slowed down, but twelve-month growth in money has dropped due to the base effect

Lending by the credit system is still surging, especially among DMBs. In September, DMB lending adjusted for changes in the exchange rate and CPI was up by almost 60% year-on-year. Growth of broad

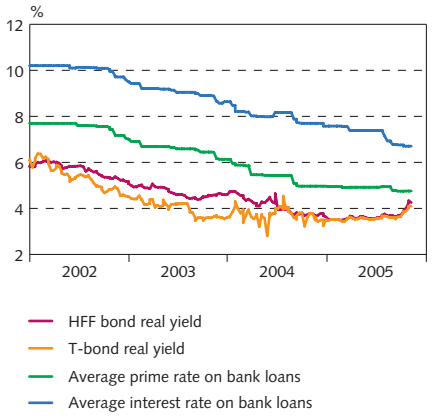
money (M3) slowed down in September, primarily due to the base effect, but remained high. M3 surged in September 2004, presumably coinciding with large-scale mortgage lending by the banks then – an increase in lending temporarily raises the level of deposits in the banking system.

Financial conditions of households and businesses have tightened since September

The rise in the policy rate is increasingly being transmitted in the form of tighter financial conditions. Short-term nominal lending rates track rises in the Central Bank's policy rate. While large international issues of króna-denominated bonds present businesses with an opportunity to borrow in Icelandic currency at lower interest rates than otherwise, the appreciation of the króna and rising interest rates on foreign currency-denominated loans have made foreign borrowing considerably less favourable. Furthermore, the strong króna is contributing to widespread erosion of companies' profits. This is only the beginning of a process which will presumably lead to far tighter financial conditions over the months to come.

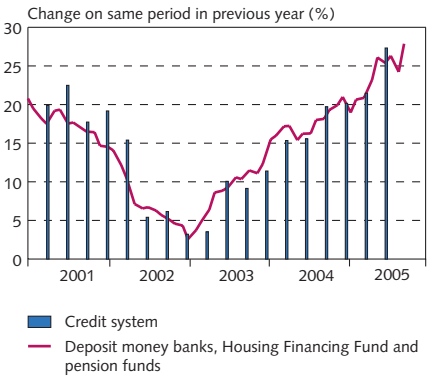
So far, households have not been affected much by the tight monetary policy, as non-indexed loans do not weigh heavily in their total debt. Higher interest rates on overdrafts and payment cards definitely represent a tightening, but the effect of higher mortgage interest rates will be crucial. Banks are also clearly more reluctant to lend to homebuyers now, since fully mortgaged properties do not represent such secure collateral when house prices are as high as they have been in the Greater Reykjavík Area recently.

Chart III-8
Average indexed bank lending rates and real yield on HFF bonds and T-bonds
Weekly data January 4, 2002 - November 11, 2005



Source: Central Bank of Iceland.

Chart III-9
Credit growth January 2001 - September 2005[1]



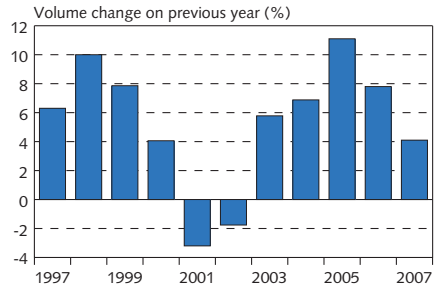
1. Quarterly credit system lending and monthly lending by DMBs, Housing Financing Fund and pension funds.
Source: Central Bank of Iceland.

IV Domestic demand and output

Since the Central Bank's last forecast was published at the end of September and until the exchange rate assumptions for the current forecast were decided in mid-November, the króna has appreciated by almost 6%, and the Central Bank has raised its policy interest rate by 0.75 percentage points: A clear message was delivered in *Monetary Bulletin* 2005/3 on a continuing tight monetary stance in the medium term. Subsequently, inflation expectations have diminished and the policy rate hike has been transmitted in full in real terms. The Central Bank's current forecast reflects these changes, but no new data are available from the national accounts since the September forecast was made.

The main change since the September forecast is a downward revision of output growth for all three years 2005 to 2007. The deviation is mainly explained by a greater-than-expected appreciation of the króna, which leaves an even more negative contribution by foreign trade to GDP this year and in 2006, as demand is increasingly channelled out of the economy. In 2007, domestic demand will begin to wane and exports will take over as the main source of economic growth.

Chart IV-1
Private consumption growth 1997-2007[1]



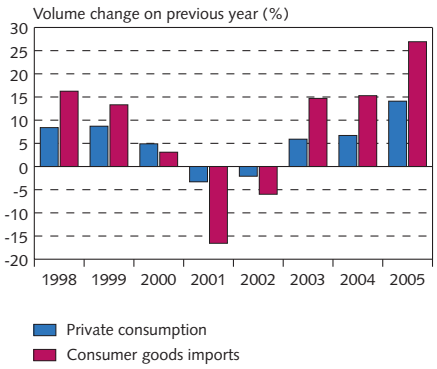
1. Central Bank forecast 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Private consumption

In September, the Central Bank forecast that private consumption would increase by 10% this year and remain robust over the next two years at 8% in 2006 and 4½% in 2007. However, wage drift at the end of the summer exceeded the September forecast and inflation in the last quarter is likely to be lower than forecast then. The outlook is therefore for a greater increase in real disposable income than was forecast in September, fuelling private consumption growth. Further indicators of private consumption growth in Q3/2005 point to broadly the same rate of growth in the second half of the year as in the first half. After taking these factors into account, the forecast for year-on-year private consumption growth in 2005 has been revised upwards to 11%.

However, the outlook is for marginally slower private consumption growth over the next two years than was forecast in September. Real disposable income will go up somewhat following the review of wage settlements, but this is countered by tighter financial conditions of households. Hitherto, the tight monetary policy has only had a limited impact on households, because interest rates on indexed bonds changed very little despite the policy rate hikes until September. Real interest rates went up following the last policy rate hike and are higher than had been forecast. Credit institutions have also recently raised their mortgage lending rates and general indexed lending rates are like to follow them.[6]

Chart IV-2
Consumer goods imports and private consumption, first-half figures for 1998-2005



Source: Statistics Iceland.

6. A more detailed discussion is included in Section III on Financial conditions above.

Table IV-1 Indicators of private consumption in the second half of 2004 and in the first ten months of 2005

% year-on-year change unless otherwise stated	Quarterly figures					Most recent period		
							Change based on	
	Q3/2004	Q4/2004	Q1/2005	Q2/2005	Q3/2005	Month	same month in prev. year	year-to-date figures
Grocery turnover (in real terms)	4.3	3.5	7.2	10.5	9.2	October 2005	8.0	9.6
Payment card turnover (in real terms)[1]	4.9	11.3	11.2	14.4	11.9	October 2005	6.1	11.8
of which domestic	4.0	9.8	9.8	12.8	10.3	October 2005	3.1	9.9
of which abroad	18.4	34.0	35.6	33.7	35.9	October 2005	43.4	36.7
Car registrations (increase in number)	19.5	44.3	61.4	64.4	57.8	October 2005	45.2	60.0
General imports (volume change)[2]	13.6	16.0	15.1	17.5	19.5	September 2005	.	19.5
Imports of consumer goods (volume change)[2]	14.5	15.7	22.1	26.9	26.0	September 2005	.	26.0
Private motor vehicles[2]	24.6	35.0	56.7	66.0	61.3	September 2005	.	61.3
Consumer durables. e.g. household appliances[2]	16.3	17.1	36.3	38.5	38.7	September 2005	.	38.7
Consumer semi-durables. e.g. clothing[2]	8.8	7.5	16.9	17.4	17.5	September 2005	.	17.5
Food and beverages[2]	10.5	10.2	6.8	9.0	8.5	September 2005	.	8.5
Imports of investment goods excluding ships and aircraft (volume change)[2]	23.8	19.3	36.9	26.6	28.4	September 2005	.	28.4
Gallup confidence index	5.5	-3.2	-1.7	9.4	5.6	October 2005	-3.7	11.8
Current situation	23.1	19.8	21.2	34.6	30.7	October 2005	22.9	35.3
Expectations six months ahead	-3.5	-14.7	-13.7	-5.9	-9.0	October 2005	-22.3	-4.1

1. Payment card turnover for both households and businesses; the bulk of payment card turnover comes from households. 2. Quarterly figures are year-to-date figures.

Sources: Federation of Trade and Services, Motor Dealers' and Services Federation, Statistics Iceland, IMG Gallup, Central Bank of Iceland.

Public consumption

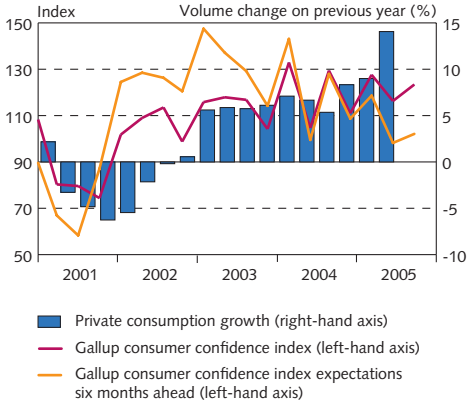
Since the Central Bank's last macroeconomic forecast in September, the government has introduced its budget for 2006 and the Ministry of Finance's new medium-term fiscal programme for 2006-2009 has been announced. A more detailed breakdown of public sector expenditures for the first half of 2005 has also been published by Statistics Iceland. The current forecast is therefore based on more complete data than were available at the end of September.

In September, the Central Bank forecast that public consumption would grow by 3½% this year and roughly 3% p.a. over the next two years. It forecast more growth in public consumption by local authorities and the welfare system than by the central government. The forecast for this year has now been revised downwards to 3%, but the outlook is virtually unchanged for 2006 and 2007.

The lower estimate for public consumption in 2005 is largely explained by less central government consumption than was forecast in September. The most recent Ministry of Finance estimates, announced in October when the budget was presented, put the figure at 2.4%. These estimates are backed up by the development of central government expenditures within the year and are used in the forecast. Municipal consumption is still forecast to increase by 4½%.

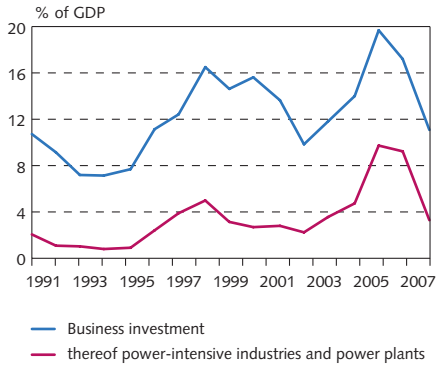
Consumption by central government and the welfare system is still expected to increase by more in 2006 and 2007 than assumed in the new draft budget. Experience shows that total public consumption generally exceeds initial estimates.

Chart IV-3
Private consumption and consumer confidence[1]
Q1/2001 - Q3/2005



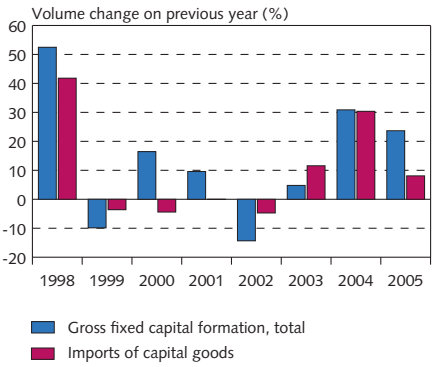
1. Confidence index at end of each quarter.
Sources: IMG Gallup, Statistics Iceland.

Chart IV-4
Gross fixed capital formation: businesses, power-intensive industries and power plants 1991-2007[1]



1. Central Bank forecast for 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-5
Gross fixed capital formation and imports of capital goods, first-half figures for 1998-2005



Source: Statistics Iceland.

Gross fixed capital formation

The Central Bank's forecast for gross fixed capital formation has not changed much since September. It forecast an increase of 31% this year and contractions of 4% in 2006 and 16% in 2007 respectively. The new forecast remains unchanged for the current year, with a slightly smaller decrease in 2006, at 3%, but a larger contraction of 20% in 2007.

Business investment to contract in 2006, and by more in 2007

In the current macroeconomic forecast, slightly more business investment growth is assumed in 2005 than in the September forecast, at 56%. The forecast contraction in 2006 has been lowered to 4% from 7%. In 2007, however, an even larger decrease is forecast now, amounting to 32%.

The slight rise in the business investment forecast for 2005 is largely explained by robust domestic demand which has driven investment in sectors such as services and construction. A large-scale aircraft investment was also announced after the September forecast was published. While investments in the aluminium and power sectors to the tune of roughly 3 b.kr. this year that were assumed in the forecast have been rescheduled to 2006, the aircraft investments outweigh them by adding roughly 8 b.kr.

Financial conditions of businesses have tightened and the króna has appreciated since the September forecast. Domestic real interest rates have risen but foreign rates are still low, especially in the euro area, although there are many indications that they will go up in the near future. Tighter conditions are clearly reflected in the investment forecast. A greater contraction in general business investment excluding power-intensive industry, ships and aircraft in 2006 is forecast now compared with September, and the projected increase in 2007 has been revised downwards from 5% to virtually zero. Stepped-up investment in the aluminium and power sectors next year will counterbalance this development and result in a smaller contraction in total business investment than was foreseen in September. In 2007, however, the contraction will be sharper than forecast hitherto, due to higher real interest rates.

Table IV-2 Profitability of listed companies in the first three quarters of 2004 and 2005[1]

	EBITDA % of turnover		*Net earnings % of turnover*		*Return on assets*[2]		*Return on equity*		*Equity ratio*	
	2004	*2005*	*2004*	*2005*	*2004*	*2005*	*2004*	*2005*	*2004*	*2005*
Fisheries	21.6	18.2	11.7	7.9	8.0	7.6	8.5	14.5	34.4	33.5
Manufacturing	17.9	12.6	11.4	7.0	12.6	6.6	20.1	13.9	40.2	26.5
Marine exports	-16.1	-2.0	-20.3	-2.8	-2.7	-0.5	-8.2	-1.8	41.7	40.0
Transport	13.2	10.2	8.3	0.0	13.8	7.2	25.5	42.5	34.1	29.4
ITC	10.3	8.6	5.7	3.8	3.7	7.2	5.9	8.5	34.7	38.3
Other	20.7	19.4	12.0	14.3	10.1	10.6	16.2	23.9	36.0	32.9
Total	14.3	11.3	7.9	5.1	7.9	6.2	11.6	9.3	38.0	30.2

1. Based on the accounts of the 14 listed non-financial companies that were available on November 25, 2005. 2. EBITDA as a proportion of total assets.
Source: Central Bank of Iceland.

The impact of the appreciation of the króna varies widely across the business sector. Companies with substantial shares of their operating costs denominated in krónur but revenues in foreign currencies are hit hardest by the strong real exchange rate. Many companies in the fisheries and tourism sectors are cases in point. Gallup's new business confidence survey conducted for the Central Bank, Confederation of Employers and Ministry of Finance in October, for example, gives a strong indication that fisheries companies' expectations have plunged since the previous survey in February.

Management in general view the current economic climate as very favourable, according to the Gallup survey. However, businesses are much less upbeat than in February when asked about the state of the economy six and twelve months ahead.

Public sector investment will shrink by more this year and next year

As mentioned in the section on public consumption above, a substantial amount of data on the public sector has become available since the Central Bank's forecast in September. This has resulted in a number of changes to the forecast.

In September, the Central Bank forecast a sizeable contraction in public sector investment this year (7%) and next year (9%), followed by a hefty increase of 23% in 2007. A greater contraction is now forecast for 2005 and 2006, but a somewhat larger increase in 2007. It should be underlined, however, that public sector investment does not weigh very heavily in total gross fixed capital formation. A shift of a few percentage points in public sector investment therefore does not imply a major change in the total.

The current forecast is based on the draft budget for 2006, which projects a 20% contraction in central government investment both this year and in 2006. Local government investment is also forecast to decrease by 5% in 2005 and almost 12% next year. Although a sharp contraction in investment during a local government election year (2006) is quite unusual, growth tends to hit a peak during the year before the elections.

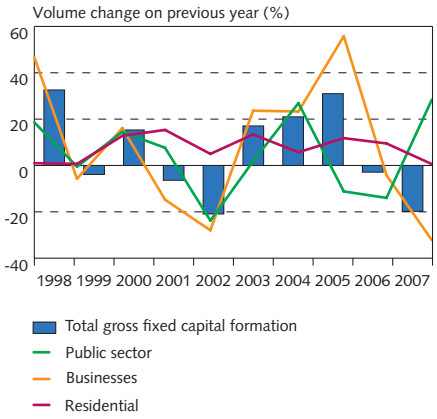
The Central Bank's forecast for 2007 is partly based on the Ministry of Finance's new medium-term fiscal programme, which assumes that central government investment will increase by roughly 90% in 2007. The Ministry of Finance estimates that local government investment will shrink by 21% in 2007 to the lowest figure for 25 years as a proportion of GDP. However, the Central Bank forecasts a contraction of 13%.

Ambiguous indications about residential investment

In September, the Central Bank forecast an increase in residential investment of 12% this year and 10% in 2006. Mortgage rates have risen since the updated forecast was completed, but their effect is negligible since the increase is in tune with the forecast development of indexed interest rates. In 2007, residential investment is expected to remain roughly unchanged year-on-year.

Chart IV-6

Gross fixed capital formation growth and its main segments 1998-2007[1]



1. Central Bank forecast 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Other residential investment indicators have changed little since September, so the Central Bank's forecast for residential investment remains broadly unaltered since then. As in September, however, these indicators are fairly ambiguous. On the basis of issued building permits, the volume increase can be estimated at 16% last year and 22% this year. Figures from the Land Registry of Iceland tell a similar story for 2004, with almost 18-20% more properties built than during the previous year. A different picture is given by data from Statistics Iceland showing an increase in residential investment of only 5.7% last year. Soaring house prices over the past year indicate a powerful upswing in the sector, but the shortage of skilled construction workers is a constraining factor.

Imports

Most indications are for faster import growth than was forecast in September. The current forecast for year-on-year import growth in 2005 has been upped to 24½% from the earlier 23%. Faster growth is explained by the appreciation of the króna and upward revisions of public consumption and investment growth since September. In the first three quarters of 2005, import volume increased year-on-year by 22.9%. Of this figure, consumer goods increased by 27.4% in volume terms, investment goods by 38% and capital goods by 11.4%.

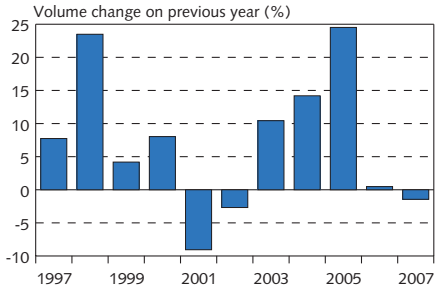
Imports are expected to increase by ½% in 2006, marginally more than in the September forecast and mainly driven by the stronger real exchange rate. In 2007, imports are expected to drop by almost 1½% year-on-year, which is more than was forecast in September, due to a contraction in national expenditure.

GDP growth and the output gap

The bottom line of the above analysis is that the outlook is for less output growth from 2005 through to 2007, compared with the September forecast, although growth is still expected to remain robust for all three years. The main explanation for the slowdown is the stronger real exchange rate than in the September forecast, resulting in an even more negative contribution by foreign trade to GDP in 2005 and 2006. In other words, domestic demand is being increasingly channelled out of the economy. Forecast national expenditure is virtually unchanged for 2005 and 2006 but a larger contraction is expected in 2007. A turning point will be reached that year, when exports take over from domestic demand as the main driver of GDP growth

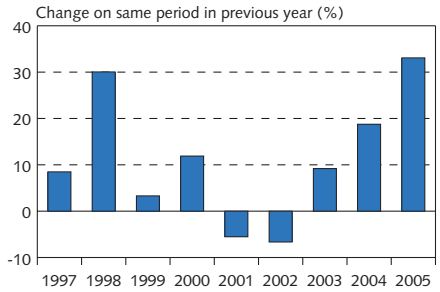
Changes in the growth outlook affect output gap estimates. The forecast for the positive output gap has been revised downwards, most noticeably for 2006 and 2007. In September, the positive output gap – i.e. production in excess of long-term production potential – was forecast at just under 5% next year and almost 3% in 2007. The current forecast is just under 3½% this year, 4½% next year and just below 2% in 2007. Thus even though it has decreased, the output gap is still expected to remain firmly positive over the forecast horizon. It should be underlined that output gap estimates are subject to great uncertainties, especially the most recent measurements, which are most crucial for evaluating future developments.

Chart IV-7
Import growth 1997-2007[1]



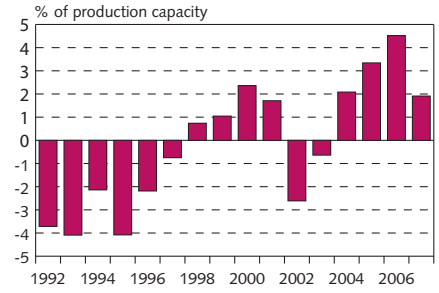
1. Central Bank forecast for 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart IV-8
Goods imports in the first nine months of the year 1997-2005



Source: Statistics Iceland.

Chart IV-9
The output gap 1992-2007[1]



1. Central Bank forecast for 2005-2007.
Source: Central Bank of Iceland.

V Public sector finances

The outlook for Treasury revenues this year has improved even further. Tax revenues have been robust since the last *Monetary Bulletin* was published at the end of September and the outlook is for record corporate income tax revenues. As a result, Treasury revenues should rise by another 7-10 b.kr. compared with the draft supplementary budget. The outlook for local government finances for 2005 remains broadly unchanged from the September forecast, but the estimated structural balance of the public sector as a whole has improved. This is largely because corporate income tax collections were previously underestimated.

Draft supplementary budget: privatisation of Iceland Telecom and a surge in other revenue

The draft supplementary budget was presented to Parliament at the beginning of October. Forecast revenue for 2005 was raised from 306 b.kr. to 328 b.kr., excluding revenues from the privatisation of Iceland Telecom and related items. Likewise, the expenditure forecast was upped from 296 b.kr. to 305 b.kr., excluding privatisation costs and irregular items. Privatisation of Iceland Telecom boosted Treasury revenues by 57½ b.kr. in direct profit on the sale and by almost 5 b.kr. in dividends as a preparatory step for privatisation.[7]

According to the supplementary budget, tax revenues excluding items connected with Iceland Telecom will amount to 301 b.kr this year, as against 281 b.kr. in the original budget. The bulk of the extra revenue is accounted for by higher-than-expected indirect taxes, stamp duty and capital income tax. Personal income tax yields an extra 1 b.kr. and 7 b.kr. of corporate tax revenues were added during its second parliamentary reading. The increase in tax revenues reflects intense economic activity this year and strong business profitability in 2004.

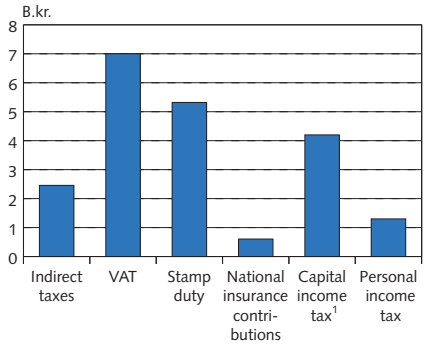
Expenditures also increase by 9 b.kr. from the main budget, excluding items connected with Iceland Telecom. Excluding irregular items and interest payments, over which the Treasury has little direct control, expenditures will end up more than 6 b.kr. higher than budgeted, which amounts to a rise of 2% from the budget to the draft supplementary budget. With this addition, real expenditures in 2005 will be 2.9% higher in real terms than in 2004. The budget target was 2.3%.

Central Bank estimates for 2005 revised in light of new data

In its macroeconomic forecast, the Central Bank estimates Treasury revenues just over 10 b.kr. higher than the draft supplementary budget. This is mostly due to increased corporate tax revenue.

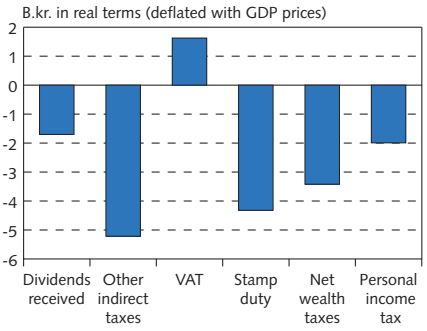
7. The Treasury's payment of capital income tax to itself is entered both on the revenue and expenditure sides. Finally, the book value of Iceland Telecom is entered as a cash flow rather than as revenue, although this does not affect the Treasury's credit budget surplus.

Chart V-1
Additional revenue in
the draft supplementary budget 2005[1]



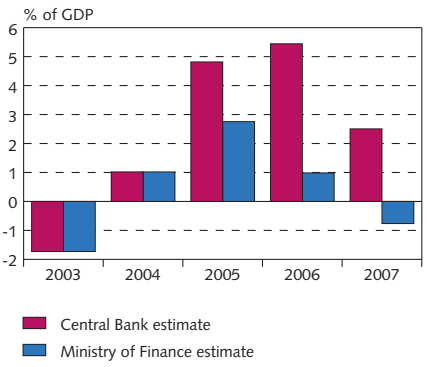
1. Excluding privatisation of Iceland Telecom.
Source: Draft supplementary budget 2005.

Chart V-2
Revenue reductions
in the draft budget for 2006



Source: Draft budget 2006.

Chart V-3
Treasury balance 2003-2007
National accounts presentation



Sources: Ministry of Finance, Central Bank of Iceland.

In light of data presented in the draft supplementary budget, forecast growth of consumption by central government and the welfare system has been revised downwards and a considerably larger contraction in their investment is now expected. Total expenditures are now expected to rise in nominal terms by 5% year-on-year in 2005, instead of 7%.

Cautious revenue forecast in the budget for 2006 ...

The draft budget and estimates for 2006 reflect the impact of a cut in personal income tax and the abolition of net wealth taxes. Revenues from indirect taxes are down by 2% in real terms and regular expenditures by 1%. In addition, the government's measures to back up the review of wage settlements are known to cost the Treasury more than 1½ b.kr. next year and considerably more when planned changes to unemployment benefits go into effect, especially if unemployment rises sharply.

Treasury revenues are expected to fall by almost 15 b.kr. year-on-year at constant prices, and the ratio of taxes to GDP from 31% to 28½%. Tax cuts during the year will cost roughly 10 b.kr. and a somewhat larger revenue loss is expected in indirect taxes. The stamp duty is expected to yield around 4 b.kr. less when mortgage refinancing begins to decline and housing market pressures ease. Increased revenue generated by greater production and earnings in general will partly offset these losses.

Treasury expenditures, deflated by GDP prices, are expected to fall by 12 b.kr., almost entirely due to irregular items and debt service. Relatively modest increases on education will balance lower fixed investment. Expenditures excluding interest payments and irregular items (pension fund commitments, revenue write-offs and privatisation costs) should remain virtually unchanged in real terms, compared with an average of 3.5% p.a. over the period 1991-2004. Robust economic growth will nonetheless reduce the ratio of regular public sector expenditure to GDP by almost 1½ percentage points.

... while the Central Bank forecasts higher Treasury revenues next year

Projections based on the Central Bank's macroeconomic forecast produce a higher estimate for Treasury revenues next year than in the draft budget: an increase of 1½% in real terms as against a decrease of almost 4½%. The discrepancy is largely explained by differences in assumptions and macroeconomic forecasts. The Central Bank forecasts much higher growth of household earnings and GDP than the Ministry of Finance. Also, the ministry assumes that revenues from stamp duty and import duties will go down, which the Central Bank does not. While a case for such reductions can be argued, it is less relevant in a robust growth climate and when an unchanged exchange rate and interest rates are assumed, as in the Central Bank's forecast.

The draft budget aims to keep regular expenditures virtually unchanged in real terms. This is an ambitious target given that they have risen by at least 2% p.a. in real terms ever since 1998 and sizeable expenditure pressures are now present. Nonetheless, the expen-

diture estimate from the draft budget is used in the Central Bank's forecast, plus foreseeable expenditures in connection with the review of wage settlements.

On the basis of the Central Bank's macroeconomic forecast and assuming that only half of this year's increase in revenues from corporate taxes will be reversed in 2006, the Treasury surplus will be much greater than projected in the draft budget. Revenues will increase by 6½ percentage points more than assumed in the budget while the same change in expenditures is foreseen, i.e. a 1% decrease in real terms. Thus the Treasury balance will improve by 13 b.kr. year-on-year according to the Central Bank's forecast but deteriorate by 11 b.kr. according to the draft budget, in both cases excluding the impact of Iceland Telecom and other irregular items.

Further tax cuts and a massive increase in investment in 2007

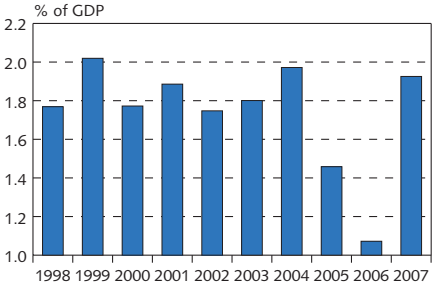
In 2007, taxes will again be cut on a comparable scale to 2006. The personal income tax rate will be reduced from 23.75% to 21.75% of the tax base, costing the Treasury an expected 11-12 b.kr. Tax base growth will partly offset this to leave a net reduction in revenues from direct taxes amounting to 7 b.kr. at 2006 prices, according to Ministry of Finance estimates. On the expenditure side, central government investment will be up by more than 10 b.kr. Proceeds from the privatisation of Iceland Telecom which have been earmarked for investment projects are added almost in full to investment plans previously scheduled in the medium-term fiscal programme from autumn 2004. Transfers are likewise expected to increase substantially due to higher unemployment, a rise in child allowance and commitments made under the review of wage settlements in November this year. The draft budget, which was proposed before the wage review commitments were made, assumed that a 14 b.kr. surplus in 2006 would swing over to a 10 b.kr deficit in 2007.

The Central Bank forecasts a smaller increase in expenditures than the draft budget, in part because of lower debt and lower debt service. According to the Central Bank's forecasts and estimates, output growth will remain fairly robust, earnings will rise substantially and Treasury revenues from indirect taxes will remain broadly unchanged in real terms. However, the Treasury surplus will be slashed by the decrease in direct tax revenue and increased expenditures. A handsome surplus will nonetheless be recorded, according to the Central Bank macroeconomic forecast, in the range of 20-30 b.kr., which is broadly unchanged from the September estimate.

Local government deficit narrows

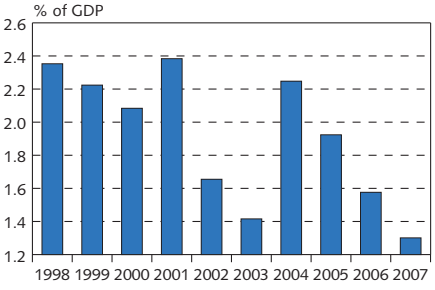
The outlook for local government finances has changed little, because Statistics Iceland's preliminary figures for 2004 had already been released when *Monetary Bulletin* was published in September. Thus the changes in the Central Bank's estimates for local government finances are almost entirely the result of revisions to the macroeconomic forecast. Revenues are still expected to grow faster than GDP, as a result of higher real estate prices and increased contributions from the Municipal Equalisation Fund.

Chart V-4
Central government investment 1998-2007[1]



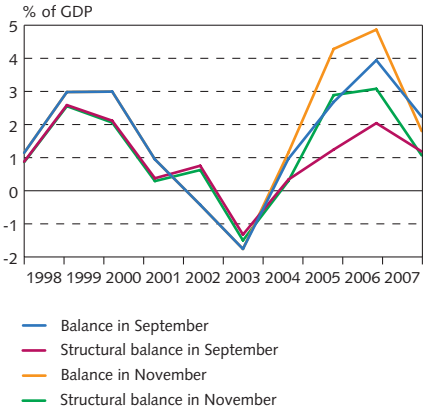
1. Central Bank estimates for 2005-2007.
Source: Central Bank of Iceland.

Chart V-5
Local government investment 1998-2007[1]



1. Central Bank estimates for 2005-2007.
Source: Central Bank of Iceland.

Chart V-6
Treasury balance and structural balance[1]
Estimates in September and November



1. Central Bank estimates for 2005-2007.
Source: Central Bank of Iceland.

The estimated increase in consumption by local governments is unchanged from the September forecast. Statistics Iceland's preliminary data showed a smaller increase for 2003 and 2004 than had been estimated, but limited information is still available for 2005. Compilation of local government financial results is a slow process and they can give an ambiguous picture because their accounting principles diverge sharply from the national accounts. For example, local government operating expenditures were unchanged year-on-year in 2004, according to accounts published recently in the Association of Local Authorities' annual report, but increased by 7% according to Statistics Iceland's estimates.

Investment expenditures are expected to decrease by 5% this year, 10% in 2006 and 13% in 2007, even if it is unusual for investment to decline in the year before municipal elections. If these estimates hold, local government investment in 2007 will be the lowest for 25 years, measured as a percentage of GDP. One explanation may lie in new leasing options now available to local authorities.

On the basis of the above estimates, local government revenues will increase marginally faster than GDP, but expenditures by 2-3 percentage points less. Accordingly, the overall local government result should improve from a deficit of 10 b.kr. in 2004 (equivalent to 1% of GDP), and reach balance in 2007.

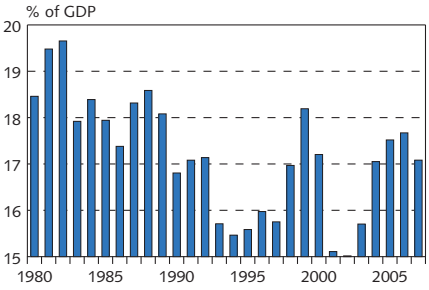
Estimated Treasury structural balance unchanged from September, apart from underforecast corporation tax revenues

The estimated central government structural balance in 2005 and 2006 is stronger than in September, on the basis of conventional cyclical adjustments. Mostly this is the result of an improved outlook for the Treasury balance. The output gap this year and for the next two years is only marginally less than forecast in September, but the estimated Treasury result for 2005-6 has strengthened. The structural balance is essentially the fiscal balance less a correction proportional to the output gap. Hence, the estimated structural balance improves marginally more between forecasts than does the estimated balance. However, the result for 2007 has been revised downwards since September, as shown in Chart V-6.

From a monetary policy perspective, the crucial issue in analysing public sector finances during an upswing is to assess whether the countercyclical fiscal stance is adequate. The soundness of the estimated central government result is also worth examining, since a boom can sometimes conceal fiscal weaknesses. One assumption in the Central Bank's estimates of the public sector result is that indirect taxes as a proportion of GDP increase on average by roughly 0.13 percentage points when the output gap increases by 1 percentage point of GDP. This corresponds to a 3 b.kr. reduction in indirect tax revenues if the output gap in 2007 were zero, instead of almost 2% as forecast by the Central Bank.

Chart V-7 shows Treasury revenues from indirect taxes as a proportion of GDP. The long-term path trends downwards, but the ratio also rises significantly at the cyclical peaks in 1982, 1987, 2000 and 2006. The chart gives some indications that the cyclical sensitivity of

Chart V-7
Treasury revenues from indirect taxes 1980-2007[1]



1. Central Bank estimates for 2005-2007.
Source: Central Bank of Iceland.

indirect taxes is greater than 0.13. From 2002 to 2004, for example, the output gap widened by 4.7 percentage points while indirect taxes as a proportion of GDP rose by 2 percentage points. Relative changes in one upswing are hardly a dependable predictor of what to expect in other cycles. Using this ratio nevertheless as a measure of the cyclical sensitivity of indirect taxes yields a figure of 0.43 instead of 0.13. This implies that the Treasury might be expected to lose 10 b.kr. in revenues if the output gap in 2007 measured zero and not almost 2% of GDP.

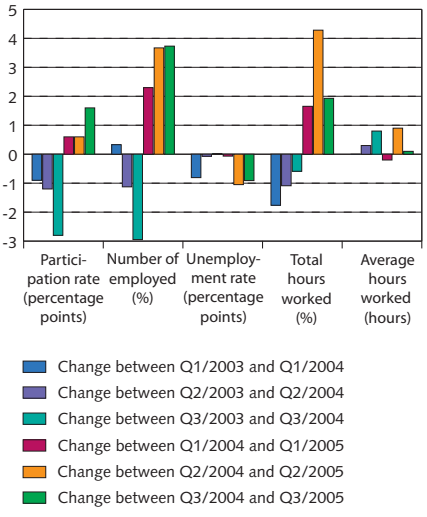
Other reasons for surpluses at cyclical peaks are that the ratio of wages to GDP tends to be procyclical (see e.g. *Monetary Bulletin* 2001/4, Box 1, pp. 6-7) while there has been a tendency to adjust the tax-free limit for personal income tax by less than the change in wages. If this tendency is weaker during downturns, tax revenues will be below trend in such circumstances. A rough appraisal of the tax system indicates that a 1% shortfall of the income tax base lowers the revenues generated by around 1.8%. Wage income was 83% of the income tax base in 2004 and influences the movements of most of the rest.

At a cautious estimate, the ratio of wages to GDP could decrease by 1 percentage point if the 2% positive output gap in 2007 were to close. Wage earnings amounted to roughly half of GDP according to tax returns for 2004. If the output gap closed completely and the present ratio were to fall by 1 percentage point in 2007, Treasury revenues from income tax would be likely to shrink by almost 3½%, or 2-3 b.kr., assuming that the tax-free limit was left unchanged.

According to the above, the cyclical sensitivity of the wage-to-GDP ratio and greater sensitivity of indirect taxes could trim back Treasury revenues by 12-13 b.kr. if economic conditions normalised in 2007. Nonetheless, a fiscal surplus of roughly 10 b.kr. would still be left. Although different methodologies are used, the result is similar to that obtained by a conventional cyclical adjustment, as shown in Chart V-6. However, it is unwise to draw sweeping conclusions from forecasts for 2007 which assume an unchanged interest rate and exchange rate. The use of single-cycle relative movements is even more problematic. The actual outcome will almost surely differ from what these calculations imply. That said, they do indicate that the fiscal position is fairly strong, although the impulse to dampen demand and macroeconomic pressures could be greater.

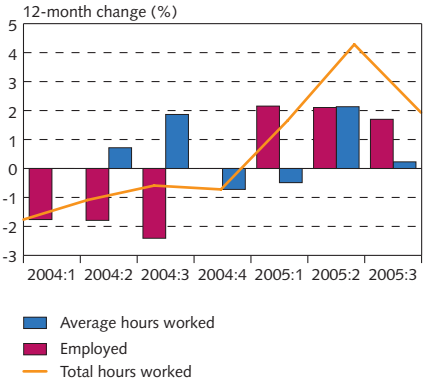
VI. Labour market and wage developments

Chart VI-1
Changes in labour market 2003-2005



Source: Statistics Iceland.

Chart VI-2
Changes in average hours worked and the number of employed, relative to changes in total hours worked
Q1/2004 - Q3/2005



Source: Statistics Iceland.

Higher wage costs than in the September forecast

Seasonally adjusted unemployment began to fall again in September after remaining virtually unchanged since March. Unemployment decreased further in October to a seasonally adjusted rate of 1.6%. Statistics Iceland's labour market survey for Q3 shows increased labour use, as expected, primarily due to an increase in the number of employed. Growing wage drift was forecast in September, reflecting heavy excess demand for labour and greater problems in meeting it with imported labour. Wage drift at the end of the summer exceeded the September estimate. The social partners' review of wage agreements was concluded on November 15 with an agreement on a one-off payment in December 2005 equivalent to an additional wage rise of roughly 0.65% over the 13 months from December 2005, with an equivalent rise at the beginning of 2007 over and above the previously negotiated increment. Wage costs over the coming years will therefore be somewhat higher than forecast in September.

Labour use continues to increase in Q3

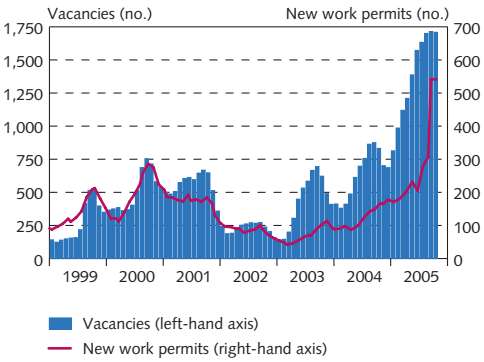
According to Statistics Iceland's labour market survey, labour use continued to rise year-on-year in Q3/2005. Unlike the second quarter, increased labour use then was almost entirely explained by an increase in the number of employed, while average hours worked remained virtually unchanged. Total hours worked increased in pace with the growth in the number of people at work during the reference week, by 1.7%, but had slowed down from Q2.[8] As in the preceding two quarters, the youngest and oldest age-groups accounted for most of the addition to the number of employed (70% of the total), although this was lower than the 90% recorded in the first half of the year. The participation rate went up by 1.6 percentage points year-on-year to 83.1%, a sizeably faster growth rate than in the first half of the year.

Vacancies registered at employment agencies indicate ongoing excess demand for labour which is only being met domestically on a small scale.[9] In the period August-October, the number of such vacancies doubled year-on-year. Issuance of new work permits surged in early autumn when staff were hired for construction of the aluminium smelter in Reyðarfjörður. Almost 850 new work permits were issued in September and although the figure slipped back in October to just over 400, this was still well above the 250 average for the period January-August.

8. Statistics Iceland's labour market surveys report on the number of persons at work during the reference week and the hours they worked. They also state the number of persons employed, which in addition to those at work include those who are in employment but temporarily absent (on sick leave or vacation), with data on their normal working hours. Total hours worked are the number of persons at work during the reference week multiplied by their hours worked.
9. See, however, the discussion of vacancies in Rannveig Sigurdardóttir: The enigma of the Icelandic labour market, *Monetary Bulletin* 2005/1, pp. 93-103.

The latest confidence survey of the 400 largest businesses in Iceland, conducted by Gallup on behalf of the Central Bank, Ministry of Finance and Confederation of Employers, shows that the proportion of employers expecting to recruit employees over the next six months was broadly unchanged (38.5%) from the previous survey in February. However, a larger proportion expects to lay off staff: more than 15% compared with just under 9% in February. Attitudes vary sharply between sectors, probably reflecting differences in profitability. Planned recruitment runs highest in specialised services (67%) and the financial and insurance sector (46%), while almost 50% of fisheries businesses want to lay off employees.

Chart VI-3
Vacancies registered at employment agencies and issuance of new work permits 1997-2005[1]

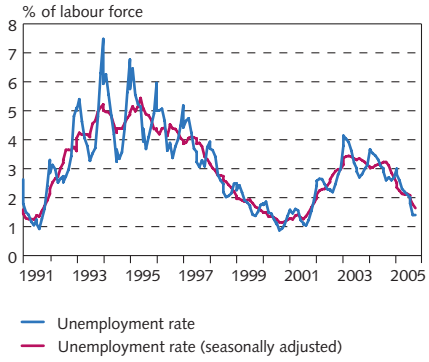


1. Monthly data, 3-month moving average.
Source: Directorate of Labour.

Unemployment in line with the September forecast

After remaining virtually unchanged since March, seasonally adjusted unemployment fell in September and again in October, to 1.6%. Registered unemployment in that month measured 1.4%, down by 1½ percentage points year-on-year and the lowest monthly figure since October 2001. So far this year, registered unemployment has measured 2.2%, which is in line with the Central Bank's September forecast for 2% over 2005. Next year's unemployment forecast remains at just under 2%, rising in 2007 to almost 2½%.

Chart VI-4
Unemployment rate
January 1991 - October 2005



Sources: Directorate of Labour, Central Bank of Iceland.

More wage drift at the end of the summer than was forecast in September ...

Wage pressures appear to have built up in the private sector at the end of the summer. Private sector wages in Q3/2005, as measured by Statistics Iceland's wage index, were 6.1% higher year-on-year. Since the CPI was 4% higher year-on-year in Q3, real wages increased by roughly 2%. The twelve-month change in private sector wages was in fact lower than in Q1 and Q2, but only because wage increases negotiated in both 2004 and 2005 were filtering through in the first two quarters.

Calculations using the Institute of Labour Market Research's methodology for selected sectors and the main private sector employee groups show a disparity in year-on-year changes in Q3/2005. Taking increments included in wage settlements into consideration, no wage drift appears to be present in the food and beverage industry. The Gallup survey found that almost one out of four fisheries companies expects that wages will fall this year, and almost one out five that they will also do so over the next six months.[10] However, wages appear to have risen more than negotiated increments in the construction and contracting sector, although not by very much in historical terms. Some wage drift also appears to have occurred in the retail sector and maintenance and repairs. Growing excess demand for labour, in particular in service industries, will not be met with imported labour on the same scale as in the construction and contracting sector. Accordingly, increased wage pressure in excess of the basic terms of wage settlements can be expected in the months to come.

10. To some extent, this may be due to the arrangement whereby fishermen's wages are partly calculated as a share of catch value.

... and the review of wage settlements will increase wage costs next year

The social partners' review of private sector wage agreements was concluded on November 15 with an agreement on a one-off payment of 26,000 kr. in December 2005. This is equivalent to an additional wage rise of roughly 0.65% over the 13 months from that time. If wage settlements are not revoked in the second review in November 2006, wages will go up at the beginning of 2007 by 0.65% on top of the 2.25% originally negotiated in 2004.

The Central Bank's forecast for growth of wage costs has therefore been revised upwards from 6.1% to 6.6% this year and from 6.4% to 7.2% in 2006. In 2007, the forecast rise in wage costs is broadly unchanged at 5.5%.

Based on the Central Bank's forecast for labour productivity developments, this implies that unit labour costs will increase by just over 5½% this year, 5.8% next year and almost 4½% in 2007. These rises are well above a level which is compatible in the long run with the Bank's inflation target of 2.5%, and represent mounting underlying inflationary pressure from the domestic labour market.

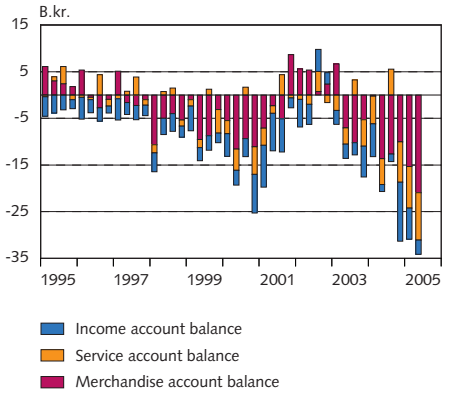
VII External balance

This year's current account deficit could be even wider than was forecast in September

In September, the Central Bank forecast a current account deficit equivalent to more than 14% of GDP this year, broadly in tune with the results of the first half of the year. Now the deficit appears to be heading even wider. The divergence from the September forecast is explained by a deterioration in the merchandise account in recent months and an ongoing appreciation of the króna. If the real exchange rate remains as high as forecast, it will dampen exports and stimulate imports. The current account deficit for this year is now forecast at roughly 15½% of GDP. Over the next two years it will narrow to just under 7% in 2007. Imports connected with investments in the hydro and aluminium sectors are estimated to account for less than half the deficit this year and in 2006, but only one-third of the deficit in 2007. It should be borne in mind that the forecast assumes that interest rates and the exchange rate remain unchanged. Given that the real exchange rate is currently at one of the highest levels for decades, these assumptions must be considered unlikely to hold.

Chart VII-1
Current account balance components
Q1/1996 - Q2/2005

Net current transfer is included in balance on income

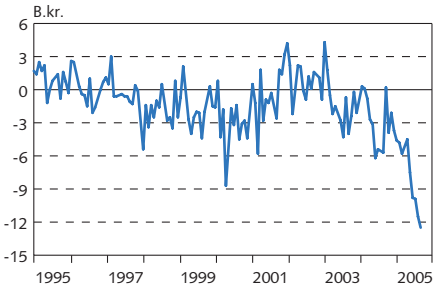


Sources: Statistics Iceland, Central Bank of Iceland.

Record merchandise deficit this year

The deficit on the merchandise account amounted to almost 72 b.kr. over the first nine months of 2005. Almost half the deficit was incurred in Q3. At a rough estimate, the merchandise deficit over the first nine months was equivalent to 10% of GDP. Most indicators point to a hefty deficit in Q4 as well, with a peak in investments in the aluminium and hydro sectors, foreseeable aircraft investments and no sign of a significant slowdown in growth of imported consumer goods. In addition, the króna has appreciated substantially, which will compound the deficit in the months to come. The merchandise trade deficit could therefore exceed 100 b.kr. this year, a new record.

Chart VII-2
Merchandise account balance
January 1995 - September 2005[1]



1. At constant exchange rate based on the trade-weighted currency basket.
Sources: Statistics Iceland, Central Bank of Iceland.

Service account generally positive in Q3

Countering the wider merchandise account deficit, the service account generally shows a surplus in Q3. This seasonal pattern can be expected to continue, and a sizeable year-on-year increase in service exports is forecast for the second half of this year. One reservation is that exchange rate developments could also have a considerable effect on the service account balance, although one of the fastest-growing components most recently – transport – is relatively immune to exchange rate changes.

Major uncertainties about the balance on income

The balance on income has been fairly volatile in recent years. Fluctuations have mostly originated in reinvested earnings on foreign direct investment, which weigh increasingly heavily as investment abroad has been soaring. In Q2/2005, reinvested income largely matched the debt service deficit, preventing the current account from moving even further into the red. Over the years, the reinvested earnings item has swung sharply between surpluses and deficits, and

there have been substantial revisions due to long delays in obtaining final data.

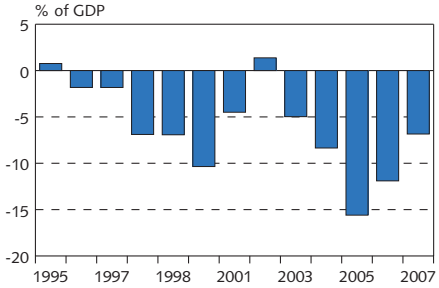
Since Iceland's net external debt is equivalent to almost 1½ GDP, the initial impact of an appreciation of the króna is to reduce the balance on income deficit. Looking one to two years ahead, however, an appreciation increases the current account deficit, resulting in increased debt accumulation and thereby higher debt service abroad.

Long-term interest rates in major trading partner countries have been moving upwards in recent months. Hitherto, lower interest rates abroad have outweighed the deterioration in the debt position. The outlook is for a reversal of this trend, but the impact is likely to be modest this year.

The current account deficit will put strong pressure on the króna in the medium term

Over the medium term, the massive current account deficit that is foreseeable this year and in 2006 will demand a significant macroeconomic adjustment. The baseline scenario presented in this edition of *Monetary Bulletin* indicates that a considerable deficit will remain in 2007, given unchanged interest rates. However, the assumptions underlying the baseline scenario are unlikely to hold. A current account deficit on the scale forecast is generally only short-lived. The real exchange rate is also way above a level that is sustainable in the long run. Historically, the real exchange rate in Iceland has only briefly remained as high as assumed in the forecast.[11] Thus an adjustment will probably take place through the combined effect of a depreciation of the króna, increasing exports and shrinking domestic demand. It seems likely that the adjustment will begin within the forecast horizon. Consequently, the forecast current deficit for 2007 should not be taken too literally, any more than other aspects of a conditional forecast.

Chart VII-3
Current account balance 1995-2007[1]



1. Central Bank forecast 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Table VII-1 Current account deficit 2004-2007

		Forecast[1]		
% of GDP	*2004*	*2005*	*2006*	*2007*
Current account balance	-8.4	-15.6	-11.9	-6.8
Merchandise account	-4.1	-10.6	-4.6	0.7
Services account	-1.7	-2.1	-3.8	-3.4
Balance on income	-2.4	-2.9	-3.4	-4.1

1. Central Bank forecast in November 2005.

Source: Central Bank of Iceland..

11. The real exchange rate is currently roughly one-fifth above its average over the past ten and twenty years. In the long run, it is not unlikely that the real exchange rate will trend back to the average, and even temporarily overshoot it.

VIII Price developments and inflation forecast

Price developments

Inflation slows again after peaking in September

Inflation climbed in the summer and reached a high of 4.8% in September. Since then it has slowed down and had fallen to 4.2% in November. In particular, higher inflation in the autumn can be traced to the reversal of the decrease in grocery prices in the preceding months, as well as ongoing house price inflation until October. A turning point was reached in November with a decline in house price inflation and this trend is likely to continue in the months to come.

Although house price inflation slowed down in November, the housing market is still characterised by buoyant demand. Rising prices of domestic services, and the failure of the substantial appreciation of the króna to produce a corresponding reduction in goods prices, also testify to robust demand.

Core inflation indices reveal rather more underlying inflation than the headline consumer price index (CPI). At the beginning of November the twelve-month rise in Core indices 1 and 2 was 4.6% and 4.4% respectively. Part of the disinflation in recent months can therefore be attributed to volatile items.

Inflation in Q3/2005 measured 4.2%, in line with the Central Bank's forecast made in September, when the quarter was drawing to a close. In Q4/2005, inflation will probably be somewhat lower than was forecast in September, at around 4%.

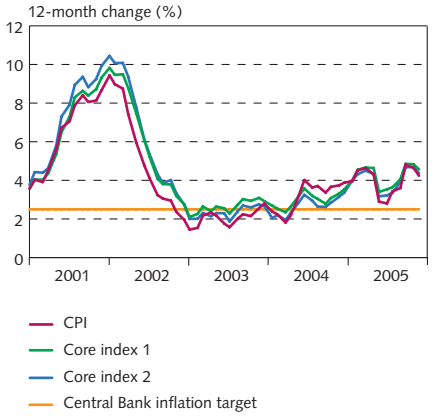
Some reduction in house price inflation in November ...

Housing prices have been the main driving force of inflation in Iceland over the past year. In November, the housing component of the CPI had risen 17.8% year-on-year. This caused the CPI to rise by 3.4 percentage points. House price inflation is mainly explained by higher market prices for residential housing, with a twelve-month increase of 33% in November. Month-on-month house price inflation has slowed down quite markedly in the Greater Reykjavík Area. In October, according to data from the Land Registry of Iceland, condominium prices there rose by 1½% month-on-month, but detached housing prices fell by 1%. According to Statistics Iceland, which uses a three-month moving average, the latest twelve-month rates were 34.9% and 45.9% respectively. Regional house price inflation has been much lower, at 20.6%, but contrary to the pattern in and around the capital it has been gaining pace in recent months, at an average of almost 3% month-on-month over the past four months.

... but services price inflation is gaining speed

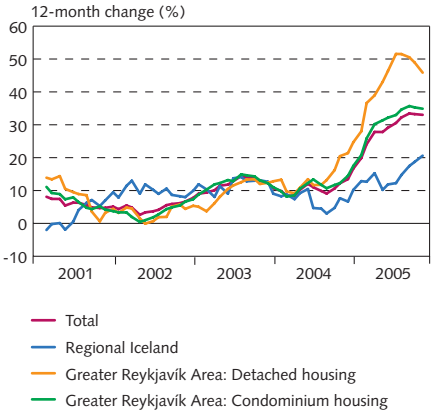
At the beginning of November, the twelve-month rise in prices of public services was 6.7%. This contributed 0.5 percentage points to the CPI. Over the same period, private services prices rose by 4.2%, raising the CPI by just under one percentage point.

Chart VIII-1
Inflation January 2001 - November 2005[1]



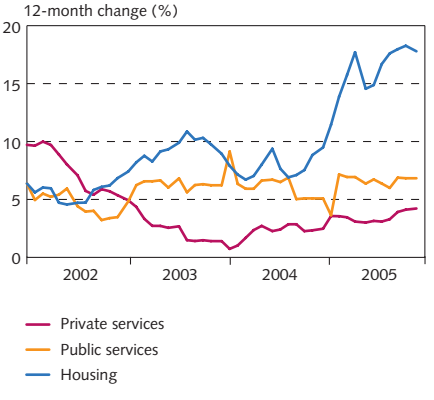
1. The core indices are compiled on the same basis as the CPI, with Core index 1 excluding prices of vegetables, fruit, agricultural products and petrol, and Core index 2 also excluding prices of public services.
Source: Statistics Iceland.

Chart VIII-2
Market prices of housing
March 2001 - November 2005



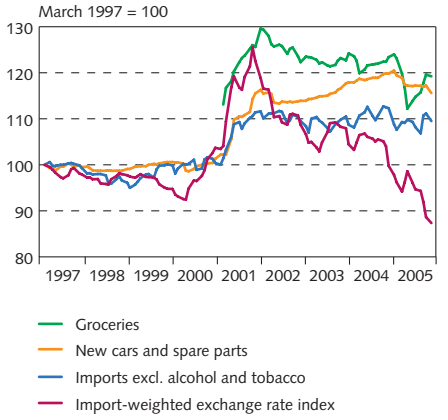
Source: Statistics Iceland.

Chart VIII-3
Prices of housing and services
January 2002 - November 2005



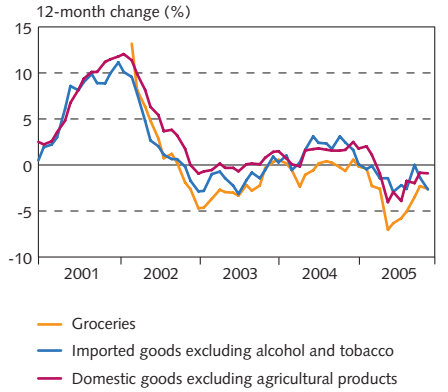
Source: Statistics Iceland.

Chart VIII-4
Import-weighted exchange rate and import prices March 1997 - November 2005



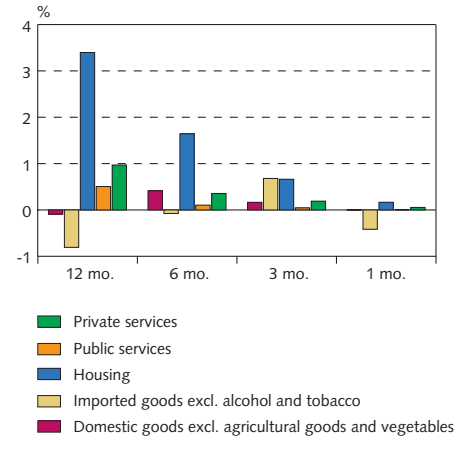
Source: Statistics Iceland.

Chart VIII-5
Goods prices January 2001 - November 2005



Source: Statistics Iceland.

Chart VIII-6
Components of the CPI in November 2005
Contribution to CPI inflation in past 1, 3, 6 and 12 months



Source: Statistics Iceland.

The currency appreciation in recent months had little effect on prices of imported goods

The króna was almost 17% stronger on average in the first three weeks of November compared with the monthly average for November last year. The exchange rate assumed in the current forecast is almost 6% higher than in the September forecast. Only a small part of the appreciation of the króna in recent months appears to have been passed through to prices of imported goods. Prices of imported goods excluding tobacco and alcohol decreased by 2.6% over the twelve months until November, with new motor vehicles down by 3.6%, food imports by 6.8% and other goods excluding petrol by 4%.

Basic consumption items such as petrol, oil and groceries track changes in the exchange rate more closely than goods with a slower turnover rate. Although petrol prices are sensitive to exchange rate movements, international price developments have outweighed the appreciation of the króna recently. The twelve-month rise in petrol prices is 4.5%. Prices of imported food, on the other hand, have fallen by almost 7%. Thus less than half of the appreciation of the króna has been passed through to food prices. Groceries, which mainly consist of food, fell by 2.5% over the same period. The price war that flared in the food market in the spring appears to be more or less over. It contributed to a drop in grocery prices of roughly 10% from January to May, which largely unwound over the period May-October. Prices at the beginning of November were 6.3% higher than at the height of the price war in May. Imported food prices were 6.6% higher.

Diverging inflation expectations since September

Market expectations of inflation, measured as the yield spread between indexed and non-indexed Treasury instruments with a maturity of eight years, came down to 3.5% in October and November after peaking at 3.8% in late September/early October. Financial market analysts have revised their inflation expectations downwards since September (see Box VIII-1). In September they forecast average inflation of 5.3% over the twelve months to January 2007 but now expect a rate of 4.4% over the same period. Over the twelve months to January 2008, analysts expect 4.2% inflation, up from 3.7% in their September forecasts. They forecast a rate of 3.9% one year ahead and 4.6% two years ahead.

Household inflation expectations are considerably higher than in September. On average, households expected twelve-month inflation of 3.8% then, but now foresee a rate of 4.7%. This change probably reflects higher inflation in the preceding months. Household expectations are therefore likely to have settled back after the slowdown in inflation over the past two months. A survey of the largest businesses in Iceland also reveals higher inflation expectations since February. In October, their management predicted 3.7% inflation one year ahead and a 6.7% rise in the CPI over two years, compared with forecasts of 3.6% and 6.0% respectively in February.

Inflation expectations have still not shown a substantial and unambiguous decline. They are still some way above the 2.5% target, but may not have been affected by the recent slowdown in inflation yet.

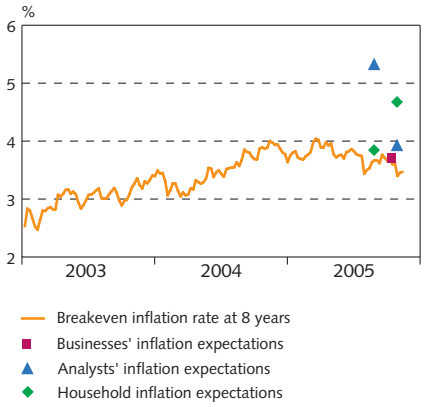
Inflation forecast

As mentioned earlier, the forecast presented here is an update to the macroeconomic and inflation forecast published in September. Since the September forecast, the Central Bank has raised its policy interest rate by 0.75 percentage points to the current rate of 10.25%. The króna has appreciated by 6% over the same period. Three inflation scenarios are presented. The baseline scenario is based on the technical assumption of an unchanged policy interest rate over the forecast horizon and an unchanged effective exchange rate, i.e. an index value of roughly 102. Two alternative scenarios are provided, based on variable interest rate and exchange rate paths.

The inflation outlook has improved slightly ...

The inflation outlook has improved slightly since September. Following the policy rate hike, real interest rates have gone up and the króna has appreciated. Global inflation prospects have worsened slightly since September, as was expected then. The tightening of the monetary stance gradually dampens domestic demand and the higher real exchange rate increasingly channels demand out of the economy. Thus the outlook is for less demand pressure over the forecast period than was expected in September.

Chart VIII-7
Inflation expectations
Weekly data January 7, 2003 - November 8, 2005



Household and businesses' inflation expectations are based on expectations over the next twelve months and analysts' expectations on twelve-month inflation to end-2006.
Source: Central Bank of Iceland.

Box VIII-1

Financial market analysts' assessments of the economic outlook

The accompanying table shows the survey responses of financial market analysts in mid-November. Participants in the survey were the research departments of Íslandsbanki, Kaupthing Bank and Landsbanki, and Economic Consulting and Forecasting.

On this occasion, analysts were asked specifically for the first time about the inflation outlook one and two years ahead. They were also asked to give a more detailed assessment of the Central Bank's policy interest rate path than before, i.e. on the timing of the policy rate cycle's peak and trough within the forecast horizon, and at what values.

The main changes from the survey in September is that analysts now forecast somewhat greater output growth this year and in 2006, as well as a smoother inflation path, a higher policy rate and a stronger króna.

Analysts expect higher inflation than in the Central Bank's baseline scenario

As in September, analysts expect inflation to remain some way above the 2.5% target across the forecast horizon. Their estimates for inflation over the year and year-on-year in 2005 are virtually unchanged and in line with the Central Bank's forecast, which is hardly surprising so late in the year. Over 2006 and 2007, forecasters expect inflation to average 4.4% and 4.2% respectively, while the Central Bank's baseline scenario is one percentage point lower in both instances. Analysts expect year-on-year inflation (between annual averages) of just under 4% in 2006, rising to 4½% in 2007, compared with the Central Bank's baseline scenario of 3.3% and 3.6%. It should be underlined that the Central Bank assumes an unchanged policy interest rate and exchange rate over the forecast horizon, while the analysts do not.

Opinions divided over the growth outlook

Analysts' forecasts for output growth in 2005-2006 have been revised upwards since September, but are unchanged for 2007. Individual forecasts diverge quite widely. On average they expect 6.3% growth in 2005 and 5.3% next year, falling to 1% in 2007. The Central Bank's output growth forecast is more even: 4.7% in the current year, 6.6% next year and 4.1% in 2007.

Comparison with the Central Bank's alternative scenarios

It should be reiterated that the Central Bank's baseline scenario inevitably diverges from the analysts' projections, because it assumes an unchanged policy rate and exchange rate across the forecast horizon. The Bank's scenario based on a variable interest rate and exchange rate shows higher inflation than the baseline scenario, although it is still lower than the average forecast by the survey respondents. They assume a greater depreciation of the króna than in the alternative scenario, which is based on uncovered interest rate parity derived from the differential between their forecast policy rate (see below) and foreign forward interest rates. There is less divergence between the analysts' forecast and an inflation path based on the same exchange rate path but an unchanged policy rate.

Forecasters expect the króna to depreciate less ...

Survey respondents have changed their assessments of exchange rate developments significantly and expect the króna to be stronger than they had forecast in September both one and two years ahead. They foresee an exchange rate index of 112 twelve months ahead and 124 after two years. The exchange rate index stood at just over 102 on November 16.

Overview of forecasts by financial market analysts[1]

	2005			*2006*			*2007*		
Average	*Average*	*Lowest*	*Highest*	*Average*	*Lowest*	*Highest*	*Average*	*Lowest*	*Highest*
Inflation (within year)	3.8	3.7	4.0	4.4	3.6	5.7	4.2	2.9	6.1
Inflation (year-on-year)	4.0	3.8	4.0	3.9	3.7	4.1	4.6	3.5	6.8
GDP growth	6.3	5.5	7.6	5.3	4.2	7.3	1.0	-0.9	2.2
	One year ahead			*Two years ahead*					
Inflation	3.9	2.9	4.6	4.6	3.1	7.5			
Effective exchange rate index of foreign currencies vis-à-vis the króna (Dec. 31, 1991=100)	112.0	107.0	115.0	124.0	118.0	133.0			
Central Bank policy interest rate	11.3	9.0	12.0	7.9	6.0	10.0			
Nominal long-term interest rate[2]	7.7	7.5	8.0	6.9	6.5	7.2			
Real long-term interest rate[3]	4.1	3.6	4.6	3.6	3.3	4.0			
ICEX-15 share price index	5,166	4,487	5,689	5,564	4,263	6,258			
Housing prices (12-month change)	5.8	3.0	10.0	6.0	3.0	10.0			

1. The table shows percentage changes between periods, except for interest rates (percentages) and the exchange rate index for foreign currencies and the share price index (index points). Participants in the survey were the research departments of Íslandsbanki, Kaupthing Bank and Landsbanki, and Economic Consulting and Forecasting.
2. Based on yield in market makers' bids on non-indexed T-notes (RIKB 13 0517). 3. Based on yield in market makers' bids on indexed HFF bonds (HFF 15 0644).

Source: Central Bank of Iceland.

... but a greater increase in the policy rate ...
The Central Bank raised its policy interest rate by 0.75 percentage points to 10.25% on October 4. Analysts expect further hikes and forecast an average rate of more than 11% one year ahead, moving back to just below 8% after two years. They were also asked to forecast the peak and trough of the policy rate over the next two years. The majority of respondents expect the policy rate to peak before mid-2006 at roughly 12%, reaching a trough in the second half of 2007 in the range 7½-10%. One respondent diverged quite sharply from the rest by forecasting a peak of 10.75% shortly, followed by a gradual decline towards 6% at the end of 2007.

... and modest asset price rises
On November 16, the ICEX-15 share index stood at almost 5,000, so respondents do not expect a great rise in equity prices over the next year, but rather slower increases than have been witnessed recently. The increase two years ahead is forecast at 12%. One forecaster believes that equity prices will drop and has put this view forward for some time.

Finally, respondents were unanimous about modest increases in real estate prices over the next two years, since the market has already begun to cool quite markedly. None expects real estate prices to decline.

Offsetting this, productivity growth over the forecast horizon has been revised downwards. Productivity growth commonly slows down in later stages of the business cycle. Nonetheless, it is still expected to remain close to the historical average over the forecast horizon. Combined with a slight rise in labour costs which is partly the result of the recent review of wage settlements, reduced productivity growth will drive up unit labour costs faster than was forecast in September. Unit labour costs are now forecast to rise by 5½% this year and just under 6% in 2006, by over 1 percentage point more than previously forecast. In 2007, unit labour costs are expected to grow more slowly, but the rate of growth will remain some way above what is compatible with the 2.5% inflation target in the long run.

... but assuming an unchanged policy rate, inflation will stay some way above target over the forecast horizon
While the stronger króna and smaller output gap will dampen inflationary pressure, higher unit labour costs have the opposite effect. Initially the appreciation of the króna will outweigh them, however, so the outlook is for a somewhat lower rate of inflation until mid-2006 than was forecast in September.

In the baseline scenario, inflation is forecast at just over 3% one year ahead, compared with 3.7% in the same quarter in September (4.2% over the corresponding one-year horizon). The inflation outlook two years ahead shows less improvement, because rising unit labour costs will weigh heavier later in the forecast period. Inflation is now forecast at just above 3½% two years ahead, while in September

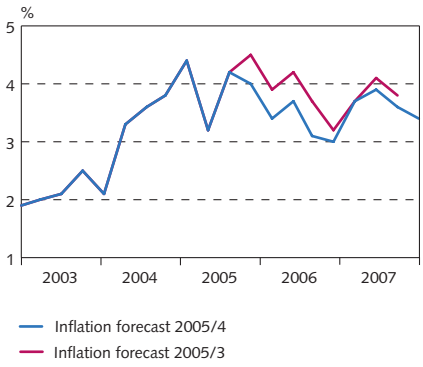
it was 3.8% in the same quarter (4.1% over the corresponding two-year horizon).

Thus the outlook is still that inflation will remain above the 2.5% target over the forecast horizon, although it will be closer at the end of the period than previously forecast. If the forecast assumptions hold – which in fact seems rather unlikely – the outlook is that the target will be attained in 2008.

Forecasts with variable interest rates and exchange rate

Since *Monetary Bulletin* December 2004, the Central Bank has presented an alternative inflation scenario based on a variable interest rate and exchange rate, in addition to its baseline scenario which assumes an unchanged interest rate and exchange rate across the forecast horizon. The main aim of the baseline scenario is to describe the way that the Central Bank considers developments are most likely to unfold if it keeps the policy rate unchanged and the exchange rate remains constant. It therefore represents a useful indicator of the need to alter the monetary stance. A forecast based on a variable interest rate and exchange rate, on the other hand, can give a more realistic picture of probable developments, especially in the present climate. The real exchange rate is probably well above a sustainable level for the long run, while the inflation outlook in the baseline scenario is unfavourable even though it assumes that the exchange rate will remain at a historical high for the entire forecast horizon. The obvious inference is that the inflation target will not be attained unless the policy rate is raised over the forecast period.

Chart VIII-8
Inflation forecast based on variable interest rate and exchange rate



Source: Central Bank of Iceland.

Financial market analysts expect a higher policy rate and weaker króna than assumed in the baseline scenario

The Central Bank does not forecast its own interest rates, but uses market agents' and analysts' expectations for interest-rate developments to calculate an inflation path based on a variable interest rate and exchange rate. In September the Central Bank opted not to use implied forward interest rates as a gauge of the expected policy rate over the forecast horizon, because they were not felt to give a realistic picture of financial market expectations. Increasing issues of króna-denominated Eurobonds have compounded this problem since September and indirectly have had a significant impact on price formation of nominal short-term bonds, as discussed earlier. Instead, a policy rate path is calculated from financial market analysts' forecasts for the development of the policy rate two years ahead, as shown in Chart III-4 on p. 15 and discussed in Box VIII-1. They forecast that the policy rate will peak in mid-2006 at close to 12%, then gradually come down to just under 8% at the end of 2007. This curve implies an average policy rate of 11½% next year and 9% in 2007, instead of 10.25% for both years as assumed in the baseline scenario. Thus the policy rate in the alternative forecast would be higher than in the baseline scenario next year and until spring 2007.

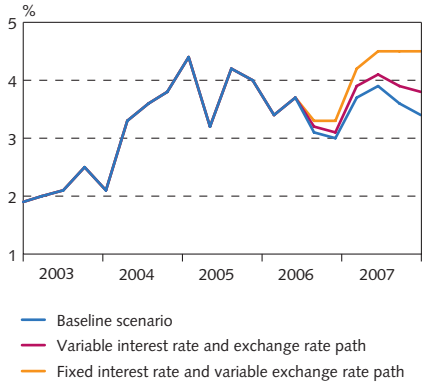
An exchange rate path can then be calculated for the inflation forecast, based on the spread between the above policy rate path and

a foreign implied forward rate, using uncovered interest rate parity.[12] On the basis of this analysis, the króna will gradually depreciate over the forecast horizon and the exchange rate index will be close to 115 at the end of 2007, a relatively modest reduction compared with the financial market analysts' forecasts in Box VIII-1.

Significantly poorer inflation outlook if the króna depreciates given an unchanged monetary stance ...

In addition to a forecast based on a variable interest rate and exchange rate, it is useful to consider an inflation path based on an unchanged policy rate from the day of the forecast, as in the baseline scenario, but calculating an exchange rate path using uncovered interest rate parity, as in the second inflation scenario. Such a scenario gives an idea of the inflation development should the króna begin to slide in step with interest rate parity, but with no policy response from the Central Bank. As Chart VIII-9 shows, inflation would be considerably higher than in the baseline scenario. At the end of the forecast period inflation would be 4½% instead of 3½%. The monetary stance is less restrictive in this model than in the other two, because the króna is weaker and the real interest rate is lower. Output growth is therefore higher than in the baseline scenario, fuelling the output gap and driving inflation up even further.

Chart VIII-9
Inflation scenarios



Source: Central Bank of Iceland.

... but a higher policy rate counters the effect of the weaker króna

A comparison of inflation paths calculated first from a variable interest rate and exchange rate, and second from an unchanged policy rate but variable exchange rate, underlines the role that the policy rate plays in constraining inflation. A higher policy rate constrains growth and the output gap, which eases domestic inflationary pressure. Inflation at the end of the forecast horizon will be half a percentage point lower than in the forecast with a fixed policy rate but depreciating currency, at just below 4%.

A depreciation of the króna will result in a poorer inflation outlook than in the baseline scenario even if the policy rate is raised

A comparison of the baseline scenario with one based on a variable interest rate and exchange rate shows how the policy rate and a depreciation of the króna have contrary effects on inflation. Nonetheless, the policy rate hike assumed in this model does not manage to offset the impact of the weaker króna over the period. Inflation will therefore be higher than in the baseline scenario, despite the higher policy rate. This could suggest that the policy rate needs to be raised by more in real terms than is assumed in the scenarios with a variable exchange rate and interest rate, in order to counteract the depreciation that the interest-rate differential with abroad suggests is embedded in market expectations, even if the depreciation is relatively modest compared with the expectations of some financial market analysts.

12. The foreign rate is calculated using foreign traded-weighted forward rates, but allowing an exchange rate risk premium.

Risk profile

Greater risk of higher inflation than in the baseline scenario

The inflation forecast is always fraught with uncertainty. Since developments are unlikely to unfold exactly as in the baseline scenario, it is vital to take into account the entire risk profile in assessing the inflation outlook two years ahead.

The current risk profile is broadly comparable with that of the Central Bank's recent forecasts. However, labour market risk has diminished after national wage settlements were reviewed and not revoked. This review has been incorporated into the baseline scenario. Exchange rate developments remain the chief risk. The real exchange rate is even higher than in September, and therefore even further from being compatible with external balance. Since September, the risk that a sharp depreciation over the forecast horizon will drive up the inflation rate has tilted further to the upside, especially if this takes place while substantial macroeconomic imbalances remain. Recent foreign issues of króna-denominated bonds exacerbate the exchange rate risk, especially when the bonds approach maturity.

The risk of higher-than-expected inflation is balanced against the risk that long-term real interest rates could rise by more than was forecast in September. Higher mortgage rates, increased supply of new housing and greater uncertainty about the quality of mortgage collateral could put downward pressures on house prices over the period, but prices are assumed to rise modestly in nominal terms in the

Table VIII-1 Main asymmetric uncertainties in the inflation forecast

Uncertainty	*Explanation*	*Inflationary impact*
Private consumption	The impact of lower long-term interest rates and easier credit access, and the potential effect of rising wealth on consumption, could be underestimated	Risk of underestimated demand pressures and thereby of underestimating inflation
	Increased indebtedness could curtail private consumption growth beyond the baseline scenario	Risk of overestimated medium-term demand and thereby of overestimating inflation
	Higher mortgage interest rates could cool the housing market faster than forecast, and subdue private consumption growth	
Exchange rate developments	Wide current account deficit and expectations of increasing inflation in the coming years could exert downward pressure on the króna	Risk of the króna depreciating and thereby of underforecasting inflation
Fiscal policy	The fiscal stance could be easier than forecast, especially with forthcoming municipal and general elections	Risk of underestimated demand pressures and thereby of underforecasting inflation
	The impact of planned tax cuts on future income expectations could be underestimated, so their demand impulse could be correspondingly greater	
Asset prices	Asset prices could fall, reducing private consumption later in the forecast period	Risk of overestimated demand pressures and thereby of overforecasting inflation
Global economy	Foreign interest rates could rise faster and by more than assumed, increasing external debt service beyond the baseline scenario	Risk of overestimated demand growth and thereby of overforecasting inflation

Central Bank risk profile	*One year ahead*	*Two years ahead*
Monetary Bulletin 2005/2	Symmetric	Upward
Monetary Bulletin 2005/3	Upward	Upward
Monetary Bulletin 2005/4	Upward	Upward

forecast. Such a development would not only have a direct deflationary effect, but could also dampen private consumption by more than is expected in the baseline scenario. Other uncertainties have changed little since September.

All told, the forecast risk one year ahead is broadly unchanged since September, but has edged upwards two years ahead. According to the baseline scenario, this implies that there is a slightly higher risk of inflation exceeding the forecast one year ahead, and a considerably higher risk two years ahead. Table VIII-1 summarises the main asymmetric uncertainties in the forecast and Chart VIII-10 presents the estimated confidence intervals compared with the September forecast.

Somewhat higher probability of attaining the target over the horizon if the policy rate remains unchanged

Table VIII-2 shows the Bank's assessments of the probability of inflation being in a given range, based on the above risk profile. Although the probability that inflation will be close to the target has increased somewhat since September, it still remains very low if the policy rate remains unchanged. For example, there is less than 20% probability that inflation will lie in the range 2-3% two years ahead and less than 50% probability of it lying in the range 1-4%.

Table VIII-2 Probability ranges for inflation over the next two years

	Inflation				
Quarter	*Under 1%*	*In the range 1% - 2½%*	*Under 2½%*	*In the range 2½% - 4%*	*Over 4%*
Q4/2005	< 1	< 1	< 1	40	60
Q3/2006	< 1	21	21	65	14
Q3/2007	< 1	9	10	38	52

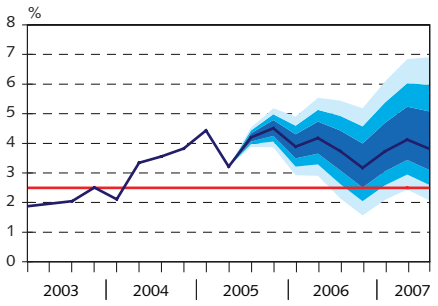
The table shows the Bank's assessments of the probability of inflation being in a given range, in percentage points.

It is important to keep in mind that both the baseline scenario and the risk profile are based on an unchanged policy interest rate over the forecast horizon. Indeed, the main task of monetary policy is to ensure that the economic scenario implied by the forecast and the main risks does not materialise. In this respect, the baseline scenario itself and its confidence intervals present an unrealistic picture of the inflation outlook, by ignoring Central Bank policy responses.

Chart VIII-10

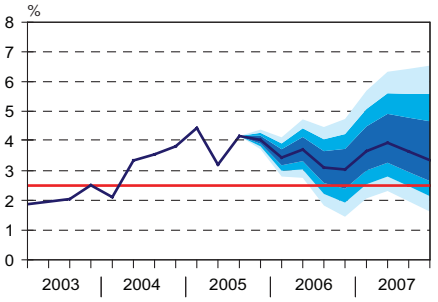
Previous Central Bank inflation forecast – baseline scenario (in *Monetary Bulletin* 2005/3)

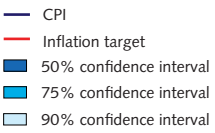
Forecasting period: Q3/2005-Q3/2007



Current Central Bank inflation forecast – baseline scenario

Forecasting period: Q4/2005-Q4/2007





The charts present the estimated confidence intervals of the forecast for the next two years. The entire shaded area shows the 90% confidence interval; the two darkest ranges show the corresponding 75% confidence interval and the darkest range shows the 50% confidence interval. The uncertainty increases over the horizon of the forecast, as reflected in the widening of the confidence intervals. Uncertainty in the forecast is considered to be somewhat less than is shown by historical forecasting errors, which reflect volatile inflation in the period 2001-2002 immediately after Iceland moved on to an inflation target. A detailed description of how the probability distribution is calculated is given in Appendix 3 to Economic and monetary developments and prospects, *Monetary Bulletin* 2005/1.

Source: Central Bank of Iceland.

IX Monetary policy

Policy rate hike in September proved effective

The 0.75 percentage-point rise in the Central Bank's policy interest rate which was announced in *Monetary Bulletin* 2005/3 at the end of September proved more effective than many policy rate hikes over the past year or more. As described in *Monetary Bulletin* at the time, the Central Bank was concerned that unrealistic expectations that the policy rate would peak this year and decrease soon after were delaying the transmission of monetary policy along the yield curve. These expectations about the policy rate became increasingly awkward as inflation expectations built up. Taken together, they implied that monetary policy lacked credibility in the view of market agents and other analysts, who apparently doubted the Central Bank's commitment to its inflation target in the medium term.

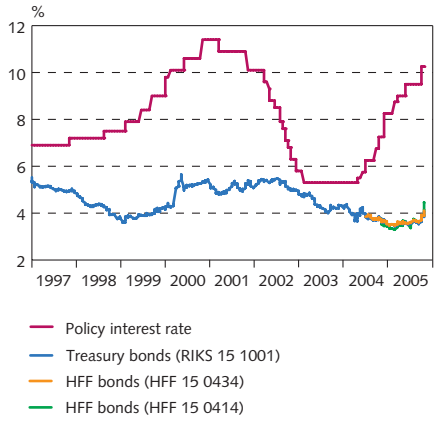
Before the September hike, the policy tightening had still left long-term indexed interest rates almost unaffected. If monetary policy was to reach one of the most overheated parts of the economy – i.e. surging private consumption – the transmission of policy rate changes to long-term indexed bond yields was crucial. The September hike and, equally, the firm message that the monetary stance would be kept tight were intended to speed up the transmission process. This appears to have succeeded. The average yield on Housing Financing Fund (HFF) bonds with a maturity of ten years was roughly 0.85 percentage points higher in the first half of November than in September. The rising yield has already been passed through to mortgage interest rates after the last auction of HFF bonds. A substantial rise in real interest rates could eventually have a significant impact on the housing market and on domestic demand in general.

The exchange rate and interest rate channels of monetary policy are interlinked

Besides shifting the entire yield curve upwards, the September policy rate hike had a fairly strong impact on the exchange rate of the króna. In the first half of November, the króna had appreciated by more than 5% on average since September. In the current climate of exceptional overheating in Iceland and low interest rates abroad, the exchange rate is bound to be the main channel for transmission of monetary policy, at least initially. While this is undesirable in various respects, it is unavoidable. The Central Bank has little control over which channel monetary policy is transmitted through at any given time.

The various channels of monetary policy transmission – via the yield curve, the exchange rate, expectations, etc. – are all interlinked. Developments since September demonstrate the close relation between the exchange rate and interest rate channels. There are indications that the recent rise in required yields on HFF bonds is partly the result of profit-taking by foreign investors in light of the strength of the króna. In this way, policy rate changes are partly passed through to long-term indexed bond rates via the exchange rate channel.

Chart IX-1
Central Bank policy rate
and yields on indexed long-term bonds
Weekly data January 8, 1997 - November 8, 2005



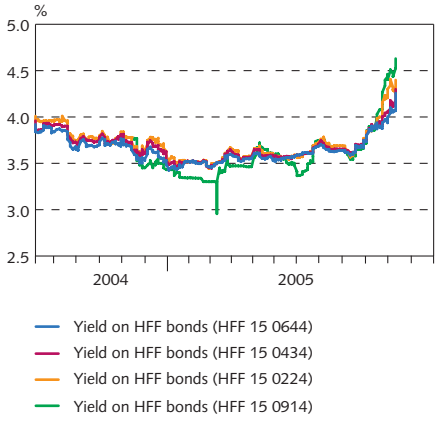
Source: Central Bank of Iceland.

Issues of króna-denominated Eurobonds channel monetary policy transmission even more through the exchange rate

As discussed in detail in a separate article in this edition of *Monetary Bulletin*, increasing issues of króna-denominated Eurobonds have some impact on the transmission mechanism. In particular, they dampen the impact of the policy rate on nominal interest rates of instruments of a similar maturity, temporarily forcing the exchange rate up. On the other hand, a stronger króna presents an incentive for investors such as domestic pension funds to invest in foreign securities or realise gains from their portfolios denominated in domestic currency. In the long run this offsets the secondary impact of offshore issues on the exchange rate and interest rates. Moreover, an appreciation of the króna should gradually subdue demand for foreign credit, which also counteracts the impact of the international issues. An appreciation increases the current account deficit as well, putting a downward pressure on the real exchange rate in the long term.

Chart IX-2
Yield on HFF bonds

Daily data July 8, 2004 - November 11, 2005



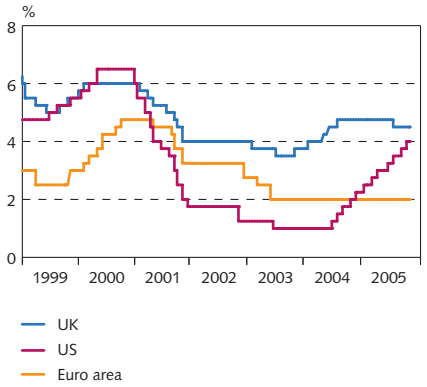
Source: Central Bank of Iceland.

Other countries have not experienced greater exchange rate volatility due to international bond issues in their currencies ...

Foreign issues of króna-denominated bonds are a new departure and have been gaining huge momentum in recent months. The experience of other countries such as New Zealand does not suggest that offshore issues in their currencies necessarily fuel instability, as has been feared in some quarters. As long as these issues end up in dispersed portfolios of long-term investors and not on trading books or perhaps with investors who have underestimated the exchange rate risk, the risk of volatility when investors suddenly decide to close their positions appears modest. Insofar as the bond issues serve to deepen the FX and securities markets, they make a positive contribution to economic developments in Iceland.

Chart IX-3
Policy interest rate in the US, UK and euro area

Daily data January 4, 1999 - November 11, 2005



Source: EcoWin.

... but in the current climate they do exacerbate uncertainties about the transmission of monetary policy

This is not to say that the development is absolutely positive or free from risks in the current climate. As pointed out above, the predominance of the exchange rate channel for transmitting monetary policy is unfortunate in many respects. Monetary policy tightening hits export sectors hard but initially does little to rein in private consumption – on the contrary – until the impact has been felt through the entire yield curve. The resulting widening of the current account deficit requires sustained heavy capital inflows to maintain the strength of the currency. International bond issues enable a larger deficit to be funded over a longer period than before, which could leave the economy more exposed to changes in external conditions later on. For example, a jump in US and European interest rates might cause a sudden aversion to bonds in minor currencies among foreign investors. Historically, such developments have triggered sharp exchange rate movements and currency crises in economies with fixed exchange rate regimes. If a wide current account deficit is largely funded by capital inflows linked to issues of króna-denominated Eurobonds – which bolster the currency for longer than would otherwise be the

case – a simple reduction in issuance could call for a rapid exchange rate adjustment, even if the foreign investors did not sell their bonds when the currency weakened, but held on to them until maturity. In many cases, the maturity date will coincide with a period when the currency is particularly susceptible to a slide.

Some disinflation likely over the coming months, but a rapid exchange rate adjustment poses a strong inflationary threat

The baseline scenario presented in Section VIII shows a somewhat lower inflation path than the scenario published in *Monetary Bulletin* in September. Both the interest rate and the exchange rate are higher than assumed in the September forecast, and both serve to reduce demand pressures. On the other hand, the forecast increase in unit labour costs has been revised upwards. The inflation outlook is still unfavourable, even if the exchange rate remains as strong as at present.

However, the assumption of a constant exchange rate appears quite unrealistic in the long run. Historically, such a high real exchange rate has always been short-lived. The current account deficit is heading for a record this year. Thus when the economy starts to cool, the króna is likely to come under intense pressure. A fairly wide interest-rate differential with abroad will be required to counter this pressure until domestic demand has readjusted and the current account deficit has narrowed. The inflation scenarios based on a variable interest rate and exchange rate, which are also presented in Section VIII, give some indication of the nature of the problem that monetary policy faces over the coming years.

Higher interest rates abroad could affect the transmission mechanism significantly in the years to come

Financial conditions abroad have been very favourable in recent years. In fact they have been detrimental for monetary policy implementation in Iceland, as pointed out above, even if they have helped to counter inflation in the short run by contributing to an appreciation of the króna. A turnaround is likely over the next few years. The global economic recovery has been broadening and interest rates are already inching up, although in the euro area the ECB minimum bid rate has still not changed and interest margins are still low. Other things being equal, the interest-rate differential with abroad will narrow, putting further pressure on the króna. Iceland's soaring debt in recent years will amplify the macroeconomic effect. If short-term interest rates in Europe begin to rise soon at a measured pace, as seems fairly likely at the moment, this could speed up the monetary policy pass-through and result in a more balanced transmission via the interest rate and exchange rate channels. On the other hand, a delayed but subsequently faster path of monetary policy tightening in Europe coupled with widening interest margins and less forthcoming credit supply, after the króna has already begun to weaken, could have adverse consequences, by amplifying the depreciation and fuelling inflation and a broad economic contraction at an inopportune time.

The real estate market will be crucial for economic developments in the near term ...

House price inflation has slowed sharply in the Greater Reykjavík Area in recent months and prices of detached housing went down in October. Regional house prices have in fact gained pace, but overall house price inflation is slower. When the higher required yields on HFF bonds are passed through in full to mortgage interest rates, the housing market can be expected to cool even further. In addition, the banks have formally and informally brought their mortgage ceilings back down. Both factors will cool the market for larger properties in particular, as has already emerged.

The housing market is likely to be more sensitive than before to interest rate movements for two reasons. First, market house prices are probably farther from long-term equilibrium than ever before. Second, since maximum loan-to-value ratio and mortgage ceilings have been lifted, the size of mortgage loans will be increasingly restricted by an assessment of a homebuyer's debt service capacity rather than by other limitations. Thus a fall in real estate prices cannot be ruled out in the next few years, even within the forecast horizon.

... and will radically alter the composition of inflation

A swift deceleration in twelve-month house price inflation is foreseeable in the next few months due to the base effect as the months when the housing component of the CPI soared last winter drop out of the twelve-month figures. If the housing market cools earlier than is currently foreseen, it will have a significant impact on the medium-term inflation outlook and cause even faster house price disinflation. Two main processes will be at work. First, owner-occupied housing inflation, which has been the main driver of CPI inflation over the past year, will slow sharply. Second, lower house prices will subdue demand, narrow the output gap and thereby reduce inflation. These disinflationary effects will offset the inflationary impact of the weaker króna.

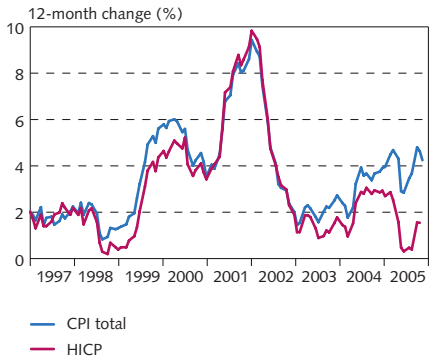
The housing component of the CPI is not crucial for monetary policy implementation

The Central Bank has been criticised for ignoring the composition of inflation in its monetary decisions. It has been pointed out that, measured in terms of the EU's Harmonised Index of Consumer Prices (HICP), inflation has been below target and headline inflation is largely explained by higher house prices, which in one sense are asset prices and should therefore not be a major concern of monetary policy. Such criticism is based on a fundamental misunderstanding of the factors determining the Central Bank's interest rate decisions. Policy rate rises do not target past inflation, but the future rate of inflation. Past house price inflation, however, does provide a valuable indicator of future inflation and has an impact on it as well.

The monetary stance has tightened significantly since September ...

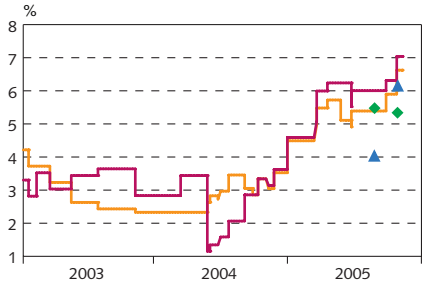
The September policy rate hike was passed through in full to real rates and policy transmission has made considerable progress along

Chart IX-4
CPI and HICP
Monthly data January, 1997 - November, 2005



Source: Statistics Iceland.

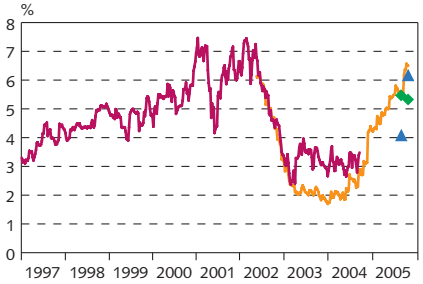
Chart IX-5
Real policy rate
January 3, 2003 - November 11, 2005



Central Bank policy interest rate in real terms according to:
- Inflation forecast one year ahead
- Inflation forecast two years ahead
- Analysts' expectations
- Household expectations

Household expectations twelve months ahead were surveyed at the end of August/beginning of September and at the end of October/beginning of November. The September value shows analysts' expectations for twelve-month inflation to end-2006 and the later value is for twelve months ahead.
Source: Central Bank of Iceland.

Chart IX-6
Real policy rate
January 8, 1997 - November 8, 2005



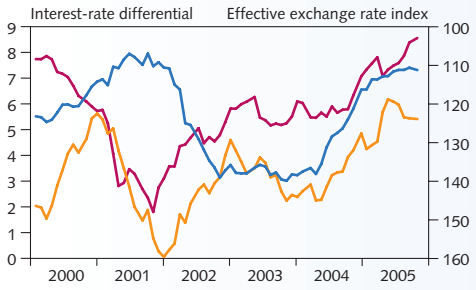
Interest rate in real terms according to:
- Two-year breakeven inflation rate
- Eight-year breakeven inflation rate
- Analysts' inflation expectations
- Household inflation expectations

Household expectations twelve months ahead were surveyed at the end of August/beginning of September and at the end of October/beginning of November. The September value shows analysts' expectations for twelve-month inflation to end-2006 and the later value is for twelve months ahead.
Source: Central Bank of Iceland.

Box IX-1
The exchange rate of the króna and the interest-rate differential with abroad

Chart 1
Interest rate and exchange rate
February 2000 - October 2005

At end of month



Nominal interest rate spread (left hand axis)
Real interest rate spread (left-hand axis)
Effective exchange rate index
(right-hand axis, decending values)

Sources: EcoWin, Central Bank of Iceland.

According to standard economic theory, a rise in the monetary policy rate affects the exchange rate of the domestic currency in two ways. One is the direct impact caused by the wider interest-rate differential with abroad making domestic securities more attractive to investors. Demand for the domestic currency increases, causing it to appreciate. The other effect is indirect, whereby higher interest rates may cause households to expect lower inflation in the future, which in turn lowers expectations of a future currency depreciation.

The Chart shows the interest-rate differential between Icelandic and foreign twelve-month interest rates on money market bills and the effective exchange rate of the króna since the beginning of 2000. It shows that interbank rates rose in Iceland until the differential reached 8 percentage points towards the end of 2001. However, the króna depreciated at the same to a low in November 2001. Why did the króna depreciate then in spite of a sizeable rise in interest rates?

This development is easier to understand by adjusting the interest-rate differential for the difference in inflation between Iceland and other countries, i.e. by examining the real rather than nominal interest-rate differential. It transpires that although interest rates went up considerably in Iceland in 2000 and 2001 as a result of rises in the Central Bank's policy rate, they did not keep pace then with the surge in inflation in Iceland, which was much greater than among its main trading partner countries. Thus the interest-rate differential with abroad narrowed in real terms at the same time as it widened in nominal terms and the króna depreciated.

As this example shows, a distinction must be made between the part of the greater nominal differential that implies a widening in real terms and the part reflecting a higher rate of domestic inflation than in other countries. In the former case, demand for domestic securities increases and the króna generally appreciates, all other things being equal, as has happened from the beginning of 2004 to the present day. Over this period, the interest-rate differential has widened from roughly 2½ percentage points to roughly 5½ percentage points and the króna has appreciated by almost 16%.[1]

In the second case, while the yield on domestic securities is admittedly higher than before, higher domestic inflation increases the probability that the appreciation of the króna will unwind later, since the real exchange rate appreciates if the nominal rate remains unchanged, which will ultimately drive the nominal exchange rate back down to rebalance the competitive position of domestic production vis-à-vis foreign production. Expectations of an eventual depreciation create investor aversion towards the króna, for fear of subsequent exchange-rate losses. They therefore seek to close their positions in domestic securities, despite higher nominal yields, and the króna depreciates.

The long-term exchange rate development of a currency seems easier to understand by examining its interest-rate differential in real rather than nominal terms. However, it should be remembered that short-term forecasting of exchange-rate developments has proved

1. Using real interest rates calculated from the difference in contemporary inflation between Iceland and its main trading partners.

extremely difficult and they often appear to bear little relation to the underlying economic fundamentals.[2] Although economists consider the above theories to be based on insights that give an accurate picture of the forces driving exchange rates, the Chart also shows that other factors may be at work, and sometimes the exchange rate trend runs contrary to simple theoretical predictions. This can be seen, for example, from exchange rate developments in 2000, when a sizeable depreciation took place in spite of a considerable rise in interest rates at the same time. Capital inflows in connection with investments and fluctuations in investors' general confidence also exert an effect. One consequence of such swings may be that real interest rates go up at the same time as the currency depreciates.

2. See, for example, What determines the exchange rate of currencies?, *Monetary Bulletin* 2001/4, Box 3, 24-26.

the yield curve, as explained in Section III. Also, the appreciation of the króna following the policy rate hike tightens the stance further. Expectations about the development of the policy rate have changed significantly, especially among financial market analysts, and should speed the pass-through along the yield curve.

... but the inflation target calls for even more tightening

The inflation and macroeconomic forecasts and risk profile described in Section VIII indicate that the monetary stance needs to be tightened still further if the inflation target is to be attained. However, it is extremely difficult to envisage what policy rate will be sufficient to stabilise inflation. While a sizeable depreciation of the króna is likely over the next two years, the pace of this adjustment if the policy rate is left unchanged is highly uncertain, as are the impact of policy rate changes on exchange-rate developments and the impact of the depreciation on the price level – given that the appreciation in recent months has only passed through to domestic prices to a limited extent.

This is the uncertainty that the Central Bank, businesses, households and market agents have to face and it cannot be dispelled, no matter how transparent monetary policy is. Nonetheless, the Central Bank emphasises its commitment to the inflation target, however developments unfold. Monetary easing which would leave inflation persistently far above target would not soften the foreseeable medium-term adjustment. In an economy with an extremely high level of both household and business debt – the bulk of which is either price-indexed or exchange rate-linked – an over-accommodative monetary policy and currency depreciation, redoubled by the resulting inflation, would be likely to cause as much contraction as high interest rates. The damaging effects of such a policy would be greater in the long run.

Hence, price stability will probably require a substantial interest-rate differential between Iceland and its main trading partner countries while the economy is readjusting after the current episode of overheating. How wide the differential needs to be will largely be

determined by how successfully inflation and inflation expectations can be reined in. As outlined in Box IX-1, it is the real rather than the nominal interest-rate differential that affects the exchange rate of the króna. This underlines the importance of maintaining a sufficiently tight stance until macroeconomic imbalances have been reduced.

Preannounced, fixed dates for interest rate decisions will enhance monetary policy transparency

In order to enhance the transparency of its monetary policy, the Board of Governors of the Central Bank of Iceland has agreed to adopt a formal calendar for its interest rate decisions. Six scheduled dates for interest rate decisions have been announced for next year. Three will coincide with the publication of *Monetary Bulletin*. Accordingly, the Board of Governors will give a detailed explanation of its decision on the policy rate – irrespective of whether it is changed or left unchanged – on six occasions in 2006. This arrangement will give the Central Bank the opportunity to deliver its policy message more frequently in order to influence market expectations and contribute to more efficient transmission of monetary policy. Nonetheless, the formal calendar will not prevent the Central Bank from changing its interest rates more frequently if it deems this necessary. Publication dates of *Monetary Bulletin* and interest rate decision dates in 2006 are shown in Table IX-1.

Although three editions of *Monetary Bulletin* will be published as of 2006 instead of the previous four, the Central Bank does not consider that this will hamper the transparency of monetary policy, especially since scheduled interest rate announcement dates will be introduced at the same time and the Board of Governors' decision and their rationale for it will be announced in a press release on the dates when *Monetary Bulletin* is not published. Each edition of *Monetary Bulletin* will contain a complete inflation and macroeconomic forecast. Publication of four editions a year has proved difficult to organise in a way that takes full advantage of quarterly economic data such as the national accounts. The Central Bank of Iceland undertakes very extensive publication activities for its size and these have been increasing over the years.[13] For example, *Financial Stability* now

Table IX-1 Publication dates for *Monetary Bulletin* and interest rate announcement dates in 2006

Date of interest rate decision	*Commentary published in*	*Weeks since previous interest rate decision announcement*
January 26	Press release	8
March 30	*Monetary Bulletin* 2006/1	9
May 18	Press release	7
July 6	*Monetary Bulletin* 2006/2	8
September 14	Press release	10
November 2	*Monetary Bulletin* 2006/3	7

13. Norges Bank of Norway and the Banco Central de Chile, for example, publish three inflation reports a year, and the Bank of Canada two monetary policy reports, with two short updates between them.

Box IX-2 Amendment to the joint declaration of the Government of Iceland and Central Bank of Iceland from March 27, 2001

On November 11, 2005 the Prime Minister of Iceland and Board of Governors of the Central Bank of Iceland signed an agreement on an amendment to the wording of item 11 in their joint declaration on an inflation target and a change in the exchange rate policy from March 27, 2001. This now reads as follows:

11. 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.

1. In other respects the declaration from March 27, 2001 is unchanged. It was published in *Monetary Bulletin* 2001/2 and is also published, as amended, on the Central Bank's website under the heading "Inflation target/Declaration on inflation target".

appears as a separate publication but was previously a chapter in *Monetary Bulletin*. What is crucial is that the analysis in *Monetary Bulletin* should present a clear picture of the Central Bank's viewpoints. The necessary amendment to the joint declaration between the Central Bank of Iceland and Government of Iceland, in order to reschedule publication frequency, is described in Box IX-2.

Article 24 of the Central Bank of Iceland Act No. 36/2001 states that the Board of Governors lays down internal rules on the preparations of, arguments for and presentation of its monetary policy decisions. Rules in accordance with this provision were set in January 2002 and published in *Monetary Bulletin* 2002/1. In connection with the decision to introduce a calendar for announcing interest rate decisions as of 2006, these rules are under review. It is aimed to set new rules before the end of 2005 and make them public.

Financial markets and Central Bank measures[1]

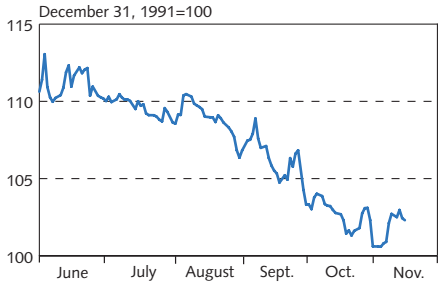
Exchange rate and interest rates on the move

Issues of króna-denominated bonds by foreign borrowers in international markets led to an appreciation of the króna. The Central Bank announced a 0.75 percentage-point rise in its policy interest rate on September 29, at the same time as Monetary Bulletin was published. This measure also strengthened the króna. Interest rates on indexed long-term bonds went up after the policy rate hike. Issues of króna bonds in international markets have driven up demand for medium-term bonds and long-term borrowing in the interbank market for domestic currency, with corresponding pressure on interest rates. In 2006 the Central Bank will reduce its purchases of foreign currency in the interbank market from the level that has been maintained since September. It will mostly purchase currency to meet Treasury requirements and only on a much smaller scale to maintain the foreign exchange reserve. A number of central banks have raised their policy rates recently and others have hinted strongly that hikes may be pending. Iceland's equity market calmed down after prices were buoyant for most of the year, but trading picked up in mid-November and the ICEX-15 index began to climb rapidly once again.

Issues of króna bonds caused a currency appreciation

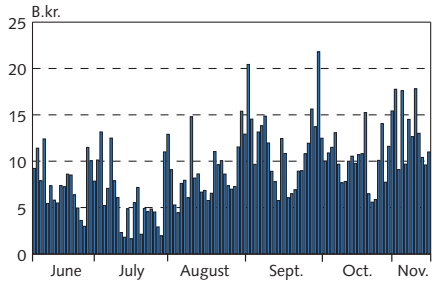
Foreign borrowers issued more than 114 b.kr. of króna bonds in international markets from the end of August, when issues began, and until mid-November.[2] Buyers had to procure the krónur to pay for the bonds in the Icelandic market, which duly affected the exchange rate. Exchange rate impacts of specific transactions are difficult to measure, but because of their character, frequency and information given about them, the impact of króna Eurobond issues is exceptionally visible. The Central Bank monitors movements in the exchange rate of the króna and has generally been able to discern quite reliably when buyers of the bonds have acquired krónur for them, and likewise when their impact wanes. This is very interesting information, because specific events in an FX market can rarely be isolated so decisively. On average, a 3 b.kr. purchase of krónur appears to lower the exchange rate index by 0.44. The standard deviation of the 16 measurements involved was 0.18. The impact became noticeably more pronounced over time, probably because market agents had difficulties in offloading repeated foreign currency inflows under conditions when the currency was appreciating. From August 24 to November 11 the króna appreciated by almost 8%, which presumably is largely explained by króna bond issues. Exchange rate developments are shown in Chart 1. Turnover in the FX market surged after króna Eurobond issues began. For example, turnover in September alone amounted to 255 b.kr., more than one-quarter of total annual turnover in 2004. Turnover so far this year has already broken the previous annual record and by November it was approaching 1,700 b.kr. The development of FX market turnover is shown in Chart 2. Turnover in the interbank currency swap market has picked up slightly and measured 14 b.kr. from the beginning of September to November 16, which is 38% of the total since the beginning of the year.

Chart 1
Exchange rate index of the króna
Daily data June 1 - November 16, 2005



Source: Central Bank of Iceland.

Chart 2
Turnover on the interbank foreign exchange market
Daily data June 1 - November 16, 2005

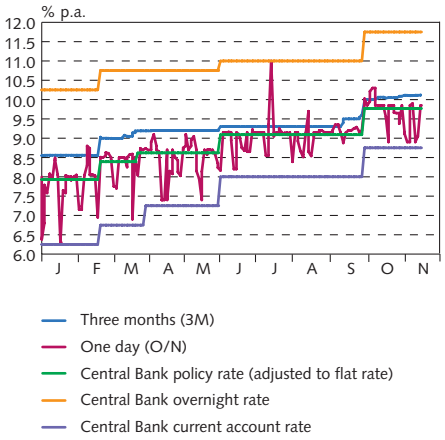


Source: Central Bank of Iceland.

1. This article uses data available on November 16, 2005.
2. For a detailed analysis see the article by Thorvardur Tjörvi Ólafsson in this edition of *Monetary Bulletin*, 55-83.

Chart 3
Interest rates in the interbank market and Central Bank policy rate

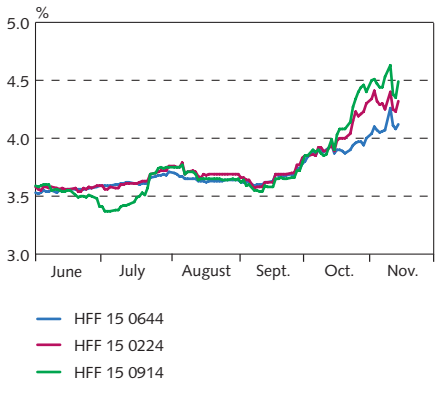
Daily data January 4 - November 16, 2005



Source: Central Bank of Iceland.

Chart 4
HFF bonds – real yield

Daily data June 1 - November 16, 2005



Source: Central Bank of Iceland.

Policy interest rate hike

The Central Bank of Iceland raised its policy interest rate by 0.75 percentage points at the end of September. The scale of the hike seemed to take market agents by surprise – market analysts had forecast an increase of 0.25 to 0.5 percentage points. Also, the wording of the Bank's message about a tight monetary stance seemed firmer than market agents had expected. In the wake of the policy rate hike, the króna strengthened and interest rates moved up, especially at the shortest end of the interbank market for domestic currency, where they broadly matched the policy rate increase. Rates at the longest end rose by less, however, which can be explained by hedging of international issues of króna bonds and the small size of the Icelandic market. The development of Central Bank and interbank market interest rates is shown in Chart 3.

Significant rise in HFF bond yields

Ever since the Housing Financing Fund introduced its HFF bonds in the middle of last year they have carried a low required yield relative to historical yields on indexed securities in Iceland. For a while, HFF bond yields dropped below 3.5%, indicating that the market was driven not by domestic pension funds, which are obliged to fulfil certain criteria in their investments, but by other investors. In September, HFF bond yields began to climb and reached a peak in the shortest class, which matures in 2014. The cause of this rise is unclear, but tighter liquidity might be a contributing factor, partly caused by the large Treasury position on its account with the Central Bank. Another possibility is that investors were drawn to non-indexed bonds by market expectations of low inflation over the next few months. The development of HFF bond yields can be seen in Chart 4.

Is the yield curve a reliable indicator?

Interest rates express the price of money. As a rule, market expectations can be read from interest rates over different time scales. Supply and demand in the market are balanced at the point where the market's view can be read. However, this does not apply in all cases, because market failures can distort the balance and thereby the point where market expectations are actually reflected. Iceland's thin market, for example, can lead to market failures that complicate normal interest rate formation. One instance was when the National Debt Management Agency waived market-making obligations for a class of Treasury bills which ended up almost entirely in the hands of a single buyer at an auction – it was obvious that normal price formation was impossible and market making could not function. Another example is the development of the shortest interest rates on Treasury notes (RB 2007) and the longest rates in the interbank market for domestic currency. Heavy demand from investors who were hedging exchange rate and interest rate risks for issuers of króna Eurobonds drove interest rates on these bonds/loans down below credible levels. By mid-November, the nominal stock of issued króna Eurobonds exceeded 114 b.kr., the bulk of them with a maturity of one to three years. Central Bank sources suggest that some 85-90% of the issues are hedged

against movements in the króna vis-à-vis other currencies, but the market value of the most suitable T-note class for hedging is only 26 b.kr. While other hedging formats are doubtless used, it is clear that the thin Icelandic market is currently forcing down interest rates over specific lengths, more or less regardless of expectations about pricing and interest rates.

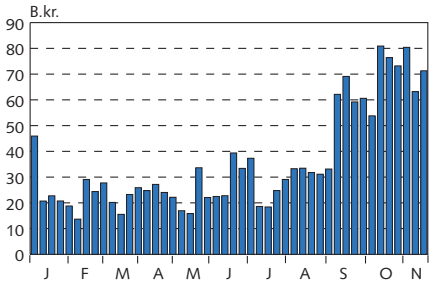
The Central Bank's foreign reserves

In recent years the reference level for Iceland's foreign reserves has been the average three-month level of merchandise imports over the past five years. The minimum size of the reserves is reviewed annually. However, the appreciation of the króna has eroded the reserves' value in domestic currency terms, although it has changed little in foreign currency terms. A new assessment of the foreign reserves reveals that only a slight increase is necessary and the Central Bank plans to purchase foreign currency for that purpose next year. As the agent for the Treasury's foreign currency transactions, the Central Bank will probably purchase foreign currency for the equivalent of 25 b.kr. this year to meet its requirements. The Treasury has systematically been reducing its foreign debt, including allocating a large share of the proceeds from the privatisation of Iceland Telecom towards prepayments. Also, the Treasury has made preparations in connection with foreign debts that mature next year and plans to purchase foreign currency for an additional 10 b.kr. then, to retire as much as possible. Debt service will amount to 3.5 b.kr. next year and extra foreign currency will be purchased to meet it. Total purchases to meet Treasury requirements and add to the reserves are therefore estimated at 5 m. US dollars per week in 2006, equivalent to 16 b.kr. over the year at the current exchange rate. The volume of purchases will be reduced from the level in effect from September to the end of this year, i.e. from 2.5 m. US dollars five days a week to 2.5 m. US dollars twice a week. Currency purchases will be arranged along the same lines as before, i.e. the Central Bank will make its purchases before the markets open in the morning.

Impact of the Treasury

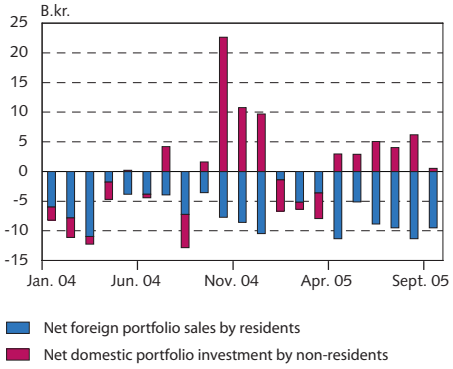
Changes in Treasury liquidity often have a considerable effect on Icelandic money markets. The Treasury's liquidity position is strong at present, even if the domestic-denominated share of the privatisation proceeds from Iceland Telecom, which was deposited with the Central Bank, is not included. As a consequence, roughly 60 b.kr. have been tapped out of the money markets which banks have to borrow from the Central Bank in the form of repo agreements, as shown in Chart 5. This enhances the impact of the policy rate instrument and sharpens the effect of monetary policy measures. The banks' financing costs rise and they are forced to respond by raising their interest rates, as has proved to be the case. Average interest rates in the interbank market for domestic currency (expressed as yields) have been higher than the policy rate yield for all lengths except overnight, nine-month and twelve-month loans; the impact of króna Eurobonds on the longest maturities has already been discussed above.

Chart 5
Outstanding stock of Central Bank repos
Weekly data January 4 - November 15, 2005



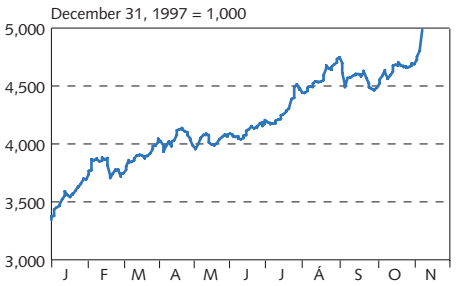
Source: Central Bank of Iceland.

Chart 6
Capital flows from cross-border securities trading
January 2004 - September 2005



Source: Central Bank of Iceland.

Chart 7
The ICEX-15 equity price index
Daily data January 4 - November 16, 2005



Source: Iceland Stock Exchange.

Changing patterns of portfolio investments

Residents have made sizeable foreign portfolio investments in the recent term. In 2004, net foreign portfolio investment amounted to 76 b.kr. From January to the end of September this year, the figure has been 66 b.kr. Residents have been net buyers every month since the beginning of 2004. Non-residents' investment in domestic portfolios have followed a different pattern with alternating net sales and purchases. Over the last four months of 2004, non-residents made net investments of 45 b.kr. in Icelandic securities. Net sales of 11 b.kr. followed in Q1/2005, and net investment of 22 b.kr. since then. Chart 6 shows capital flows in connection with portfolio investment by residents and non-residents. It presents currency inflows in connection with domestic portfolio investment by non-residents as a positive value and outflows in connection with foreign portfolio investment by residents as a negative value. Over the whole period in question, i.e. since the beginning of 2004, there has been an outflow of roughly 100 b.kr. in connection with cross-border portfolio investments.

Interest rates rise abroad

The Bank of Canada raised its key policy rate (overnight rate target) by 0.25 percentage points on October 18. The Federal Reserve also continued its measured hikes by raising its federal funds rate to 4% on November 1. In Norway, Norges Bank raised its sight deposit rate by 0.25 percentage points the following day. Nonetheless, the interest-rate differential between Iceland and abroad has widened because of the Central Bank's own policy rate hikes. Measured in terms of three-month debt instruments in the interbank market, the interest-rate differential widened from 6.44 percentage points at the beginning of September to 7.01 percentage points in mid-November. In terms of five-year Treasury notes, however, it narrowed from 4.34 percentage points to 4.22 percentage points.

Equity prices rally

After a relatively calm period in the equity market from mid-September to mid-November, the ICEX-15 index began to climb again when it gained almost 4% on November 16. Since the beginning of this year, ICEX-15 has risen by more than 48%. Chart 7 shows the development of equity prices since the beginning of the year. Trading on November 16 was very brisk at 19 b.kr. Most of the largest listed corporations have published their nine-month interim results and they have tended to report profits above the expectations of market analysts.

Thorvardur Tjörvi Ólafsson[1]

Króna-denominated Eurobond issues

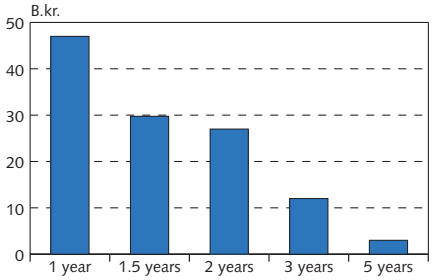
The origin of króna-denominated Eurobond issues can be traced to buoyant demand for domestic credit, which has pushed up interest rates and caused the króna to appreciate at the same time as interest rates in international markets are low and investors are prepared to enter new territory in search of higher yields. The following article traces the development of offshore bond issuance in local currencies since the early 1980s and describes the structure of the króna-denominated Eurobond issues and their driving forces, with a look at New Zealand's informative experience in this field. An assessment is made of the impact of issuance on Iceland's capital markets and interest rates, the exchange rate of the króna and effectiveness of the Central Bank's monetary policy. It concludes by focusing on the immediate future with an attempt to explain the possible impact of issuance on economic developments.

Introduction

Outstanding króna-denominated Eurobond issues amounted to 120 b.kr. at the time of writing in mid-November – more than the total stock of Treasury instrument issues in the domestic market. While such issuance is an innovation in Iceland it is well known in international markets and testifies to increased integration between Icelandic and international capital markets, where massive growth in such transactions has been seen in recent years.[2] However, these issues coincide with heavy imbalances in the Icelandic economy and the need for a tight monetary stance. Their impact on capital markets, the economy as a whole and the effectiveness of Central Bank monetary policy need to be assessed. It is important to examine other countries' experience of offshore issuance while also taking into account a number of distinctive Icelandic features and their possible effect.

Chart 1

Volume of króna Eurobond issuance by maturity



Sources: Reuters, Central Bank of Iceland.

International development of offshore issues in minor currencies[3]

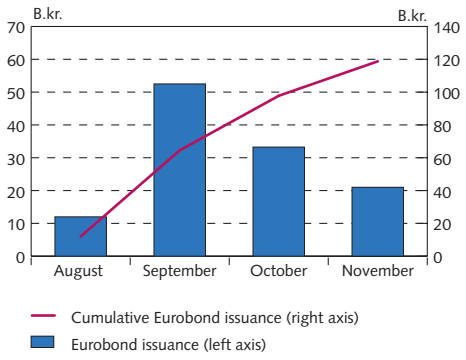
In the early 1980s, two trends converged in international bond markets. First, many governments launched reforms aimed at liberalisation of capital markets. Some sought to attract foreign investors to support the development of domestic capital markets. Second, investors in core markets began to look farther afield in search of higher yields and new ways to diversify their portfolios. This was shortly after the oil cri-

1. The author is an economist at the Central Bank of Iceland Economics Department. He would like to thank Haukur Benediktsson, Thórarinn G. Pétursson, Magnús Fjalar Gudmundsson, Tómas Örn Kristinsson, Gudmundur Kr. Tómasson, Jakob Gunnarsson, Gudrún Sóley Gunnarsdóttir and Helga Rún Helgadóttir for their assistance in preparation of this article. The author also thanks Anella Munro, Senior Economist at the Economics Department of the Reserve Bank of New Zealand, for her very constructive feedback on New Zealand's experience of Eurokiwi bonds, and Yüksel Görmez, Manager of the Financial Department of the Central Bank of the Republic of Turkey, for assistance with procuring information about the experience of Turkey and other countries. The author alone is responsible for any errors or omissions. The opinions expressed in this article are those of the author and do not necessarily represent the views of the Central Bank of Iceland.

2. The structure of króna-denominated Eurobond issues is described in Box 1.

3. This section is largely based on Herrera-Pol (2004). The term "minor currencies" is used here for all currencies apart from the main five (US dollar, euro, yen, sterling and the Swiss franc), in which 97% of bonds issued in international markets are denominated (see Cohen, 2005).

Chart 2
Króna Eurobond issuance
August-November 2005
Monthly and cumulative volume



Sources: Reuters, Central Bank of Iceland.

ses of the 1970s. Many countries faced severe inflation and monetary policy was widely tightened. Lured by the resulting high interest rates, foreign investors were quick to seize the opportunity when countries in Australasia and Scandinavia (apart from Iceland) broke the ice and enabled offshore issuance of bonds in their currencies.

Over the past twenty years, more countries have joined the group that enable offshore issuance of bonds in their currencies, see Table 1. Spain, Portugal and Greece were the first to follow the Scandinavians' lead when aiming at accession to the EU, where full freedom of capital movements was due to enter into force in 1993. A number of Eastern European countries, after transforming into market economies in the beginning of the 1990s, and South Africa, were in the next group to open their markets to offshore bond issuance in their currencies around 1995. Most recently several Asian and South American countries, along with Turkey, have followed suit. Iceland is the latest name on the list.

International financial institutions have played a key role in opening new markets for offshore bond issuance in minor currencies. The World Bank has been a pioneer in this field, with almost sixty years'

Table 1 Launch of offshore bond issues in domestic currencies 1985-2005

c. 1985-1989	*1990-1994*	*1995-1999*	*2000-2003*	*2004-2005*
Australia				
New Zealand				
Denmark				
Ireland				
Norway				
Sweden				
Finland				
				Iceland
Spain				
	Portugal			
	Geece			
	Hungary			
	Czech Republic			
	Slovakia			
	Poland			
				Turkey
Hong Kong				
		Taiwan		
		Philippines		
		South Korea		
		Singapore		
				India
				Thailand
				PR China
				Malaysia
		South Africa		
			Mexico	
			Chile	
			Columbia	
				Peru

Sources: Herrera-Pol (2004), Görmez and Yilmaz (2005), Central Bank of Iceland.

experience of bond issuance to fund its own lending.[4] The reason is that the high credit rating of institutions such as the World Bank makes their bonds a secure investment option even if they are denominated in unusual currencies. Especially for new investors who appreciate being able to isolate credit risk, i.e. the risk of an issuer failing to honour its obligations, from currency risk. New channels are also opened up for domestic investors to increase their portfolio diversification.

Australasia

Australia and New Zealand made a large-scale overhaul of their capital markets in the early 1980s, both applying tight monetary policies at that time to counter high rates of inflation. One aspect of liberalisation was to allow offshore issuance of bonds in their own currencies, and *Kiwi* and *Kangaroo bonds*[5] soon became highly popular among smaller European investors.[6]

One crucial reason for the popularity of these bonds was the existence of developed swap markets in these two countries. They had evolved because both private and public companies earned sizeable shares of their income in foreign currency and sought to limit currency risk through swaps, and the banking system was sufficiently developed to respond to such demand. Banks also used swaps to fund fixed-interest household mortgage lending.

Since the early 1990s, offshore issuers have also been able to issue bonds in the domestic market in these two countries, leading to substantial growth in foreign investor participation. New Zealand's experience is discussed in more detail later in this article.

Scandinavia

In the early 1980s the Nordic countries (with the exception of Iceland) allowed approved international financial institutions to issue bonds in their domestic currencies. Most of these bonds were bought by foreign investors in Europe and Japan, who were attracted by the high interest rates in Scandinavia at the time.

Southern Europe

Spain, Portugal and Greece were the next group of countries to allow offshore bond issuance denominated in their currencies. These countries' domestic bond markets were thin when they began the EC accession process and one reason that international financial institutions launched issues in their currencies was to contribute to their development.

4. There is nothing new about the World Bank pioneering an international bond issue – it made the first cross-currency swap in 1981 (Görmez and Yilmaz, 2005).
5. Bonds denominated in Australian and New Zealand currencies and issued in the Japanese market are known as *Uridashi*.
6. In a climate of fully deregulated cross-border capital movements, there is effectively nothing to prevent offshore bond issues denominated in participating countries' currencies. Deregulation was introduced in the EC (EU) on January 1, 1993 and likewise for cross-border capital movements to and from Iceland at the beginning of 1995. Countries where cross-border capital movements are restricted can exert considerable control over offshore issuance because of its reliance on domestic counterparties. Hence the use of the term "allow offshore issuance in their own currencies" in the above discussion.

Spain led the way with its *Matador bonds* in pesetas, with a clear policy of establishing Madrid as the country's financial centre. A number of requirements were set to ensure access for banks in the city, listing of bonds on Madrid Stock Exchange and development of a secondary domestic market for them. Portugal and Greece set fewer requirements when they authorised issuances of the respective *Caravela and Marathon bonds* and the secondary market for them has been in London.[7]

Eastern Europe

In the mid-1990s, Hungary, the Czech Republic, Slovakia and Poland opened up their capital markets to foreign investors as a step in their transformation from centralised to Western market economies. At the time they were already aiming for EU membership. International financial institutions led the way in Hungary with *Euroforint bond* issues, while the other three allowed offshore corporate issuance in their currencies from the outset.

Issuance has boosted the capital market infrastructure in these countries by adding depth, extending maturities and contributing to involvement of international institutional investors. Nonetheless, Eurobond maturities have been short, with small-scale and dispersed end-investors. It should be pointed out that issuers, banks and end-investors have firmly supported these countries and been more inclined to take risks by virtue of their EU membership and cultural links with the region.

Asia

Ratings agencies have invariably ranked Hong Kong in the top bracket for economic freedom. Not surprisingly, it was one of the first countries to allow offshore issuance in its currency in the mid-1980s. The Philippines, South Korea and Taiwan followed suit a decade later, but issuance was slow off the mark because of the Asian financial crisis of 1997-1998. Singapore opened its markets in 1998.

Last year the process continued when international institutions launched issues denominated in Indian rupees. Thailand, China and Malaysia have declared an interest in allowing international institutions into their markets, where savings levels are higher than the Western norm.

South Africa

Rand bonds have been very popular among European investors since their market debut in 1995. Like New Zealand and Australia, South Africa already had a developed market for currency swaps.

Latin America

Offshore bond issuance in Latin American local currencies has grown substantially in the past few years, especially in the currencies of Chile,

7. Icelandic króna bonds have not yet been nicknamed. The author of this article proposes *Euroviking bonds.*

Columbia, Mexico and Peru. Major structural reforms in the wake of the debt crisis of the 1980s have bolstered stability across much of the continent and domestic saving has surged, for example with the introduction of pension savings schemes. Bond issuance by international institutions in these countries' currencies has provided domestic investors such as pension funds with new options for portfolio diversification and increased foreign investment in domestic bond markets.

Turkey

International Turkish lira bond issuance began at the end of last year and the internal revaluation of the lira on January 1, 2005 paved the way for trading with them in Euroclear and Clearstream. In the space of just over a month (figures based on February 4, 2005), issuance amounted to 1.5 b. lira, or 1.2 b. US dollars. Görmez and Yilmaz (2005) draw a comparison with Hungary and Poland: the outstanding stock of Euroforint bonds on December 10, 2004 amounted to just over 6 b. US dollars and the Polish bond stock was even larger at 11 b. US dollars. By comparison, the Icelandic króna bond stock was almost 2 b. US dollars at the time of writing in mid-November.

Many of the issuers are the same as for króna bonds, e.g. Rabobank Nederland, Kommunalbanken, the Republic of Austria and the World Bank. Like króna bonds, lira maturities are short, at 2.7 years on average.

Currency choice in international bond issuance

International institutions such as the BIS and the IMF have taken a greater interest in bond issuance in minor currencies recently and both have addressed them specifically in 2005.

BIS research shows that there is more issuance in a given currency when (i) it is strong relative to historical averages, (ii) long-term interest rates in that currency are high relative to those available in other major currencies and (iii) home country demand for funding is high (Cohen, 2005). Precisely such conditions have been in place in Iceland, some emerging markets and the developed Australasian countries in recent years. Elsewhere, international bond issuance has contracted because the interest-rate differential with abroad has altered since it was launched.

Table 2 shows the fall in yields on many bonds in various currencies since international issuance began. In many cases, interest rates no longer exert the same attraction as when the authorities were tightening their monetary policies to counter high rates of inflation. Nonetheless, the market for bonds in minor currencies has doubled over the past ten years: capital markets in many emerging markets have strengthened, international trading practices have widely become the norm, financial products have become more efficient and foreign investors have become more involved in domestic markets, even though in most countries they only represent a small fraction of total market participants.

Table 2 Falling yields on international bonds in minor currencies

		First international bond issue in currency	*Yield on Treasury bonds of a similar maturity (%)*
Currency	*Year*	*Yield (%)*	*September 2004*
Portuguese escudo	1988	13.50	4.23
Greek drachma	1994	17.50	3.51
Czech krona	1995	10.50	3.91
S. Korean won	1995	12.15	3.81
Taiwan dollar	1995	6.28	2.26
South African rand	1995	15.00	7.62
Slovak krona	1996	12.00	4.25
Polish zloty	1996	17.00	7.52
Singapore dollar	1998	4.50	1.59
Mexican peseta	2000	15.88	2.58
Chilean peseta	2000	6.60	2.92
Turkish lira[1]	2004	15.00	19.25
Icelandic króna	2005	8.50[2]	9.30[3]

1. Yield on Turkish Treasury bonds based on January 2005.
2. The weighted average interest rate on Eurobond króna issues until November 14 is 8.44%.
3. Yield on RIKB 07 as of November 14, 2005.

Sources: Herrera-Pol (2004), Görmez and Yilmaz (2005), Central Bank of Iceland.

Turkey and Iceland provide two recent examples of Eurobond issuance, which has surged in both cases. Kiwi bond issuance has also been at a historical peak since 2002, as tight monetary policy has widened the interest-rate differential with abroad and caused the New Zealand dollar to appreciate, backed up by robust domestic credit demand. These countries are highlands in an otherwise exceptionally flat interest rate landscape in international capital markets. This is why international investors have turned to Iceland as they seek out higher yields.

The global search for higher yields

Króna Eurobond issues must be seen in the context of recent trends in international capital markets towards low interest rates, plentiful liquidity and low interest margins on both high-risk and low-risk instruments. The quest for yields has led investors into uncharted territory and there are many signs of heightened appetite for risk. This quest is reflected in increased investment in (i) FX markets, (ii) domestic bonds denominated in minor currencies, especially of the emerging markets of Latin America and Asia, and (iii) increased international issuance of bonds denominated in minor currencies.

FX market investments

One investor focus has been on foreign exchange markets where the interest-rate differential with abroad and indications of clear trends in exchange rate movements for some currencies have tempted investors to borrow in a currency where interest rates are low and invest in a higher one, gambling that the interest-rate differential will outweigh possible exchange rate movements over the term of the loan. This pat-

tern of investor behaviour is clearly revealed in increased daily global FX market turnover, which according to BIS data grew by 57% from 2001 to 2004. A massive increase in FX market transactions between banks and other financial institutions also testifies to the popularity of this approach. Such trades grew by 78% over the same period, according to the BIS (BIS, 2005a).

Investments in minor-currency bonds

Another target for investors seeking new yields is bonds denominated in unconventional currencies rather than in US dollars, euros, yen or sterling. Investors have increased their portfolios of residents' bond issues as well as international market issues in minor currencies. Both have happened in Iceland.

The share of non-residents' holdings of Treasury bonds has been growing in many emerging markets and in some cases has doubled over only two years. In Mexico, non-residents' Treasury bond portfolios grew from virtually zero in 2003 to around 10% this year. In Turkey the share increased from 10% to 20% over the same period, and in Poland from 15% to almost 25% (IMF, 2005b). Foreign investors currently own some 30% of Icelandic Treasury bonds, compared with less than 5% when an international promotion drive for them was launched in 2001 (NDMA, 2005).

International issuance of bonds in minor currencies has also increased in the past few years, as discussed above. Emerging markets in South America and Asia dominate the field. Prior to that, *original sin* was commonly regarded as an obstacle for emerging markets to issue bonds in local currencies.[8]

Bonds denominated in emerging market currencies are issued in international capital markets by international institutions or entities in the home country, in particular the state or major corporations. Uruguay and Columbia, for example, as well as Mexican and Brazilian banks, have issued bonds in local currencies for the equivalent of more than 1 b. US dollars (IMF, 2005b). Governments in emerging markets see important benefits in international issuance of bonds in local currencies, since this spreads the currency risk between investors and sovereign authorities, instead of the latter shouldering the whole risk as was the case when their debt was almost entirely denominated in foreign currencies. This was a key factor underlying original sin.[9] Likewise, investors are attracted to these instruments which open access for them to high-yielding markets while trading remains within an international regulatory framework and without a risk of the illiquidity which is often present in local markets (IMF, 2005b).

The trend reaches Iceland

Given the findings of the BIS, the first króna-denominated Eurobond issue in August 2005 is very understandable. Iceland combines a wide

8. Eichengreen, Hausmann and Panizza (2003) coined the term "original sin" to describe the inability of emerging market economies to issue bonds in their own currencies.

9. "Original sin" constitutes part of an extensive economic literature emphasising the balance sheet approach to financial crisis. Rosenberg et al. (2005) provide a good overview of this literature and its importance for emerging markets.

interest-rate differential with abroad, a strong local currency which is well above its historical average, and apparently unlimited domestic credit demand. These factors make króna bond issues attractive to investors and the increased capital inflows were probably welcomed by domestic capital markets, where demand for credit runs high. Market expectations of ongoing Central Bank policy rate hikes following the strong message delivered in recent editions of *Monetary Bulletin* will probably spur further issuance.

Domestic credit demand

While króna Eurobond issues must be seen in the context of the quest by international investors for higher yields, as discussed above, domestic factors are no less important a consideration, especially surging credit demand and the global integration of Icelandic financial activities.

Iceland's economic transformation

Major structural changes have been made in the Icelandic economy over the past two decades. They include trade liberalisation, more effective fiscal policies, privatisation, membership of the European Economic Area, financial sector reforms and the introduction of a monetary policy framework based on a floating exchange rate and inflation target. Coupled with favourable external conditions, these factors have contributed significantly to the turnaround in growth which has taken place over the past decade.[10]

The financial sector has felt the full thrust of these reforms. Financial institutions have witnessed substantial expansion with strong returns on equity, rapid asset growth and abundant liquidity. Soaring volume of lending and a surge in foreign debt, however, are the main risks in bank operations.

According to the latest annual report by the Financial Supervisory Authority (FME) for the period July 1, 2004 to June 30, 2005, total assets of the commercial banks and largest savings banks amounted to 900 b.kr. on a consolidated basis in 2001, equivalent to 138% of GDP. By the end of June 2005, however, total assets had swollen to 4,530 b.kr., which is almost five times GDP. Over the same period, book equity value of the commercial banks and largest savings banks grew from 56 b.kr. to 332 b.kr., or from 8.6% to 36% of GDP (FME, 2005).

The three commercial banks have exploited their new financial strength and favourable conditions for procuring capital in international markets to invest and expand abroad. The point has been reached where roughly half of the three largest banks' assets are held by their foreign subsidiaries, and similarly some 50% of their net operating income derives from activities outside Iceland.[11]

10. GDP growth has exceeded 3% every year since 1996, apart from a contraction in 2002, and has averaged 3.7%. All forecasting agencies expect Iceland's robust growth to continue this year and in 2006.

11. Discussed further in *Financial Stability* 2005, the Central Bank of Iceland's first financial stability report to be published in a separate edition.

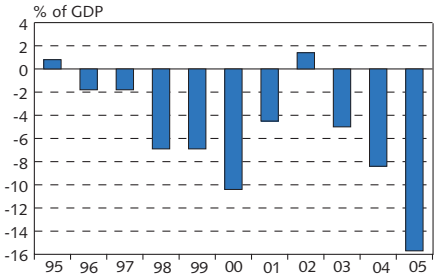
Finally, in 2004 the banks began providing mortgage loans at much lower interest rates than had been on offer before, which has caused lending to surge, as discussed below.

Macroeconomic imbalances

Heavy imbalances characterise the present economic situation in Iceland, with a simultaneous record current account deficit, historically high real exchange rate, soaring house price inflation, mounting debt by households, businesses and the economy as a whole, and inflation above target. Private consumption has also surged over the past two years, driven more by increased debt than by growth in disposable income, as pointed out in *Monetary Bulletin* in September. A massive increase in investment has also taken place, especially in the aluminium and power sectors, but the outlook is for a slowdown next year and a further drop in 2007.

Investments for the aluminium industry, movements in the credit market and upbeat sentiment have generated huge domestic demand growth, with a resulting build-up in inflationary pressures. The situation is strongly reflected in seemingly unlimited demand for credit, causing household and business lending to surge.

Chart 3
Current account balance 1995-2005[1]



1. Central Bank forecast for 2005.
Source: Central Bank of Iceland.

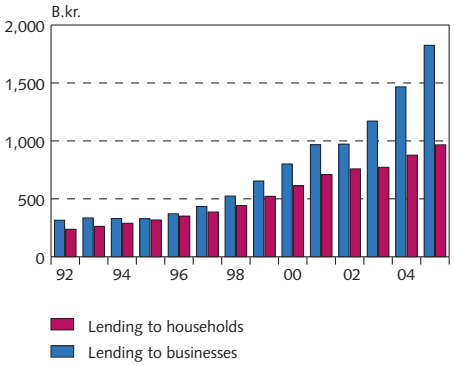
Rapid lending growth

Lending by deposit money banks (DMBs) has been growing by leaps and bounds in recent years and has still not been reined in by tighter monetary policy, see Chart 4. In September 2005, the twelve-month increase in domestic lending was more than 59%, after adjustment for estimated exchange rate and CPI movements. Lending to households increased by almost 118% and to domestic businesses by more than 42% (Central Bank of Iceland, 2005b). Part of the surge in domestic lending over the past twelve months is explained by the commercial banks' entrance into the mortgage loan market – new borrowing was largely deployed on prepayment of existing loans from the Housing Financing Fund (HFF). Foreign lending has also soared, from 7% of total DMB (parent) lending at the end of June 2003 to 20% at the end of June 2005 (FME, 2005).

This surge in lending has put upward pressure on interest rates, both through greater upward pressure on the supply of króna funding and because the resulting inflation has pushed up nominal interest rates, not least due to a tightening of the monetary stance with policy rate hikes. However, international interest rates have remained low, so the interest-rate differential with abroad has been rapidly widening.

Chart 4
Lending to households and businesses 1992-2005[1]

Outstanding lending to households and businesses at year-end



1. Classifications were revised in 2003. Figures for 2005 are for the end of June.
Source: Central Bank of Iceland.

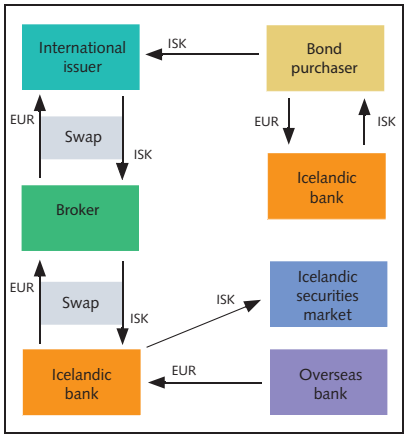
Drivers of bond issuance

Króna Eurobond issues have therefore been spawned by buoyant domestic credit demand, which has driven up interest rates and the exchange rate, at the same time as international interest rates are low and investors are prepared to break new ground in their quest for higher yields.

Box 1

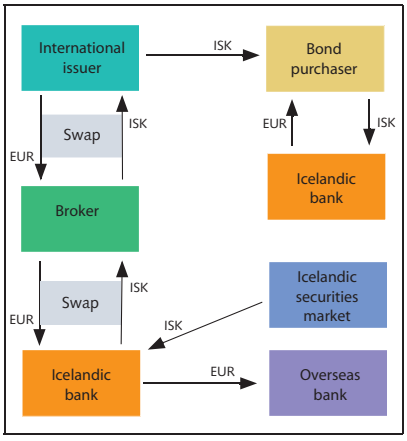
Structure of króna-denominated Eurobond issues[1]

Chart 1
Króna Eurobond issue
Payment flow on issuance



Source: Central Bank of Iceland.

Chart 2
Króna Eurobond issue
Payment flow on maturity



Source: Central Bank of Iceland.

The following is a brief account of the structure of króna-denominated Eurobond issues. The process is broken down into a number of steps, but it should be noted that certain stages of the transactions may entail several steps at once.

Step 1

The international issuer issues Eurobonds denominated in Icelandic currency. All issues hitherto have been coupon bonds in which the principal is paid in a lump sum on maturity and interest is paid at intervals of, for example, six months. These bonds carry a lower yield than is available to the Icelandic Treasury on comparable issues in the domestic markets, based on the nominal yield curve. When foreign investors purchase the bonds they must convert foreign currency into Icelandic krónur in the domestic FX market.

Outcome:
International issuer: Has a fixed-interest liability in Icelandic currency and receives the amount of the issue in Icelandic currency.
International investor: Holds an asset in the form of a fixed-interest liability in Icelandic currency. Bears the currency risk.

Step 2

An international broker makes a currency swap with the international issuer converting the latter's króna-denominated liability to a liability denominated in foreign currency. The broker receives the amount of the bond issue in Icelandic currency and presents the issuer with the equivalent amount in foreign currency. At the same time the broker pays the issuer fixed interest in Icelandic currency in return for floating interest (based on LIBOR rates), plus/minus a fixed margin, from the issuer.

Outcome:
International issuer: Has a liability denominated in foreign currency on which it pays a variable LIBOR interest rate, and receives the issue amount in foreign currency.
International broker: Holds a fixed-interest liability denominated in Icelandic currency and a foreign currency-denominated claim at variable interest plus/minus a fixed margin. Retains the equivalent amount of the issue in Icelandic currency.

Step 3

The international broker makes a reverse currency swap with an Icelandic bank, matching the swap with the foreign issuer. However, the broker does not need to hedge his position in full, i.e. he can opt to retain part of the exposure on his books.

1. This Box on the structure of króna-denominated Eurobond issues was written by Haukur Benediktsson, economist at the Central Bank of Iceland's International Department and lecturer at the University of Iceland Faculty of Economics and Business Studies.

Outcome:

International broker: If he makes a full hedge, his net exposure is zero, i.e. the currency swaps with the international issuer and Icelandic bank balance each other.

Icelandic bank: Holds a fixed-interest liability denominated in krónur and a foreign currency-denominated claim at variable interest plus/minus a fixed margin. Retains the equivalent amount of the issue in Icelandic currency.

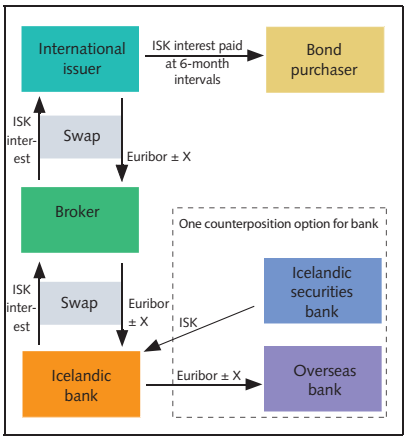
Step 4

The Icelandic bank borrows foreign currency at variable interest rates plus a fixed margin, thereby creating a foreign currency-denominated liability against its claim on the international broker under the swap agreement. This minimises the Icelandic bank's currency risk. Under the swap agreement, the Icelandic bank holds a fixed-interest liability denominated in krónur and retains the equivalent amount of the issue in that currency. To hedge that risk, the Icelandic bank can purchase Treasury notes in the domestic securities market (i.e. create a króna-denominated asset) and use the interbank króna market to fine-tune the króna cash flow. The structure of the domestic bond market and interbank króna market make it virtually impossible for the Icelandic bank to hedge the deal in full, i.e. it assumes some interest rate risk. Also, the Icelandic bank may simply regard the króna-denominated liability which it holds under the swap agreement as a cheap source of funding in krónur – certainly cheaper than would be available by a direct issue of króna bonds in the domestic bond market. In other words, the Icelandic bank lends the equivalent of the issue in krónur on fixed interest terms.[2]

Outcome:

Icelandic bank: The currency risk is minimised because the bank holds counterpositions in the foreign currency. The Icelandic bank can opt to hedge its króna-denominated liability to some or a large extent, but some interest rate risk could develop.

Chart 3
Króna Eurobond issue
Interest payments



Source: Central Bank of Iceland.

2. In fact, the bank could lend krónur on variable interest terms and offer other customers an interest rate swap under which they would be paid variable interest in Icelandic currency but pay fixed interest. This could be a worthwhile risk in a climate of rising interest rates.

Who gets what?

Most issuers of króna Eurobonds are international financial institutions with high ratings from international credit agencies. On first impression it would seem paradoxical for them to issue bonds denominated in Icelandic currency to fulfil their need for foreign capital, but there are rational explanations for their behaviour

On the strength of their reputations, well known financial institutions with high credit ratings can issue króna bonds at lower interest rates than are offered in the Icelandic market. However, even though the rates are lower than in the domestic bond market they are much higher than in most international markets, which attracts foreign investors who are prepared to trade with familiar partners and assume the accompanying currency risk. While they could invest directly in the Icelandic bond market at higher interest rates, they probably prefer to deal with known names with high credit ratings within an international regulatory framework instead of making the effort involved in learning about the Icelandic bond market and its own regulatory structures.

By issuing bonds at lower interest rates than are on offer in the Icelandic market, the issuer can procure Icelandic currency more cheaply than local borrowers. Consequently, the issuer can offer krónur to Icelandic banks at lower interest rates than are available to them in the domestic market.[12] In return, the issuer asks for the currency he really lacks, e.g. euros. Interest rates in these swaps lie somewhere between the bond yield and the domestic market rate, so that both the issuer and the Icelandic bank profit on the deal. The Icelandic bank then procures the euros required by the issuer by borrowing abroad at current market rates.

In effect, the issuer and the Icelandic bank borrow in the respective markets where they enjoy a *comparative advantage* and split the gains. Even if the Icelandic bank has to pay a higher rate of interest to borrow euros than the issuer could obtain, this margin is crucially less than between the issuer's rates for króna bond issuance and those available to the Icelandic bank in the domestic market. Both parties end up with the desired currency at less cost than if they had taken loans directly denominated in it. The reason is the end-investors' confidence in the issuer, and the character of the issue structure, which leaves the currency risk with the end-investor.

Icelandic banks therefore obtain less expensive funds in krónur than are available to them domestically. The banks can use the funding for investments, on-lending to domestic borrowers or refinancing of existing debt which is on less favourable terms. Because of the small size of Icelandic bond classes with a similar maturity to the international issues, Icelandic banks only have limited scope for hedging against interest rate risk through that channel. Another option is to lend the domestic currency in the interbank króna market. Buoyant domestic demand for credit should make it easy for banks to on-lend the krónur in Iceland, at interest rates determined by domestic credit supply and

12. In most cases an international securities trader brokers the deal between the issuer, the Icelandic bank and the end-investor. Because this intermediate stage has no major effect on the main process it is omitted from this example. See further Box 1.

demand. Many of the banks' customers are likely to be willing to convert older floating-rate loans to nominal loans at fixed interest rates and thereby take a position in interest rates based on expected further increases in the policy rate.

The banks' arbitrage on international króna bond issues depends on the margin between interest rates in swaps with the issuer and the interest they can earn by investing the krónur in Iceland or lending them on to domestic households and businesses. Competition among Icelandic financial institutions then determines how large a share of this arbitrage is passed on to the banks' customers in the form of lower lending rates.

As mentioned above, the end-investor is attracted by high interest rates in Iceland. The issue broker often profiles Iceland strongly as a booming economy with high foreign investment inflows where a tighter monetary stance will maintain the strength of the domestic currency. Nonetheless, the end-investor can hedge against exchange rate volatility, which they do to some extent, according to information from issue brokers. In this context, it is noteworthy that the share of total Treasury bond portfolios held by foreign investors has increased recently and now amounts to around 30%. If this information is correct, however, it is rather surprising that the end-investor should buy foreign bonds denominated in krónur at lower rates of interest than are available domestically, then invest in domestic bonds as a hedge against currency risk.

In a nutshell

In a nutshell, the essence of the process is that two financial institutions take part in bond issuance to finance their lending. One is a recognised international institution which needs to fund its lending in foreign currencies, and the other is an Icelandic bank that needs to fund its lending in domestic currency. Instead of each institution borrowing in the currency that it requires, they agree to lend in the currency that the other needs, then perform a swap in order to procure cheaper funding than otherwise.

The preconditions for this process to function are the existence of demand for the international institution's bonds among investors who are prepared to take a currency risk, and likewise the existence of strong demand for króna-denominated loans in the domestic market. Demand from foreign investors is likely to persist for as long as they expect Iceland's interest-rate differential with abroad (especially with the investors' home country and the countries where they normally invest) to remain wide enough that movements in the exchange rate of the króna do not erode their profit. Demand for króna loans in the domestic market, on the other hand, is determined by aggregate demand in the Icelandic economy and the cyclical position. Changes in end-investors' expectations regarding (i) interest rate developments both in Iceland and internationally, (ii) the exchange rate of the króna and (iii) economic growth developments in Iceland can therefore halt, reduce or increase international issuance of króna bonds.

Before attempting to assess the impact of these bonds issues on Iceland's capital markets and aggregate economy, as well as on Cen-

tral Bank of Iceland monetary policy, it is worthwhile to examine the experience of New Zealand.

The experience of New Zealand

New Zealand has some twenty years' experience of offshore issuance of bonds denominated in New Zealand dollars. Issuance has peaked three times when the interest-rate differential with abroad has been at its widest, in 1985-1987 and 1996-1998 and since 2002. Volume has increased between these periods and is now at a historical peak. Current offshore issuance exceeds the volume of New Zealand Treasury bonds, but the secondary market is much smaller. Issuers have mostly been international development banks and securities houses.

An informative comparison for Iceland

New Zealand's experience provides an informative comparison for Iceland, since both are small, open economies which have undergone major structural reforms over the past decades.[13] Like Iceland, New Zealand is on an inflation target with a floating exchange rate, and is currently experiencing economic imbalances of a similar character. The New Zealand economy is presently characterised by a strong domestic currency, widening current account deficit, strong inflationary pressures, soaring private consumption, inflated asset prices and monetary tightening.

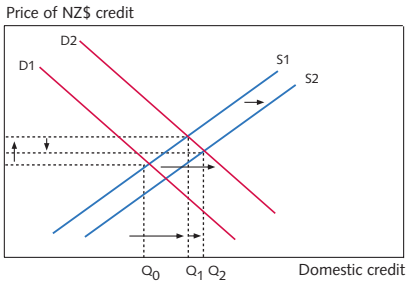
New Zealand's capital markets are considerably more developed than Iceland's and within it are various institutions which play a significant role in the offshore bond issuance process. Most important are a deeper market for Treasury bonds and swaps.[14] However, it should be pointed out that four Australian banks form the backbone of the New Zealand banking system.

Economists at the Reserve Bank of New Zealand have studied the impact of offshore bond issues on the capital markets and the aggregate economy. Their findings are particularly thought-provoking for Iceland.[15]

Impact on interest rates and the current account deficit

The Reserve Bank of New Zealand underlines that offshore bonds are best understood as a part of the process of capital market integration. If credit demand causes an imbalance between domestic savings and investment, domestic interest rates rise above world interest rates, which enables the economy as a whole to invest more than it saves by borrowing from non-residents. The current account deficit, i.e. the difference between national savings and national investment, is then met by an inflow of foreign savings, attracted by higher interest rates than are available elsewhere.

Chart 5
Supply and demand for New Zeland dollar credit



D1 to D2: Increase in demand for NZ$ credit (e.g. housing boom)
S1 to S2: As offshore investors gain access to NZ$ market, supply of credit increases
Source: Drage et al. (2005)

13. Evans et al. (1996) present an overview of structural reforms in New Zealand over the period 1984-1995.
14. Briggs (2004) and Woolford et al. (2001) discuss the importance of swaps for the New Zealand economy.
15. This discussion of the experience of New Zealand is based on Drage et al. (2005), Eckhold (1998), Woolford et al. (2001) and information provided by Anella Munro, Senior Economist at the Economics Department of the Reserve Bank of New Zealand.

Table 3 Comparison of international bond issues in local currencies of New Zealand and Iceland

	New-Zealand	*Iceland*
Outstanding international bond stock in November 2005	1,958.5 b.kr – 30% of GDP	114.75 b.kr – 13% of GDP
Average maturity of bonds[1]	Almost 4 years	1.7 years
Issuance began	1985	2005

1. Maturity of bonds has lengthened between the peaks and average maturity of Eurokiwi bonds in the most recent wave is almost five years. Almost all Uridashi bonds have a maturity of two to three years.

Sources: Drage et al. (2005), Reserve Bank of New Zealand (2005b).

Offshore bond issues in New Zealand dollars increase the available supply of credit[16] and let it balance with demand at a lower interest rate, see Chart 5. This downward pressure on domestic interest rates stimulates investment, which in turn widens the current account deficit by driving the gap between domestic saving and investment even wider.

In the absence of bond issues, greater domestic demand for credit would have to be met by increased domestic saving, requiring higher interest rates. A rise in interest rates would boost domestic saving and reduce the current account deficit.

Thus the effect of issues is to bring down interest rates, extending the period for which domestic lending and investment can grow. In the long run, however, the economy is likely to slow down and the current account deficit trend towards balance. The downward pressure on interest rates from bond issues cannot – any more than monetary policy – contribute to stable growth in excess of long-term potential output.[17]

Exchange rate effects

In theory, bond issues put upward pressure on the local currency at issuance and downward pressure at maturity, but extensive research at the Reserve Bank of New Zealand has not produced statistically significant evidence of this at either stage. In their view, any effect is likely to be either small, temporary or, consistent with forward-looking expectations, priced in well before the maturity date.

Theoretical exchange rate relationships are notoriously difficult to confirm empirically. Effects of upward and downward pressures on the exchange rate may be only short-lived, e.g. for part of a day or several days, without being captured in monthly data, but these cases would obviously have a minor economic impact. Another possibility is that the effect is negligible compared with other news to which the market reacts. Finally, time series regressions may be an inappropriate method for discerning the impact of forward-looking expectations.

16. However, offshore bonds are not viewed as a capital inflow in the balance of payments accounts, but as a hedge, typically in the form of borrowing in foreign currency by New Zealand banks. This does not alter the fact that available credit supply increases.

17. Pétursson (2001a) explains how monetary policy has no impact on real aggregates in the long run.

The Reserve Bank of New Zealand has found that the exchange rate impact of issuance has proved much less than was feared. Interestingly, large volumes of Eurokiwi maturities around the turn of the millennium do not appear to have had adverse effects. The concentration of approaching maturities potentially represents a point of vulnerability, however, and the Reserve Bank of New Zealand will continue to monitor developments closely (see Drage et al., 2005).

Impact on financial stability

New Zealand ranks among the most indebted of the developed countries. Its net international liabilities have been mounting over the past three decades and are now equivalent to 84% of GDP. While the bulk of external debt is denominated in foreign currencies, New Zealand stands out from many other indebted countries because a substantial part is hedged. Offshore issues in local currency have increased foreign investors' appetite for owning assets in New Zealand dollars and provide a hedge for foreign currency-denominated debt, through swaps between New Zealand banks and issuers (see Woolford et al., 2001). For example, a significant depreciation of the New Zealand dollar increases foreign debt service, other things being equal. However, if foreign debts are hedged in New Zealand dollars by swaps between offshore issuers and New Zealand banks, the depreciation has a correspondingly much smaller impact on debt service. Roughly half of New Zealand's debt is denominated in foreign currencies, but most of this is hedged. The NZ$ 24 b. in Eurokiwis outstanding in March 2005 provided hedging for 30% of the country's foreign currency debt (see Drage et al., 2005). Such hedging provides a degree of financial stability.[18]

Bond yields

The Reserve Bank of New Zealand also studied the ex post returns on all offshore bonds in New Zealand dollars maturing in 2004. The ex post returns exhibited much volatility, ranging between -5% and 24%, but averaged 4.1%, virtually the same as German Treasury bond yields for the same period. This indicates that the risk is underpriced. Ex post returns appear to be determined mainly by exchange rate movements rather than coupon rates (see Drage et al., 2005).[19]

Impact of issuance on financial markets

In Iceland, the financial markets have been radically transformed over the past two decades in tandem with trade liberalisation, an enhanced monetary and fiscal framework and global integration of domestic businesses. The exchange rate, interest rates and securities prices are now all determined in active markets. Important submarkets have been boosted by increased turnover, strong financial institutions and participation of non-residents. Nonetheless, Iceland's financial markets

18. A more detailed discussion of the impact of offshore issues on financial stability is found in Woolford et al. (2001) and in the Reserve Bank of New Zealand's recent *Financial Stability* Report. See in particular Box 3 on pp. 20-21, which also reports that the outstanding bond stock now amounts to NZ$ 45 b. (Reserve Bank of New Zealand, 2005b).

19. It should be pointed out that bonds issued in 1996-97, on which yields were very poor, are a major determinant of this outcome. See Drage et al., (2005).

are still relatively underdeveloped compared with those of developed countries on both sides of the Atlantic, because turnover remains comparatively low, there are few participants and certain financial products are little used.[20] What effect has international issuance of króna bonds had on Icelandic financial markets? What is the possible long-term impact? Let us first examine several submarkets.

Interbank market for domestic currency

An organised interbank market for domestic currency has operated in its current form since 1998. The market performs an important role in liquidity management by commercial banks and savings banks, and in general interest rate formation in the money markets. Financial institutions participating in the market can provide or procure capital there. Interest rates indicate the liquidity position in the interbank market, being high when liquidity is tight and low when it is abundant. Central Bank rates for overnight lending and deposits in its current accounts form a floor and ceiling for interbank market interest rates, so the position of the yield curve within that range also indicates market liquidity. Since interbank market rates are important for pricing of certain financial products, such as derivatives, they act as key components in general market interest rate formation (see Kristinsson, 2002).

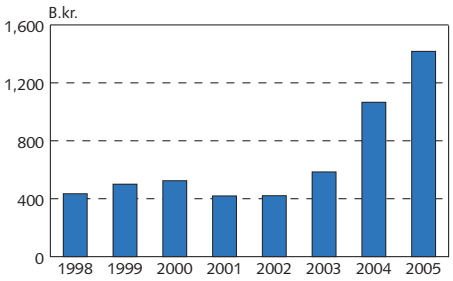
Consequently, the interbank market is an important channel for monetary policy transmission. A rise in the policy rate is generally transmitted almost simultaneously to interest rates in the interbank króna market where short-term instruments with a maturity of up to twelve months are traded (see Pétursson, 2001a).

By putting downward pressure on interbank market rates, króna Eurobond issuance can thereby hamper the transmission of Central Bank policy rate rises in the money markets. One possible counterposition available to Icelandic banks for their short swaps with króna Eurobond issuers is to lend domestic currency in the interbank market at a similar length to the maturity of the bonds. The impact of bond issuance should therefore mainly be reflected at the longer end of the interbank yield curve.

Chart 8 shows the yield curve of interbank market interest rates compared with just over a week earlier, before the announcement of the Central Bank policy rate hike at the end of September, and on November 21. The shape of the curve has clearly changed since Eurobond issuance began. In spite of expectations about a further policy rate hike, longer interbank market rates trend downwards, and on November 21 they are lower at the longer end than the shorter. This is a clear sign of abundant liquidity in the market, and a likely explanation is króna inflows in connection with bond issues.

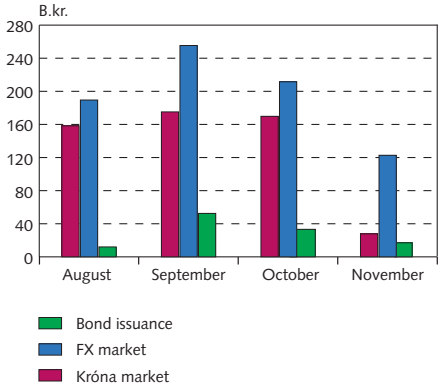
Charts 6 and 7 show that turnover in the interbank króna market has surged since króna Eurobond issues were launched at the end of

Chart 6
Turnover in the króna market 1998-2005[1]



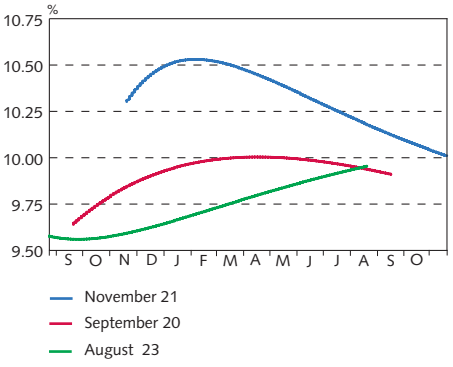
1. The value for 2005 is until November 14 inclusive.
Source: Central Bank of Iceland.

Chart 7
Króna Eurobond issues and turnover in the interbank FX and króna markets[1]



1. Data until November 11 inclusive.
Sources: Central Bank of Iceland, Reuters.

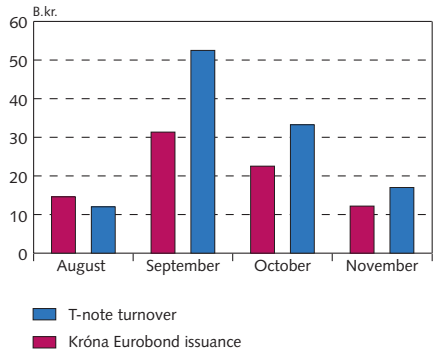
Chart 8
Yield curve on króna market



Source: Central Bank of Iceland.

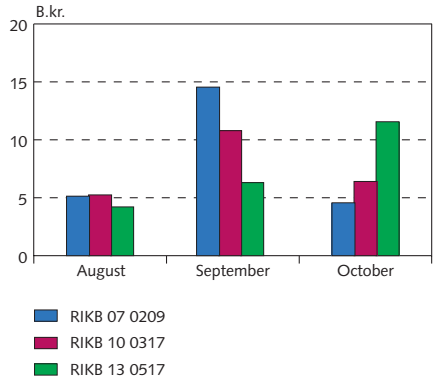
20. In a box appended to its Staff Report for the 2005 Article IV Consultation, the IMF compared the Icelandic banking sector and stock market with those of other Nordic countries. The IMF found that while Iceland's banking sector is quite active when compared to other Nordic countries, the stock market is not. The IMF therefore puts Iceland in the category of bank-based economies, while Denmark and Sweden, for example, are market-based economies where it is much easier for companies to raise equity on stock exchanges (IMF, 2005c).

Chart 9
Turnover of Treasury notes and króna Eurobond issuance August-November 2005[1]



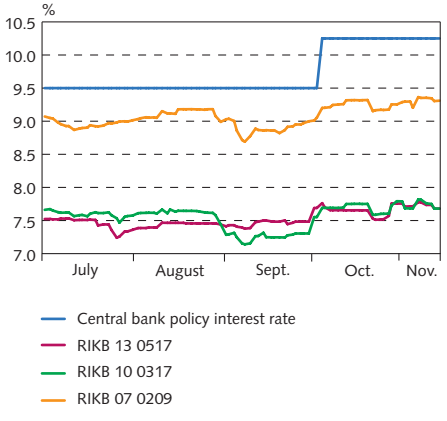
1. Data until November 14 inclusive.
Sources: Iceland Stock Exchange (ICEX), Reuters, Central Bank of Iceland.

Chart 10
Turnover of T-note classes August-October 2005



Sources: Iceland Stock Exchange (ICEX), Reuters.

Chart 11
Interest rate developments on T-notes and the policy rate July-November 2005[1]



1. Data until November 11 inclusive.
Source: Central Bank of Iceland.

August. In this respect, international bond issues have deepened the interbank market, as discussed in the chapter on *Financial markets and Central Bank measures* in this edition of *Monetary Bulletin*.

Bond market

The bond market is Iceland's largest financial submarket and has expanded substantially in recent years. Central and local governments, corporations and households tap credit in it. Market capitalisation of bonds and notes amounted to 953 b.kr at the end of 2004 and market turnover was roughly 1,500 b.kr. that year, with Housing Financing Fund (HFF) bonds, housing bonds and housing authority bonds accounting for around two-thirds, see Table 4.

Króna Eurobond issuance has spurred demand from international securities houses, which broker the issues, for swaps with Icelandic commercial banks, which convert the issuer's liabilities in krónur into foreign floating interest rates. Counterpositions available to the Icelandic banks in these swaps include investments in nominal bonds of a similar maturity in the domestic market. In most cases the Eurobonds have a maturity of one to two years, so Treasury notes are the only instruments in the domestic market with a similar lifetime.

Table 4 Turnover on Iceland Stock Exchange (b.kr.)

	2000	*2001*	*2002*	*2003*	*2004*
Bank bills	40.1	32.2	69.9	51.4	43.1
Equities	198.8	138.3	321.3	553.6	721.4
Housing bonds	132.1	218.8	319.2	506.5	366.8
HFF and housing authority bonds	42.4	87.1	110.7	143.1	602.1
Treasury notes	25.3	108.0	133.2	149.8	269.1
Treasury bills	34.3	32.5	48.4	79.8	84.5
Treasury bonds	48.3	122.6	103.4	78.3	107.7
Total	521.4	739.6	1,106.3	1,562.4	2,194.7

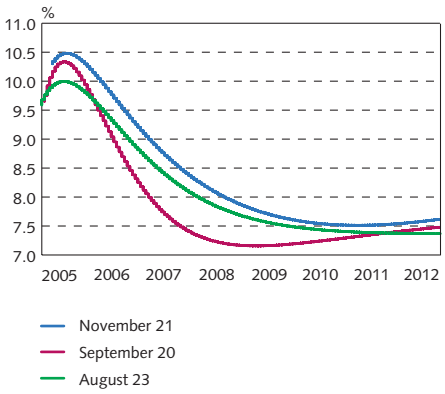
Source: National Debt Management Agency (2005).

Treasury notes are non-indexed instruments issued by the National Debt Management Agency (NDMA) on behalf of the Treasury. Three classes are currently listed on Iceland Stock Exchange (ICEX): RIKB 07, RIKB 10 and RIKB13. As a small T-note class relative to international issues, it can only provide counterpositions for a small part of them. The impact of international issues and accompanying swaps is clearly reflected in secondary market trading with T-notes, especially RIKB 07 and RIKB 10 in September and RIKB 13 in October following Kommunalbanken's five-year króna bond issue, see Chart 10. Interest rates plunged likewise during the month, see Chart 11. However, they rose again in October following the Central Bank's policy rate hike and expectations of a tighter monetary stance in the near future.

Chart 12 compares the nominal yield curve before króna Eurobond issues commenced, just over a week before the Central Bank's policy rate hike was announced in September and on November 21. The shape of the curve changes markedly after issuance began and demand for RIKB 07 and RIKB 10 increased, as shown by the much

lower position of most of the curve for September 20 compared with August 23. Apparently, the 0.75 percentage-point rise at the end of September and strongly worded declaration about a tighter monetary stance managed to shift the entire yield curve to above the position before issuance began.

Chart 12
Nominal yield curve



Source: Central Bank of Iceland.

Interbank FX market

The exchange rate of the króna has been determined by supply and demand in the interbank FX market since 1993, and without intervention by the Central Bank since March 2001 when Iceland moved onto an inflation target and the króna was floated. The market performs a vital role in facilitating and managing currency flows between buyers and sellers and its importance has grown with higher levels of international trade, full deregulation of cross-border capital movements and the currency float. However, Iceland's FX market has always been very thin, with low turnover and few participants. Thus a small trade can often have a disproportionate effect on currency prices.

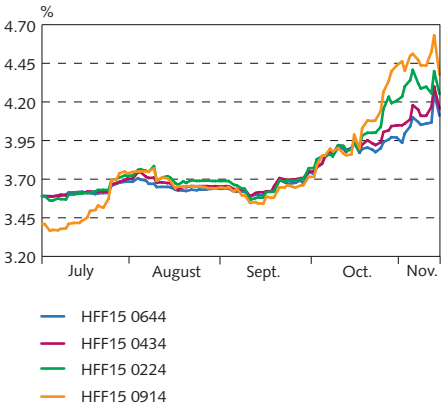
The exchange rate of the króna has been at a historical peak recently. As mentioned above, this is because of a tighter monetary stance to counter demand pressures in the economy. The króna has continued to appreciate after króna Eurobond issues were launched. The exchange rate index stood at 109 before issuance began and is at 103 at the time of writing, after moving as low as 100.6. In the meanwhile, the policy rate has been raised by 0.75 percentage points and the Central Bank has pledged "a tight monetary stance for longer than expected" – both factors which ought to contribute to a strengthening of the króna. Accordingly, the respective impacts of Central Bank monetary policy and króna Eurobond issuance are difficult to distinguish. The relationship between monetary policy and the exchange rate will be examined more closely below.

Turnover in the FX market this year has been brisk at roughly 1,600 b.kr., which is double the volume in 2004, and has soared to 200 b.kr. per month or more after króna Eurobonds were first issued at the end of August, see Chart 7. The three commercial banks report that they have made swaps with non-residents for almost 100 b.kr., which could indicate that the bulk of Icelandic currency connected with the issue has been fed into the domestic market, contrary to recent claims that the international brokers acting on behalf of issuers are keeping open positions in interest rates. However, all this is difficult to ascertain.

Stronger Icelandic financial market infrastructure

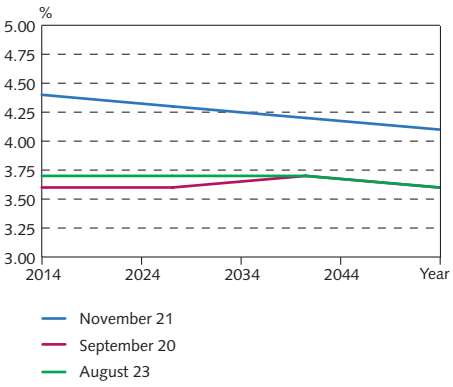
The interbank króna and FX markets have deepened following the Eurobond issues, with a marked jump in turnover. Foreign investors have also added substantially to their króna-denominated portfolios as a result of these issues; until this time, Iceland had not managed to drum up serious interest in its local currency bonds. Icelandic commercial banks have gained a new option for cheaper funding in krónur than if their own credit supply had been confined to the domestic market. Customers will probably benefit in the form of lower interest rates and more diverse credit products. Issuance has therefore strengthened

Chart 13
Interest rate developments on HFF bonds
July-November 2005[1]



1. Data until November 14 inclusive.
Sources: Iceland Stock Exchange (ICEX), Central Bank of Iceland.

Chart 14
Indexed yield curve



Source: Central Bank of Iceland.

Iceland's financial market infrastructure and is likely to spell narrower interest rate margins and risk premia in the long run. Deeper financial markets bolster the yield curve and are likely to sharpen competition between domestic banking institutions and boost the use of previously neglected financial products.

It will be interesting to see whether bond maturities lengthen as international issuers acquire greater knowledge and experience of Icelandic financial markets, as has been the case in, for example, New Zealand. Norway's Kommunalbanken is so far the only issuer of króna bonds with a maturity of five years.

Economic impact of bond issuance

Iceland's experience of króna Eurobond issuance is still very short. None of the issues are close to maturity, so their economic impact can only be ascertained to a limited extent. A more relevant question is whether there is any reason to expect the impact of international bond issues in local currency to differ in principle between Iceland and New Zealand. This requires an evaluation of the effect of specifically Icelandic factors, in particular the shallowness of financial markets and their division into nominal and indexed bonds. Exchange rate volatility, on the other hand, is by no means more than in New Zealand.[21]

Interest rates

As demonstrated above, króna Eurobond issues have exerted downward pressure on domestic interest rates. They have gone down at the longer end of the interbank market spectrum and yields on bonds with a similar lifetime dropped when international issues were launched, although the policy rate hike subsequently shifted them up again. Nominal interest rates are therefore lower now than if issuance had not begun. Issuance has clearly not prevented the rise in policy rate from being transmitted to nominal interest rates, but it is less than otherwise. In the current climate, króna Eurobonds have therefore dampened the effectiveness of Central Bank monetary policy across the yield curve, as discussed later.

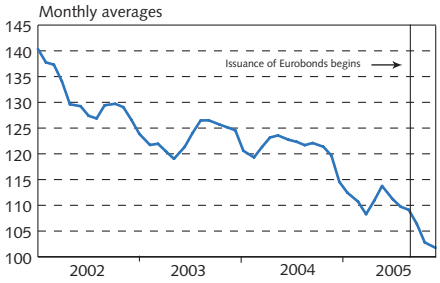
The Icelandic bond market consists largely of indexed bonds and long-term indexed interest rates are most important for households and businesses. Chart 13 shows the interest rate development of HFF bonds since July 2005. Chart 14 compares the yield curve of HFF bonds before international issuance began, just before the announcement of the September policy rate hike and on November 21. Both charts reveal that monetary tightening is finally beginning to pass through to the indexed yield curve. The CPI measurement in November reinforced the increase in yields. Also, the strength of the króna has encouraged foreign investors to close their positions in indexed bonds. HFF bond turnover has reached record levels recently and yields have risen substantially. Since increases have been more pronounced at the shorter end than at the longer end, the indexed curve now trends downwards after being almost continuously flat for a whole year. In the very last

21. A comparison of fluctuations in the level of production, inflation, interest rates and exchange rates in the two countries is made in Pétursson (2004).

few days, indexed mortgage lending rates have gone up, following an increase announced by Landsbanki Íslands and an HFF bond auction.

The probable impact of króna Eurobond issues on long-term indexed rates is difficult to predict. They will be determined by the impact that issuance has on market expectations about the future development of short-term interest rates and inflation. Assuming sticky prices and normal substitution between indexed and nominal bonds, a change in short-term nominal rates should cause indexed rates to move temporarily in the same direction.[22] Market expectations concerning monetary policy measures and their credibility therefore have a significant effect, as discussed later.

Chart 15
Exchange rate index 2002-2005[1]



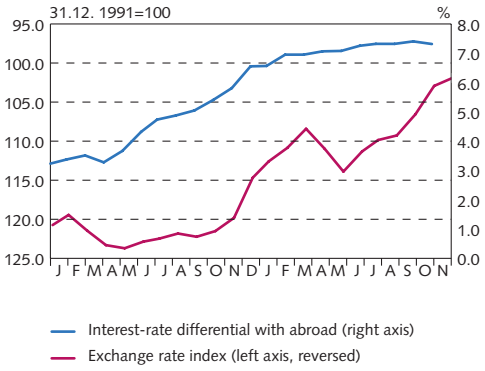
1. Data until November 16 inclusive.
Source: Central Bank of Iceland.

Exchange rate

The króna has appreciated in step with the tighter monetary stance, and apparently even more as a result of króna Eurobond issues, see Chart 15. Does this imply that international issuance could affect the króna more than it does the New Zealand dollar, for example because of Iceland's thin FX market? Or is this an overshoot which will eventually be reversed? Can a substantial depreciation of the króna be expected as the bonds reach maturity? All these questions hinge on a single key issue: What determines the exchange rate of the króna?[23]

Explaining the determinants of exchange rates has long been a major challenge in economic theory, and although various hypotheses have been proposed about the relationship between the exchange rate and other fundamentals, especially interest rates, extensive research in recent decades has not succeeded in establishing their validity. Exchange rate economics abounds in puzzles that researchers are attempting to solve.[24] More than twenty years ago, Meese and Rogoff (1983) demonstrated that no exchange rate model could produce a better forecast than the simple hypothesis that the current exchange rate provides the best forecast of the future rate, i.e. a random walk. For all their efforts, economists have not managed to improve on this finding.

Chart 16
Exchange rate and interest-rate differential with abroad 2004-2005[1]



1. Differential between twelve-month rate on domestic money market bills and comparable foreign securities.
Source: Central Bank of Iceland.

The asset price approach

According to the asset price approach to the exchange rate, the price (i.e. exchange rate) of the króna should reflect market expectations of the future gain from holding assets denominated in krónur relative to another currency. Primarily, those expectations are determined by the interest-rate differential with abroad adjusted for risk premium and expected exchange rate movements.

If market expectations are forward-looking, exchange rate developments will be determined by both the *size* of the interest-rate differential with abroad and its *duration*. However, if market agents assume an unchanged exchange rate in line with Meese and Rogoff,

22. See further Pétursson (2001a and b).

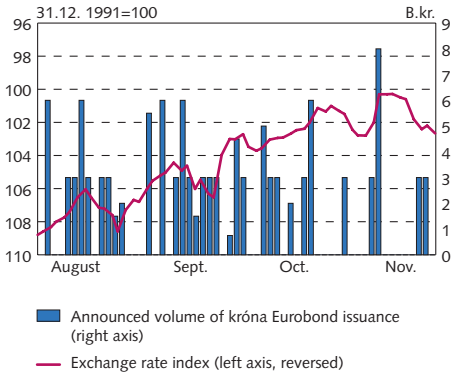
23. Determinants of exchange rates of currencies are discussed in more detail in *Monetary Bulletin* 2001/4, Box 3, 24-26.

24. The main puzzles are the exchange rate disconnect puzzle, purchasing power parity puzzle and forward bias puzzle. Sarno (2005) provides a good overview of the main puzzles in exchange rate economics and advances made towards solving them.

Chart 17

Exchange rate index and announcements of króna Eurobond issuance

Daily data August 24-November 14, 2005



Source: Central Bank of Iceland.

the *sign* of the interest-rate differential will prove crucial, and they will invest in króna-denominated assets as long as this remains positive, see Chart 16. If this is the case, short-term interest rates will weigh more heavily compared with forward-looking expectations in determining the exchange rate of the króna.

The exchange rate of the króna and Central Bank monetary policy

If short-term interest rates are crucial for exchange rate developments, this prompts the question: What determines short-term interest rates? Monetary policy can obviously have a significant effect on short-term rates and there will be a differential with abroad if Iceland's stance differs from elsewhere. This encourages investors to switch their investments to the currency where interest rates are higher and maintain them until the arbitrage disappears. If the market is convinced that the Central Bank will keep short-term rates high, interest rates will not adjust when investors buy króna-denominated bonds. The adjustment to uncovered exchange rate parity will therefore take place through exchange rate movements.

Market expectations about short-term interest rate trends in Iceland and internationally are therefore a major determinant of how the exchange rate of the króna will develop. In turn, these expectations are shaped by expected inflation developments in Iceland and abroad, which determine the monetary stance. In historical terms, monetary policy has been accommodative in much of the world over the past two years, and since it coincides with surging domestic demand in Iceland which has forced the Central Bank to raise its policy rate, this has driven an almost unbroken appreciation of the króna. Króna Eurobonds, by fuelling demand for krónur when they are issued, and the Central Bank's strongly worded messages about tight monetary policy for longer than has been expected, have reinforced this development, but the extent to which international issues account for the appreciation is difficult to establish.

It is important to realise that although the short-term interest-rate differential with abroad is a major driver of the exchange rate of the króna and that the Central Bank of Iceland's monetary policy has a strong effect on it, this does not imply that the Central Bank can manage the exchange rate. Central Bank monetary policy is shaped by underlying inflationary pressures in the economy. If market agents consider that the Bank's monetary policy is at odds with its announced target, they will not expect the long-term yield curve to have changed unless they also believe that the Bank has access to information unknown to them, or that its measures represent a fundamental change in policy. For example, if they deem a policy rate hike excessive, they will expect lower interest rates in the future, as the only way to attain the inflation target. Thus their expectations about the profitability of investing in krónur should not change much, and the exchange rate will remain virtually unchanged.[25]

25. Box IX-1 on p. 46 in this edition of *Monetary Bulletin* demonstrates the importance of distinguishing between the part of the wider nominal interest-rate differential that entails a rise in real interest rates, and the part reflecting higher domestic inflation relative to abroad. This is necessary because it is not certain that a wider interest-rate differential with abroad will suffice to offset high domestic inflation relative to inflation abroad.

Key role of expectations in exchange rate developments

It is not easy to pinpoint the methods that international issuers of króna bonds and potential investors use to forecast the exchange rate development of the króna. They are probably diverse, with some assuming an unchanged interest rate and others taking account of other factors such as inflation developments, interest rate movements in Iceland and abroad, economic growth forecasts, declarations by monetary authorities, etc. All these factors are likely to affect plans by króna Eurobond issuers. Any news which may influence market expectations can also affect the exchange rate of the króna, just like ordinary securities prices. This is precisely how the asset price approach explains short-term volatility in FX markets.

Perhaps it is not surprising that exchange rate developments are difficult to explain by modelling, since market expectations about so many factors are crucial. Expectations are liable to change quickly, many factors may affect sentiment and herd behaviour is common in FX markets. A tightening of monetary policy abroad, an improved domestic inflation outlook, movements in international capital markets and fears that the króna is too far from its equilibrium value are only a few of the factors that may alter market expectations and have a decisive effect on the exchange rate of the króna, and thus on króna Eurobond issuance.

The outlook is for higher interest rates in the euro area, where inflation prospects have deteriorated. In the US, the Federal Reserve has already raised its federal funds rate by three percentage points since its monetary policy was most accommodative in 2003. The Bank of Canada has likewise hiked its key rate. At the same time, the Central Bank of Iceland has said its monetary stance is likely to be tightened. The question is therefore how Iceland's interest-rate differential with abroad will develop if monetary policy is tightened on both sides.

International experience shows that offshore bond issuance is primarily a cyclical phenomenon and generally peaks when the interest-rate differential is wide, the currency is strong in historical terms and domestic credit demand is robust. Also, while there are indications that króna bond issues may make the currency more volatile, the experience of New Zealand shows that this can also take place smoothly.

Impact of issuance on the Central Bank's monetary policy

Price stability is the main objective of the Central Bank of Iceland, defined as a twelve-month rise of 2½% in the CPI. Another objective is promoting an efficient and safe financial system, including payment systems domestically and with foreign countries. This has become an increasingly prominent central banking task in recent years, in response to the deregulation of cross-border capital movements. Króna bond issuance affects both objectives. The following discussion is largely confined to monetary policy.

Increased pressure on the exchange rate channel

The transmission mechanism of monetary policy describes how Central Bank policy rate changes pass through the economy to affect

household and business decisions on consumption and investment, and thereby aggregate demand, inflation expectations and, finally, inflation. The mechanism is complex, rife with uncertainties and liable to change in step with macroeconomic conditions at any given time, partly because household and business expectations weigh so heavily. Major structural changes in recent years have altered the transmission mechanism, while the economy is obviously so imbalanced at present that historical experience provides very limited guidance. Thus it is difficult to assess the impact of króna Eurobond issuance on the transmission mechanism and effectiveness of the Central Bank's monetary policy in the current climate.

The above discussion suggests that monetary policy transmission through the interest rate channel is temporarily weakened in the current climate, because króna Eurobond issues counteract the Central Bank's policy rate hikes. On the other hand, transmission through the exchange rate channel is temporarily strengthened due to the appreciation of the króna, but this effect may unwind if capital flows are reversed and the króna weakens.

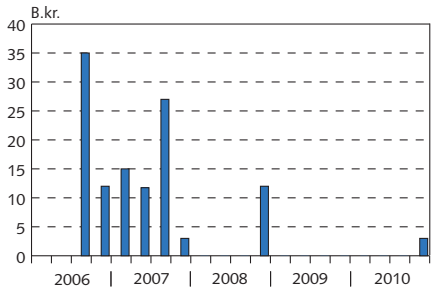
Thus the effect of króna Eurobonds on monetary policy is to heighten the extent to which rises in the policy rate are passed through the exchange rate channel relative to the yield curve. This is not to say that monetary policy has a negligible effect on the yield curve, however. Recent indexed yield curve developments have shown an impact, but it is weaker than if króna bond issuance had not taken place. As mentioned earlier, it is not easy to assess how much of the appreciation can be attributed to international bond issues, but these probably reinforced a process that had already been triggered by the policy rate hike.

A shift in monetary policy transmission can have unfortunate consequences because of its varying sectoral impact. The export sector will need to display great flexibility. However, a monetary authority typically faces a dilemma. It cannot have simultaneous objectives of ensuring domestic (i.e. price) stability, exchange rate stability and fully deregulated capital movements – what has been called the impossible trinity of monetary policy. When the Central Bank of Iceland moved onto an inflation target and floated the króna in March 2001, it opted for price stability and free capital movements. Króna Eurobond issues could amplify exchange rate volatility, so it can be said that Iceland is experiencing the limitations set by the impossible trinity more strongly now than before.

What happens as maturity approaches?

Chart 18 shows the maturity profile of the króna bonds issued so far. Bonds to a nominal value of 47 b.kr will mature in the second half of next year and to around 30 b.kr. in each half of 2007. A total nominal value of more than 100 b.kr will therefore mature in the space of one and a half years. Since they are all coupon bonds, buyers are paid the entire principal in krónur on maturity. International buyers of the bonds can then convert the krónur into foreign currency in the Icelandic FX market or invest in new króna-denominated bonds. The former option will increase the supply of krónur, which could cause

Chart 18
Outstanding stock of króna Eurobonds by maturity
Q3/2006-Q4/2010



Source: Central Bank of Iceland.

a depreciation, although this is not certain since the exchange rate is determined by many other factors, as already described. However, substantial amounts are certainly involved, especially in the third quarters of the next two years.

What impact could a possible depreciation of the króna towards the end of 2006 have on Central Bank's monetary policy and the Icelandic economy as a whole? Of course the answer depends on the state of the economy when the króna begins to slide and whether it would mark the beginning of a depreciation path or whether the króna would already have begun to yield before the impact of the bonds came into play. In a worst-case scenario, the monetary authorities could face the risk that a significant depreciation of the króna would be passed through to the price level, which would force the Central Bank to respond to the inflationary effect with an even tighter stance. Such measures could contribute to a contraction of the economy.

Is this development likely? There are at least two indications that it is not. First, in New Zealand's experience the exchange rate effects connected with offshore bond issues are extremely limited – the large volume of bonds maturing over the period 2000 to 2002 had no negative impact on the New Zealand economy and did not catalyse a significant devaluation of the currency.

Second, the relationship between prices and the exchange rate has changed in recent years whereby short-lived exchange rate movements are passed through to consumer goods later and on a smaller scale before. This change is by no means confined to Iceland and has been confirmed on both sides of the Atlantic by extensive research. Conceivable explanations include more credible monetary policy, tougher international competition which gives businesses less scope to pass exchange rate movements on to prices, a shift in the composition of goods and services in international trade, the development of new financial products that facilitate businesses in hedging against exchange rate swings, and changes in household expectations that reflect increasing global exchange rate flexibility. These changes serve to soften the impact of short-term exchange rate swings so that even if international bond issues were to cause a weakening of the króna, inflation would not be certain to increase by as much as is widely feared, and the effect would be milder. However, this is difficult to state with any certainty in the absence of research to show precisely how the relationship between price and exchange rate changes has altered in Iceland in recent years, because of the relatively short experience of the current exchange rate framework.[26]

Increased uncertainty in monetary policy implementation

All the above highlights the large degree of uncertainty and the difficulty of forecasting near-term developments. Króna Eurobond issues

26. Hampton (2001) demonstrates that the price effect of exchange rate movements has changed in New Zealand. He studied the pass-through of exchange rate movements to prices under the NZ dollar depreciation around the turn of the millennium and compares the results with earlier studies of the period 1985-1990. Hampton found a much weaker pass-through of exchange rate movements to the price level, whereby a 10% rise in import prices now raises the CPI by only 0.5% in the short term and 1.5% in the long run.

increase uncertainty in monetary policy implementation by changing its transmission through the economy, which coincides with one of Iceland's sharpest upswings for many years. However, uncertainty is not a new challenge for the Central Bank of Iceland or any other monetary authority.[27] Developments over the next few months may also provide the Central Bank with important indications about this new source of uncertainty in the Icelandic economy and the best response to it. This article is merely intended to mark the beginning of more in-depth discussion of the impact of króna Eurobond issues over the coming months and years.

Conclusion

Króna Eurobond issuance is a strong testimony to the global integration of Icelandic financial activities and a reminder that no man is an island in the swirling seas of international capital markets. Buoyant domestic demand has led to higher interest rates and an appreciation of the króna, drawing international investors' attention to the possibilities offered by this high-interest rate country in the North Atlantic.

Issuance of króna Eurobonds will continue for as long as expectations persist that the forces driving them will remain in place, i.e. an ongoing wide interest-rate differential with abroad, strong króna and robust domestic demand for credit. Many factors may alter market expectations about these drivers and some signs are already appearing. International interest rates are heading upwards and bond markets could rally. Another question is how long market agents expect the króna to retain its strength given the steady widening of the current account deficit.

This article has outlined, first, global development of offshore bond issues in local currencies over the past two decades. Second, it presents research findings on currency choice in international bond issues, focusing on the interest-rate differential with abroad, historical strength of the currency and domestic credit demand. It also discusses the structure of króna bond issues and why these factors are crucial drivers of them.

Third, New Zealand's experience of offshore issues is discussed in some detail. The reasons are that New Zealand and Iceland have similar economies in many ways and are currently witnessing similar conditions, and that twenty years' experience of offshore bond issues and its impact on the home economy have been studied in depth by economists at the Reserve Bank of New Zealand. Their findings are very reassuring for Iceland, despite the need for reservations in such comparisons, given that no two countries are never identical.

Finally, an attempt was made to assess the present and potential impact of króna bond issues on the Icelandic economy. Iceland's experience is of course very limited and such evaluations are fraught with uncertainties. It is impossible to apply the same methods as for New

27. Cf. Alan Greenspan, retiring Chairman of the US Federal Reserve: "Uncertainty is not just an important feature of the monetary policy landscape; it is the defining characteristic of that landscape." (Greenspan, 2003).

Zealand, which has documented experience of two waves of issuance and has operated a floating exchange rate for twenty years.

However, there are a number of indications that króna bond issues could have a very positive impact on Icelandic financial markets and strengthen their infrastructure in the long term.

While international issues of króna bonds have exerted downward pressure on nominal interest rates, it is difficult to predict their effect on indexed rates, which are most important for households and businesses. It is known that the króna has appreciated substantially since issuance began, but since monetary policy has been tightened at the same time, it is difficult to isolate the contribution that bond issuance has made. Likewise, it is difficult to state what the long-term exchange rate effect will be, since this is largely determined by market expectations of domestic and international inflation developments, interest rate changes and investor appraisals of the risk posed by the strength of the króna.

The impact of króna bond issues on Central Bank monetary policy is to channel it more through the exchange rate and away from interest rates, by counteracting the full pass-through of policy rate hikes across the nominal yield curve. This increases the inherent uncertainties in monetary policy implementation and calls for further research in the months to come. The author hopes this article will be a useful contribution towards that end.

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Gudmundur Gudmundsson[1] og Kristíana Baldursdóttir[2]

Pension funds – Future prospects and uncertainties

Pension fund assets were well in excess of one year's GDP at the end of 2004. The current outlook is that these assets will grow by roughly the same amount again over the next 10 years. More than one-fifth of pension fund assets are in the form of foreign portfolio investments, and a larger proportion of the additional capital will presumably need to be invested abroad. Pension fund profitability is determined by the life expectancy of fund members, the length of their working life, wage developments and the return on the funds' investments. This paper presents examples of the scale of these factors, focusing in particular on related uncertainties and their effect on the funds' operations. Iceland's large-scale monetary savings through pension funds are not found to be matched in the level of national saving.

Retirement pensions have become a serious fiscal concern in most industrialised countries. Pensions are largely paid for from tax revenues and it is foreseen that contributions will need to be raised substantially during the coming decades. The reasons are that large age groups are now nearing retirement age, and that the populations of these countries live longer and have fewer children than in the past. The ratio of pensioners to people of working age will therefore rise substantially in the twenty-first century. A comparable change in the distribution of age groups is also seen in many developing countries, including both India and China.[3]

Although the number of elderly people in Iceland will also rise relative to the population of working age, this is less cause for concern than in many other countries. There are two main reasons. One is that the projected change in age distribution is less marked than in comparable European economies, because of Iceland's higher birth rate and retirement age. Second, Iceland's pension system is for the main part based on each individual saving a portion of his or her wages in a fund that is later used for paying the pension. Therefore there is no need to increase taxation even though the proportion of pensioners increases.

By the end of 2004, Icelandic pension funds held assets of almost 1,000 b.kr., while GDP the same year amounted to 885 b.kr. Contributions to pension funds are still far in excess of payments from them. Pensioners are few in proportion to working fund members, and most have only paid contributions from their total income for part of their working life and are therefore entitled to relatively small benefits. Furthermore, funds receive income on their investments. Their assets therefore look set to increase substantially over the coming years, unless equity prices slump.

The number of old-age pensioners is expected to rise relative to the working-age population and their benefit levels will be higher.

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3. The University of Iceland Institute of Economic Studies organised a conference on this subject in spring 2005 in cooperation with Columbia University Center for Capitalism. Slides from the conference are published on the Institute's website, www.ioes.hi.is.

According to a report by the Financial Supervisory Authority (FME),[4] the funds' assets and expected contributions from current members will not entirely cover their future commitments. The main shortfall is faced by funds with employer guarantees, namely in the public sector, although these also have sizeable assets. On the whole, however, Icelandic pension funds face only a minor challenge compared with the problems looming over the systems of most advanced countries.

Iceland's success in resolving its pension fund issues can be attributed to mandatory saving. From 1990 to 2004, mandatory pension savings generally amounted to 10% of occupational income, but contributions have now widely been raised by a further 1% or 2% of wages. Furthermore, for employees who pay 2% into a supplementary pension savings plan, the employer's matching contribution has also been raised to 2%, so that most people may be expected to take part in such schemes. Interestingly, notwithstanding all the monetary savings made through the pension fund system, the level of national saving in Iceland is low compared to other countries.

A fairly broad consensus appears to prevail on the pension framework in Iceland, which can congratulate itself on choosing a different system from other countries with similar living standards. The biggest bones of contention have been the lack of choice of pension fund and the low current benefit level of many pensioners.

The main theme of this paper is the pension funds' capital assets and their development. It begins by describing the financial position of the funds with some historical background, followed by an estimate of their size 20 years hence. The performance of fully funded schemes is governed by both demographic and economic factors. Decisions on contributions and pension benefits depend on projections of these factors many decades ahead. Examples of the effects of some factors are given, with a discussion of the uncertainties surrounding them and their impact on the funds' operations.

The financial position of the pension funds

The main role of pension funds is to provide their members with sufficient income after they retire. Funds also pay survivors' and disability benefits. The pension system is commonly divided into three pillars. The first pillar is the pay-as-you-go system based on payments by public institutions – in Iceland, the State Social Security Institute – which are funded by tax revenues. The second pillar constitutes fully funded pension funds with mandatory membership and the third pillar is based on fully funded pension saving schemes with voluntary membership.

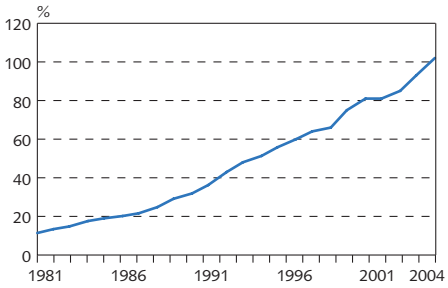
In Iceland, the main pillar consists of pension funds with mandatory membership. The present Act on the Mandatory Guarantee of Pension Rights and the Operation of Pension Funds dates from 1997, with subsequent amendments. It contains provisions for a minimum contribution amounting to 10% of wages, which for a time was the most common level, although most funds now stipulate a higher rate

4. FME: Lífeyrissjóðir. *Ársreikningar 2004 ásamt kennitölum og öðrum upplýsingum*. [Pension funds, Annual Accounts for 2004 and other information] Reykjavík 2005.

for contributions. Article 4 of Act No. 129/1997 is now more relevant. It states that "the minimum insurance benefits provided by a pension fund, based on a 40-year contribution period, shall amount to 56% of the monthly wages for which contribution is paid, as a monthly old-age pension for the duration of life from such time as the pension is first paid, but no later than from 70 years of age." According to Regulation No. 391/ 1998, on the Mandatory Guarantee of Pension Rights and the Operation of Pension Funds, this provision is construed as a minimum benefit of 1.4% p.a. under linear benefit rules and an average of 1.4% per annum under age-related rules.

Icelandic pension funds have undergone major changes in recent decades. Most employees became members of pension funds after 1970, paying a contribution of 10% of their basic wages. Separate funds operated for different occupations and trade unions. Pension funds for public sector employees and some professions were considerably older. This arrangement has undergone various changes. The self-employed joined the system in 1980 and from 1987 to 1990 it was extended to cover all wages. The FME supervises the operations of pension funds and publishes reports on them.

Chart 1
Average net assets as a % of GDP



Source: Central Bank of Iceland.

Size of the pension funds

Table 1 shows the size and scope of the general pension funds and total funds by the end of 2004 as well as figures from their statement of payments.

Table I Size and scope of pension funds at end-2004

In b.kr.	*General pension funds*[1]	*Total pension funds*
Net assets	738.8	986.5
Contributions	42.9	75.1
Operating and investment cost	2.0	3.0
Pensions, total	16.4	31.1
Old age	9.9	20.8
Disability	4.5	5.2
Surviving spouse	1.7	4.7
Surviving child	0.3	0.3
Other	-	0.2

1. General pension funds accept mandatory contributions and employers do not guarantee their commitments.

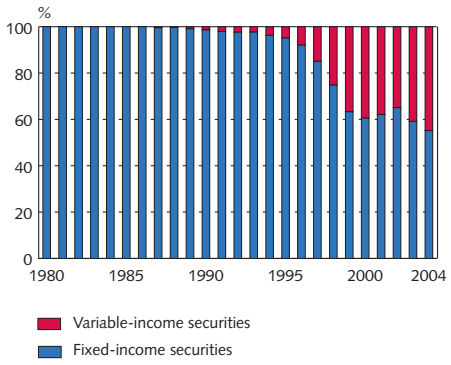
Source: FME (2005).

Table 1 shows that net assets of the pension funds amounted to 986.5 b.kr. at the end of 2004; the average over the year was equivalent to just over 102% of annual GDP. Chart 1 shows the rapid growth in net assets in recent years. Growth stagnated relative to GDP in 2001, however, when a global downturn in equity prices caused substantially negative returns.

The composition of pension funds' securities portfolios has changed sharply over the past ten years. Variable-income securities accounted for only 5% of total portfolios in 1995 but had reached 45% in 2004, as shown in Chart 2.[5]

5. Variable-income securities yield market rates of return and consist of equities and units in mutual funds and investment funds. Fixed-income securities carry a fixed interest rate.

Chart 2
Pension funds' securities portfolios
1980-2004



Source: Central Bank of Iceland.

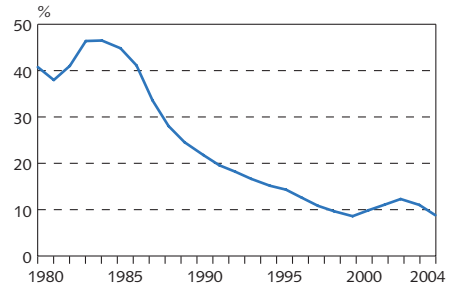
Roughly half of the variable-income securities in the funds' portfolios in 2004 were issued by non-residents.

Table II Assets of pension funds

	Position in b.kr. at end-1995, at 2004 prices	*% of net assets*	*Position in b.kr. at end-2004*	*% of net assets*
Fixed-income securities	313.2	87.4	524.3	53.1
Housing bonds	197.4	55.1	285.2	28.9
Variable-income securities	16.2	4.5	426.0	43.2
Domestic	10.5	2.9	215.2	21.8
Foreign	5.7	1.6	210.8	21.4
Other	28.9	8.1	36.2	3.7
Net assets	358.4		986.5	

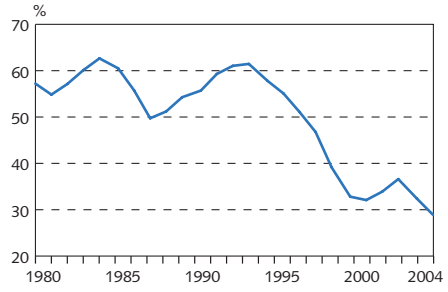
Source: Central Bank of Iceland.

Chart 3
Loans to members as a proportion of
pension funds' net assets 1980-2004



Source: Central Bank of Iceland.

Chart 4
Housing finance investments as a share
of pension funds' net assets 1980-2004



Source: Central Bank of Iceland.

Mortgage financing

Pension funds have taken part in mortgage financing in Iceland in two ways. One has been by providing fund members with loans secured against residential housing, the development of which is shown in Chart 3. The pension funds' other form of involvement in mortgage financing has been through the purchase of securities that have been issued to finance the state housing loan system. This began when Act No. 54/1986 made it mandatory for pension funds to allocate a specific share of their disposable capital to buy bonds issued by the then State Housing Fund. Housing bonds and housing authority bonds were introduced in the first half of the 1990s and pension funds immediately started to invest in them. In the following years they allocated around a quarter of their disposable capital for this purpose. In 1997 there was a marked decline in these investments, coinciding with a new focus on foreign investment. When housing bond issuance was discontinued in 2004 and replaced by the Housing Financing Fund's HFF bonds, the pension funds immediately swapped a substantial share of their housing bond portfolios for the new instruments and have continued to buy them on some scale.

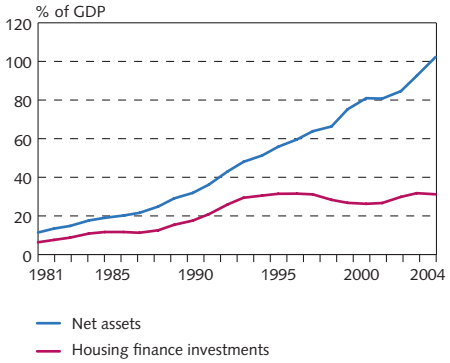
Chart 4 shows how the pension funds' housing-related investments have contracted over the past decade as a proportion of their net assets. One reason is diversified investment opportunities through access to foreign markets: also, the stage was reached where funds provided all the necessary financing for mortgages with the collateral that they and the HFF required. This was a fine investment option, but the funds had additional capital that they needed to invest.

Mortgage financing investments have remained quite steady as a ratio of GDP over the past decade at 26-31%, based on the annual average position, as shown in Chart 5. Over the same period, the ratio of net assets to GDP doubled from 51% to 102%. Pension funds hold 41% of the HFF's bond issues (housing bonds, housing authority bonds and HFF bonds) and 47% of total bonds issued on Iceland Stock Exchange (ICEX). They also hold the bulk of domestic bond issues by deposit money banks.

Foreign securities portfolios

In the beginning of 1995, investment in foreign securities by Icelandic residents was finally deregulated in full. However, pension funds did not begin investing outside Iceland to any degree until 1997. Since then their foreign portfolios have swollen steadily to account for 22% of their total net assets by the end of 2004. The leading fund in terms of foreign investments had close to one-third of its assets in the form of foreign securities. Funds still have some scope left for foreign investment before they reach the 50% ceiling on foreign currency positions relative to net assets which is laid down in Act No. 129/1997. In effect they could invest more than 50% of their net assets in foreign portfolios if they hedge against the currency risk.

Chart 5
Pension funds' housing finance investments and net assets 1981-2004



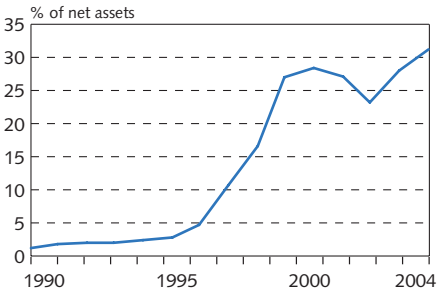
Source: Central Bank of Iceland.

Equities and equity funds

By far the largest component of pension funds' foreign portfolios is in equities, both in specific companies and equity funds. For the past five years, equities have accounted for around 80% of their foreign securities portfolios and 17-18% of net assets. A downturn in equities prices, such as the global slide of 2000-2002, therefore has a considerable impact on the funds' investment returns, which turned negative over that period when price rises unwound.

Total investments in domestic and foreign equities and equity funds have surged over the past decade and a half. In 1990, they accounted for only slightly more than 1% of net assets, but by the end of 2004 had soared to 31%, as Chart 6 shows.

Chart 6
Pension funds' portfolios of equities and equity funds 1990-2004



Source: Central Bank of Iceland.

Comparison with the Netherlands

Increased equity investment by Icelandic pension funds resembles the trend in other countries, for instance in the Netherlands, where equity holdings had reached 40% of total assets by the end of 2000.[6] A consequence of this changed portfolio composition has been to leave pension funds more susceptible to fluctuations in equity prices, as evidenced by their performance in both Iceland and the Netherlands.

Thus the actuarial position of pension funds in both countries deteriorated markedly over the period 2000-2003. The position of the Icelandic funds continued to decline in 2004, and at the end of that year was negative for a total of 27 of the 40 mutual pension funds (or "mutual pension divisions", as they are termed under the FME classification) that operate without external guarantees. While fluctuations in equity prices cannot be blamed entirely for the funds' poorer position, they clearly were a contributing factor.

The Dutch pension fund system resembles Iceland's in many respects. Membership is mandatory and pension funds are intended to provide a large proportion of pension payments, although less than in Iceland. The system is strongly occupational-related in that employees must be members of particular pension funds, as is also the case in Iceland. This impedes competition between funds. Supplementary pension saving schemes were launched earlier in the Netherlands, and

6. van Ewijk, Casper and Martin van de Ven: Pension funds at risk. *CPP Report* 2003/1.

by 1996 the overwhelming majority of its labour force had already entered into them. The main reference for indexation of pensions in the Netherlands is the wage index, while in Iceland the consumer price index is the norm. In spite of the strong financial position of the Dutch pension funds, problems are foreseen in connection with the growth in the number of pensioners caused by increased longevity. At the same time, the number of employed is falling. Furthermore, mobility of labour in the Netherlands entails risks for the pension funds, since employees have the opportunity to avoid funds that have been weakened by factors such as unfavourable age distribution, possibly even by moving abroad. Employees are increasingly likely to do so in order to avoid losses that may result from the problems facing many funds. In Iceland, public sector employees have long enjoyed better pension rights than private sector employees. If some general pension funds apply age-related benefit rules and others fixed rules, a new incentive is created for employees to choose jobs on the basis of the pension rights accompanying them.[7]

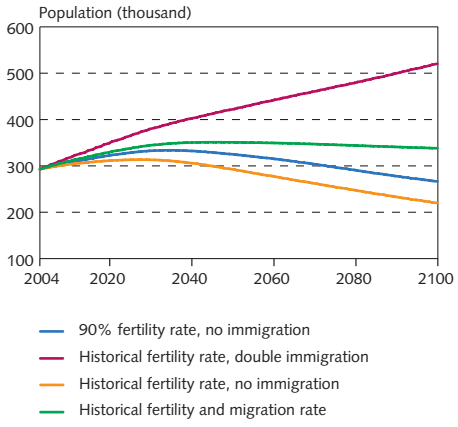
Demographics

Future prospects for the pension funds are contingent upon factors including the age distribution of members and their life expectancy. The base year for the following calculations is 2004, after which population figures and age distribution are projected on the basis of the fertility rate, expected mortality rate and migration. The baseline model uses averages calculated from measurements by Statistics Iceland[8] for 2001-2004 except for migration of foreign nationals, where the year 2004 is excluded as probably atypical because of large-scale aluminium industry construction projects then.

The baseline model assumes that the number of immigrants and emigrants will be the same percentage of the total population of a given age as in the measured years. This is a reasonable assumption in the case of migration by Icelandic nationals, although other factors obviously come into play, in particular the economic situation in Iceland compared with the countries to which they tend to move. No immediate yardstick is available for the number of foreign nationals migrating to or from Iceland, but the adopted rule provides as good a working model as any and entails that the pattern in 2001-2003 will broadly continue in the future.

During the reference years, considerably more Icelandic nationals emigrated than returned from abroad to live in Iceland again. On the other hand, more foreign nationals moved to Iceland than left it, so that the overall impact of migration is slight. Chart 7 shows several scenarios for population growth until 2100. It includes population growth projections based on a zero or double migration rate for foreign nationals. The fourth scenario assumes an unchanged historical rate of migration but a drop in the fertility rate to 90% of the level in 2001-2004.

Chart 7
Projected population 2004-2100



7. Gudmundsson, Gudmundur: Prospects of Icelandic pension funds. *Central Bank of Iceland Working Papers* No. 6 (2000).

8. Data from Statistics Iceland are used extensively throughout this paper. Some are taken directly from Statistics Iceland's website, but the authors would also like to thank the bureau's employees who have provided other statistics from its database.

Chart 8 shows the proportional division of the population into people of working age and retirement age. The current group aged 67 and over is equivalent to a little more than 17% of people of working age which means that, under a pay-as-you-go system, the working population would need to allocate more than 12% of their earnings in order to provide the retired with a pension equivalent to 70% of the earnings of the employed. The percentage of population of retirement age will increase according to this forecast and the cost of a pension benefit level of 70% will approach 26% of wages.

The fertility rate has been falling for some time, in line with the trend in other countries. Chart 9 presents a scenario where population growth follows the baseline assumptions except that the birth rate is set at 90% of the average for 2001-2004. This should not have much impact on the performance of fully funded pension funds, but under a pay-as-you-go system the cost of a 70% pension would be close to 29% of wages.

Longevity has been steadily increasing in Western countries due to improved living conditions and medical advances in both the cure and the prevention or delay of diseases. As the retirement age has not been increased, this is is detrimental to the pension funds' finances, as discussed later. While this trend could continue – for example, there is still scope for reducing smoking – the possibility of a halt or reversal cannot be ruled out either. Affluence encourages obesity, and a sedentary lifestyle and the emergence of new infectious diseases or drug-resistant strains of older ones could raise the mortality rate among younger age groups.

General pension funds currently pay half as much in disability pensions as in retirement pension payments. The increase in the number of disabled persons in Iceland has been much discussed, but will not be addressed here. The disability expectancy used in the present calculations and shown in Chart 10 is mainly based on data from Herbertsson (2005), with a slight adjustment for the oldest age groups where statistics showed a higher rate of disability expectancy for 60-64-year-olds than for 65-67-year-olds. This is treated as a temporary irregularity in the data and the probability is levelled out to produce an increase until retirement age.

Chart 8
Age distribution in baseline population forecast 2004-2100

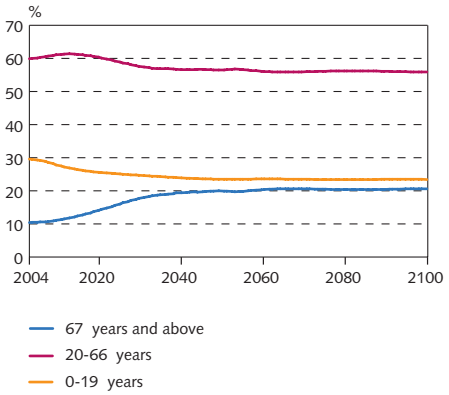
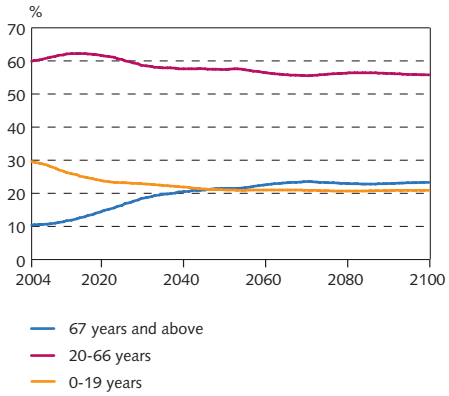


Chart 9
Age distribution if fertility rate falls to 90% of the average over 2004-2100

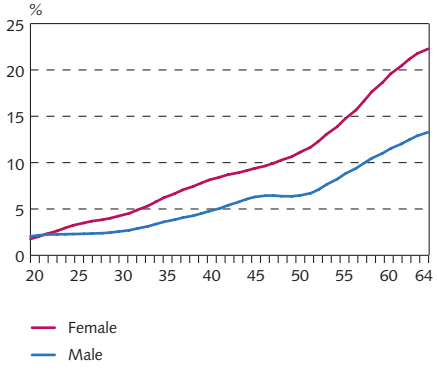


Interest rates

Returns on domestic portfolio investments have been highly volatile over the period that pension funds have operated. Historical data have little predictive value for domestic interest rate developments and will not be discussed here. In real terms, domestic bonds currently carry higher interest rates than foreign bonds, but the margin has narrowed. The interest-rate differential with abroad is likely to shrink further with the globalisation of Iceland's financial markets. Because of the currency risk, however, as a rule interest rates may be expected to remain higher on króna-denominated bonds than on comparable bonds denominated in major currencies.

Pension rights are price-indexed and indexed bonds have hitherto accounted for a large share of the funds' asset portfolios. A report

Chart 10
Disability expectancy



Source: Based on Herbertsson (2005).

on the impact of indexation on Icelandic pension funds has recently been published.[9]

Foreign portfolio investments by Icelandic pension funds have grown rapidly since 1997 and their share of the funds' total assets is likely to increase even further. Returns on these investments have fluctuated sharply, as discussed later.

Wage changes

In the long run, changes in productivity are the main driver of changes in real wages. Parity is assumed here, although this does not strictly hold. An increase in productivity will earn people higher wages than earlier in their lives. In a system where contributions are a fixed percentage of lifetime earnings, pensions will therefore be a small percentage of the wages of the employed if productivity increases strongly. In that case, pension fund contributions would need to be a larger proportion of wages if conditions or rules are set requiring pensions to be based on wages in the labour market,

Age-related pension rights

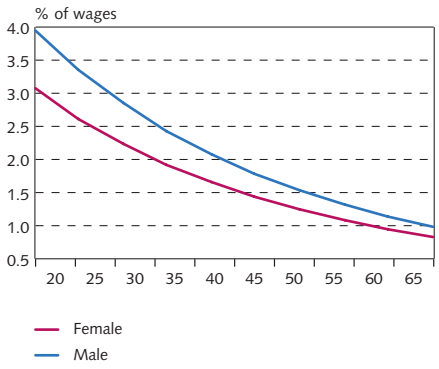
Some pension funds have adopted an arrangement whereby the pension rights which members acquire for the same contribution differ according to their age. Presumably they have opted to do so on grounds of fairness. The guiding principle would be that it is unfair if the return on invested contributions by those who join the pension fund at a young age were used to pay the pensions of members who join at a later point in their working life.

The aim behind age-related rights is for each contribution to create an entitlement corresponding to the amount of pension that it is expected to be sufficient to cover. Thus in order to evaluate the benefit level generated by a contribution at a given age, real interest rates need to be forecast until pension payments cease, along with expected mortality rate, rules for retirement age and other probable outlays that the fund might incur on account of its members.

Chart 11 presents an example of age-related entitlement. For simplification's sake, disability and retirement pensions are the only outlays assumed. The baseline assumptions for life expectancy are used, but the benefit levels are calculated separately for males and females. Survivor's pensions, which cost funds more on account of males, are not included; nor are operating expenses, which are presumably the same for both sexes. The graphs therefore show a slightly larger difference between the benefit levels generated by the respective contributions of males and females than would be the case in a real fund under current rules. Disability and old-age pensions are much larger expenditure items, however, creating a large real difference due to higher longevity of females and their greater likelihood of disability. Pensions are shown as a percentage of wages on which a 10% contribution is paid.

It is difficult to restructure pension fund arrangements without affecting members unequally. In addition to general provisions of law

Chart 11
Age-related acquisition of pension benefits[1]



1. Assuming a contribution 10% of wages and 3.5% real interest rates.

9. Herbertsson, Tryggvi Thór: *Greinargerð til Landssamtaka lífeyrissjóða* [Report to the National Association of Pension Funds], November 2004.

which might apply to them, such changes would need to fulfil requirements for minimum coverage. A switch from a flat-rate system to age-related benefits may obviously have major but varying impacts on individual members depending upon their age, which must be kept in mind during the changeover.[10] The following is an examination of the impact of various uncertainties that must be taken into account for age-related pension rights.

Calculations of the pension rights generated by contributions from a 25-year-old member need to incorporate the probable mortality rate from the age of 25-100 and disability expectancy from 25-65. The death and disability expectancies that would have been assumed 30 years ago would be inappropriate now and there is likewise little reason to presume that the current criteria are any more universal. The most serious uncertainty, however, concerns capital income.

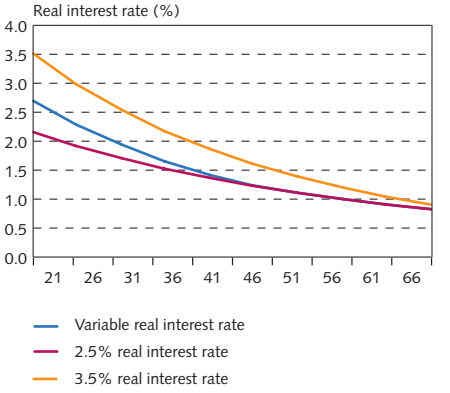
Differences in accrued age-related pension rights are determined by real interest rates. In order to calculate how benefits change according to age, the real interest rate curve needs to be known from the time that the contribution is paid until the last pensioners from that age group die. The age-related pension rights that are currently being generated are based on the pension funds' projections for real interest rates until beyond the year 2080. In Iceland, a real interest rate of 3.5% is customarily assumed in long-term forecasting. Chart 12 shows the average curves calculated for males and females based on three assumptions for real interest rates. The uppermost and lowest curves show the outcome assuming real interest rates of 3.5% and 2.5% respectively. The centre curve shows the rights generated if the interest rate is lowered by 0.1 percentage point annually from 3.5% to 2.5% after the age of 40, then set at 2.5% from 50 onwards.

Pension funds lack the knowledge required to forecast interest rate changes such as those assumed for the centre curve 20 years ahead. A more probable forecasting approach under these conditions would be to assume an interest rate of 3.5% until it began to fall. It is assumed here that the drop and subsequent constant rates of 2.5% are forecast correctly.

A drop in interest rates requires pension funds either to reduce pensions or increase contributions, regardless of whether the benefit level is fixed or age-related. Since the pension funds' scope for achieving balance by lowering the pension amount is limited by legal provisions on minimum pension, the following examination is confined to the option of raising contributions.

If contributions are raised to counter lower investment returns for a fund applying flat-rate benefit rules, the most obvious course would be to set the new contribution so that it earns the same number of pension points for the same wage as under the older rate, thereby leaving the pension unchanged as a percentage of wages. Those who already are retired will retain their original pension amount without making additional contributions. In this way, all members receive the same pension for the same lifetime earnings, but the younger ones will pay higher contributions for the same benefit level. A partial justification for the

Chart 12
Age-related acquisition of pension benefits[1]



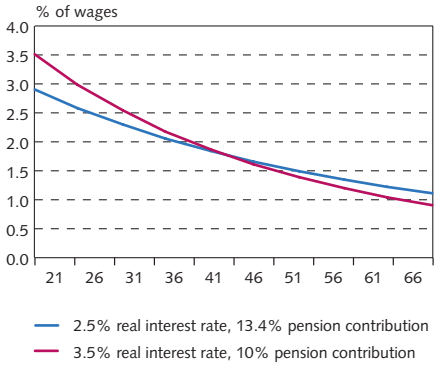
1. Based on average mortality and disability expectancy for males and females, a pension contribution of 10% of wages and three assumptions for real interest rates.

10. Gudmundsson, Bjarni. 2004

relative advantage enjoyed by older members under this arrangement is that the contributions they have already paid, which granted them a proportionally higher benefit level than will be earned by the contributions remaining to be paid, have been invested at a higher return than can be expected on securities purchased in the future.

Let us now examine the case of a fund applying age-related pension rights. In order to establish a precise age-related benefit level, the reference interest rate curve would need to be altered continually to match changes in interest rates, although it would probably suffice to do this less frequently. Lower interest rates reduce the degree of changes in age-related benefit levels. The obvious approach would be to set the rate of contributions, after a change in interest rates, so that a member who participated in the scheme from the age of 27 would receive the same pension as before the change. This is shown in Chart 13, where one curve shows the benefit level before the change in interest rates and is the same as the uppermost curve in Chart 12. The other curve is based on an interest rate of 2.5% and a contribution of 13.4% towards retirement and disability pension, which provides the same benefit level as the upper curve, assuming that contributions are paid for 40 years, and that wages remain unchanged over time and irrespective of the employee's age. However, this increase in contributions is inadequate for the fund. A member aged 40 at the time of the changeover may have contributed to the fund for 20 years. He would have accrued rights based on a forecast constant future interest rate of 3.5% and has built up a large share of the benefit level that he was set to attain under the earlier rules on age-related pension rights and contribution rates. However, the change in interest rates shifts his benefit level to a different curve where a higher percentage is accrued later on during his working life. This employee's total pension will therefore be higher than assumed according to either curve. His contribution is insufficient to pay such a pension. An obvious solution would be to reduce the accrued benefit level by a given percentage immediately that a new curve for the age-related benefit level takes effect.

Chart 13
Two paths for age-related acquisition of identical pension benefits



Consider now a fund member who is approaching retirement age and has accumulated pension rights all his working life under an age-related scheme that assumed a 3.5% interest rate throughout. This would grant a higher benefit level at first than under the new curve but a lower level later on, and his total entitlement is consistent with the fund's targets. This particular member would suffer an unexpected cut in pension income but have no scope to respond by increasing his personal savings. If the fund's benefit levels are close to the minimum mandatory requirement, it would actually be illegal to reduce his benefit level.

The interest rate change in this hypothetical example is smaller than those which pension funds have experienced hitherto or may expect in the future.

Future prospects

General pension funds

A model has been designed for a fund which broadly resembles the general pension funds, using contribution and pension payment data

corresponding to real values for 2004. The model can be used to forecast the development of the funds and examine factors that affect them. Life expectancy and fertility rates follow the baseline model described above unless otherwise stated. The breakdown of income is based on data compiled by Statistics Iceland from tax returns, which should therefore correspond closely to the income from which pension fund contributions are paid.

The model assumes that fund members start paying contributions at the age of 18 and retire at 67. Average income figures include all those who file tax returns for income from paid employment and presumably give a reasonable picture of a situation in which many of the younger year groups attend school. Some members retire before the age of 67 and others later, but persons receiving only pension income are excluded from calculations for average income, so that the figure used should also be quite appropriate.

The general pension funds' income from contributions in 2004 corresponds to payments being made by 83.8% of people of working age, and this figure is used in the projections.

Calculations of disability and retirement pension rights assume that the fund began operation in 1970. Funds did not include the self-employed until 1980. Initially, contributions were paid only from basic daytime wages, but contributions from overtime pay were phased in over 1987-1990. Benefit levels which the contributions would provide were supposed to track wage developments, but price-indexation was eventually adopted. By calculating the benefit level according to wage developments and assuming a linear development from 1970, estimated accrual of pension points and payment of contributions on 83.8% of income from employment, the model fund should have paid 15.4 b.kr. in pensions in 2004. In actual fact, the general funds paid just under 9.9 b.kr. The main explanation for the discrepancy is presumably that contributions were not paid on certain income. For projections, the benefit level from the starting date in 2004 and its distribution across age groups need to be known. All the above calculated pension points from prior years were reduced by 6.7% with an additional 2% annually from 2003 back to 1970, to match the historical amount of pension payments for 2004.

Disability pension is based on accumulated benefits and estimated benefit levels until retirement age had the disability not occurred. On the assumption that a 100% level of disability was involved in all cases, calculated pensions amount to 13.3 b.kr., compared with the 4.5 b.kr. actually paid by the funds. The funds pay pensions to members with 50-100% disability, but it is clear that their benefit level is much lower than would be estimated from average wages and benefits. For projections of disability pensions, the method of calculation is therefore retained but multiplied by the ratio of paid to calculated benefits in 2004.

Table 3 shows a number of projections based on the above model. All amounts are stated at constant prices based on the level in 2004. Productivity and wages are assumed to rise by 1% annually in excesses of prices. Contributions are set at 11% of wages in 2005 and then calculated so that the benefit level from that year inclusive

Table III Contributions, total assets and old-age pensions as % of income from employment.[1]

	General pension funds					*Individual pension schemes*	
	Contribution, % of wages	*Total assets b.kr.*	*Total assets b.kr.*	*Old-age pension, % of wages*	*Old-age pension, % of wages*	*Total assets b.kr.*	*Total assets b.kr.*
Year		2015	2025	2015	2025	2015	2025
Baseline model	12.0	1,477	2,213	0.322	0.396	399	684
Interest rate cut from 3.5% to 2.5%	15.3	1,653	2,549	0.322	0.396	396	652
2% productivity increase	12.3	1,534	2,429	0.295	0.343	415	750
Average lifespan prolonged by 1 year	12.7	1,516	2,305	0.322	0.396	399	686

1) The baseline model assumes a real interest rate of 3.5%, a productivity increase of 1%, and the same life expectancy as in the baseline model in Chart 7. The baseline model assumptions are used in the other projections, but with one variable changed.

is 1.4% of wages and that the fund and future contributions to it will exactly cover the current benefit level of members and the benefits that they will earn in the future. No new membership is assumed in these calculations, but added in the following projections.

In pension funds today, benefit levels are either fixed, as assumed here, or age-related. Both systems have a fixed contribution rate for all age groups and must fulfil legal requirements for minimum coverage. The size of the funds and final pension amount should therefore not be affected by the simplifying assumption of a fixed benefit level.

The contribution in the baseline model must be 12.0% after 2005. As the calculations are based on the minimum permissible benefit level, the model fund's performance is probably marginally poorer than shown by the real funds. Several explanations are possible, including the real funds' rather more favourable age and sex composition compared with the hypothetical model, since more women belong to the public sector pension funds than the general funds, and employees start working there later in life. The model assumes the same number for each age group and sex as in total figures for the entire population. The development of the fund based on 2004 prices is shown in Table 3. It grows from 740 b.kr. in 2004 to 1,400 b.kr. over the next 10 years. The average benefit level of this year's retirees is roughly 22% of the wages of the working population aged 40-60. In 2015 these benefit levels will reach 32% and almost 40% in 2025, heading towards 46%.

In addition to the baseline model, three scenarios are given with one variable changed in each and the others the same. In one scenario real interest rates undergo a linear reduction from 3.5% to 2.5% over the period 2010-2029, then are kept constant at 2.5%. Another scenario assumes a 2% increase in productivity and the third a change in life expectancy whereby fund members live on average one year longer than assumed in the baseline model. As may be seen in Table 3, an interest rate cut of one percentage point requires the contribution to be raised by 3.3% of wages, producing considerable growth in the funds' size. Changes in productivity and corresponding wage increases have little impact on contributions as the legal provision on minimum coverage is interpreted here. However, they do have a substantial effect on the ratio between the incomes of pensioners and the employed.

Individual pension saving schemes

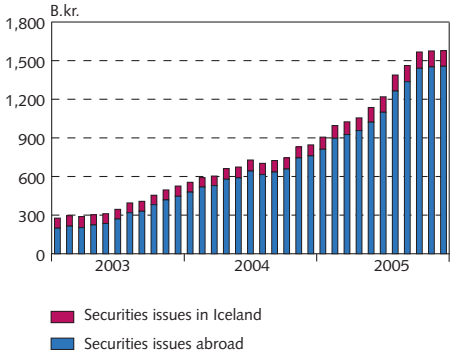
Individual pension saving funds held assets of 110 b.kr. at the end of 2004 and their income from contributions that year was 17.3 b.kr. This figure includes savings schemes offered both by pension funds and other financial institutions. Under current agreements for supplementary pension saving plans, an employee may make a voluntary contribution equivalent to 2% of wages which must then be matched by the employer. This arrangement is so beneficial for employees that participation is likely to increase even further. The assumptions for a model to evaluate the future development of savings funds are more uncertain than for general funds. Although the majority of the population of working age has now joined savings funds, they are not mandatory. The sex and age distribution of neither the contributors nor present deposit holders is available.

Scheduling of payments from individual pension saving schemes is highly uncertain. Members may withdraw pension as an annuity between the ages of 60 and 67. After that age, remaining savings may be withdrawn in a lump sum or converted into a lifelong annuity. Thus the savings funds have certain features of mutual pension funds. (It will be a tough actuarial challenge to determine the amount of a lifelong pension. By the time that members choose whether they want to exercise that option or withdraw the whole deposit, they will have a good idea about their life expectancy. Many who do not have long to live will know that their life expectancy is low and will withdraw their savings immediately. Others with no symptoms of serious illness and a family history of longevity may opt for a pension for the rest of their life. Statistical life expectancy is thus an inadequate criterion for calculations).

Individual pension saving funds will be smaller than mutual pension funds for the same contribution. They pay out the accumulated savings of those who die or become disabled before they reach retirement age, and old-age pensions of retirees who decide against a lifelong pension are paid out much earlier than by mutual pension funds. Projections divide the assets of individual pension schemes as of 2004 among the population in proportion to the average income of each age group and sex. The contribution in 2004 corresponds to an average of 3.7% of wages and this ratio is used in the projections. Nonetheless, little is known about how members will choose to withdraw their deposits. The scenario presented here shows the pension amount and size of the fund based on withdrawal of the entire deposit at the age of 67. The deposit would be lower and the fund's total assets correspondingly smaller if all members started to withdraw their savings at the age of 60. Conversely, the fund would be larger and its pension payments higher if all members contributed over a full working life and then converted their savings to an indexed lifelong pension plan.

Mutual pension funds with employer guarantees held assets of 166 b.kr. at the end of 2004. Large as these assets may seem, they still fall far short of meeting the funds' commitments. The central and local governments guarantee these commitments and decide to what extent they set up funds to cover pension payments or whether to operate them on a pay-as-you-go basis out of their own tax revenues. No model is proposed here to estimate the size of these funds in the coming years.

Chart 14
Deposit money banks' securities issues
January 2003 - September 2005



Source: Central Bank of Iceland.

Allocations by the pension funds

Over the next 10 years the Icelandic pension funds will need to invest around 1,000 b.kr. at present price levels, or close to the value of one year's GDP, over and above their current assets. By comparison, Norway's Government Pension Fund (Petroleum Fund) is equivalent to around 60% of that country's GDP. The main investment options will be examined below.

Mortgage lending by pension funds has been quite stable over the past decade as a ratio of GDP, at 26-31%. Over the same period their net assets relative to GDP have doubled from 51% to 102%.

Banks started offering mortgage loans with new and easier terms in August 2004, prior to which they had only lent against property on a small scale. By the end of September 2005 their outstanding stock of new mortgage loans was 281 b.kr. The HFF has financed part (27%) of the bank's lending by purchasing loan agreements from them. Banks appear to have financed the remainder of their mortgage lending with bond issuance abroad. From the launch of bank mortgage loans in August 2004 to the end of September 2005, their foreign bond issues increased by 798 b.kr, see Chart 14.

The changes in the mortgage market brought about by the banks' initiative were so sweeping and swift that their effect on domestic lending by pension funds remains unclear. Long-term mortgage loans are well suited to pension fund operations. With a 65% loan-to-value ratio they represented a particularly safe investment. By raising the ratio to 90-100% and lowering mortgage interest rates, the banks captured a substantial share of this market and expanded it at the same time. However, a 90% loan-to-value ratio pushes these loans into a high risk category[11] – Landsbanki Íslands has since brought it back down to 80%. Pension funds could back up the banks in their mortgage activities, but would then have to compete with foreign capital markets for interest rates.

Pension funds are already very active in the domestic market. They own around 12% of all equities listed on ICEX. Of total market bonds, they hold around 47%. For example, they hold 41% of all bonds issued by the HFF (housing bonds, housing authority bonds and HFF bonds), compared with 32% held by the banks. It is therefore not immediately obvious what domestic investment opportunities are available to pension funds for deploying the large funds they will have at their disposal over the coming decades. A likely candidate for investment would be large-scale power projects. In its annual report for 2004, Landsvirkjun (the national power company) reported liabilities of 102 b.kr. and equity of 51 b.kr. Construction cost of the Kárahnjúkar hydropower plant with an installed capacity of 690 MW is roughly 90 b.kr. Since the combined capacity of other Landsvirkjun power plants is 1,215 MW, they would seem to be undervalued by the accounting methods adopted.

Another option that might be available would be for banks to increase their domestic issuance of bonds and sell them to the pension funds. As shown in Chart 14, the banks have focused on bond issu-

11. Gudmundsson, Gudmundur (2005): Risks in higher loan-to-value ratios of housing. *Monetary Bulletin* 2005/2, 57-62.

ance in foreign markets, where over 90% of their issues have been made. The pension funds already hold the bulk of the banks' domestic issues so far. The implication of these potential domestic opportunities is that pension funds will gear up their investments abroad. Thus returns on foreign securities will be crucial for their future.

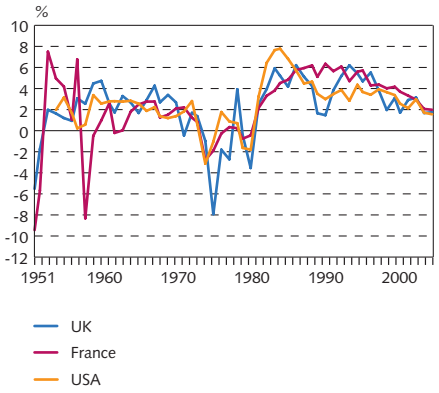
Iceland's investment requirement is not different from that of comparable economies. Building up the Icelandic national pension system seems impossible without large-scale investment abroad. Thus establishing a global pension system (or even for only the more affluent countries) along these lines is out of the question, because there would be no way to build up the requisite funds. However the current level of pension saving could probably be increased sharply in many countries.

Icelandic pension funds have not bought foreign bonds to any degree. The reason is that ever since they started investing abroad, real interest rates on foreign bonds have been significantly lower than those on Icelandic bonds. Chart 15 shows real interest rates for Treasury bonds from three countries. In recent years they have been under the reference rate for long-term returns of 3.5% p.a. on which the pension funds' contributions and benefit levels are based. Historical experience does not suggest that rates are likely to rise to a sustainable long-term level of 3.5%. When interest rates were considerably higher in the 1980s, this was explained by the huge US budget deficit then. Afterwards they fell back and are still low in spite of the huge fiscal deficit now. There is no discernible trend in real interest rates on US Treasury bonds over the past half-century (1957-2004) – their estimated average interest rate is 2.7% with a standard deviation of 0.7%. This means that even if the features of the real interest rate curve are assumed to remain unchanged, a 95% confidence limit leaves the annual mean value in the range 1.4-4.0%.

Foreign investments by pension funds have mostly focused on equities. Chart 16 shows several international share indices. Chart 17 shows the rise in share indices for three countries in real terms, deflated with the CPI. An estimate of average US equity price rises for the same years as the Treasury bonds shows an average increase of 2.7% in real terms. There are no indications of any change in the mean value or irregularities in the data series. Given that equities also earn dividends, this would have been an acceptable investment. (By extending the sample to include 1955 and 1956, the average increase would have been 3.6%). However, the standard deviation is 2%, leaving a 95% confidence limit in the range -1.3% to 6.7%. The reason for this high degree of uncertainty for the average increase even across such a long series is the irregular character of equity price changes. Some scope is at hand for regularising returns by diversifying investments across countries and currencies, but as the graphs show, equity price changes are so strongly correlated that diversification has only a limited impact. The history of returns on US stocks has in fact been traced back to 1802 and they have normally been high (Siegel 2002). But given the high degree of irregularity, the above figures indicate the magnitude of inaccuracy in the 50-year forecast for average investment returns.

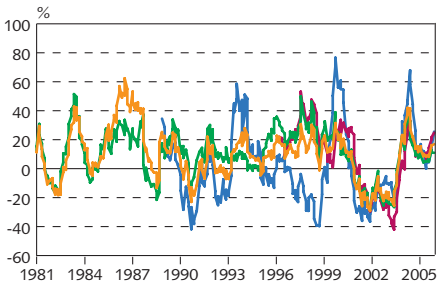
Limited investment opportunities in Iceland make it foreseeable that foreign securities will account for a growing proportion of the

Chart 15
T-bond real interest rates 1951-2004



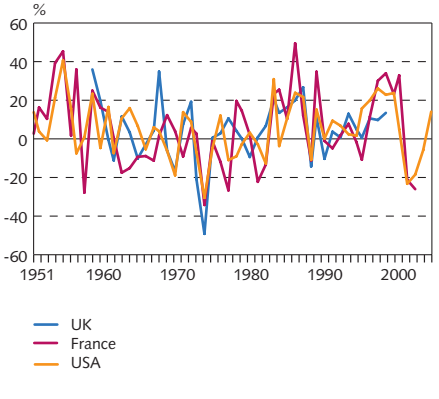
Source: IMF-IFS.

Chart 16
MSCI indices January 1981 - September 2005
12-month increase



Source: Bloomberg.

Chart 17
Equity price increases in real terms 1951-2004
US and UK indices are for manufacturing sector only



Source: IMF-IFS.

pension funds' total assets. It is worth pondering the impact on the funds if they were to exercise in full their statutory authorisation for investment in equities, which sets a ceiling at 50% of their net assets – in particular given the impact of the burst equity bubble in 2000-2002, even though only 27-28% of the funds' net assets were invested in equities at that time. At the end of 2004, around 31% of the pension funds' net assets were invested in domestic and foreign equities. When the 50% limit has been reached, and assuming that the legal framework remains unchanged, they will have to turn to foreign bonds or mutual funds that invest in bonds in order to generate returns.

Although data for the past half-century give no particular indication of a change in the character of real interest rate curves for Treasury bonds or in the real value of equities in advanced economies, it would be imprudent to place too much faith in the predictive value of that period for the coming half-century.

The pension situation in the advanced economies (and also India and China) will probably have a substantial impact on returns on capital for both bonds and stocks (Saarenheimo, 2005). Measures to increase the level of saving in pension systems have been advocated which would lead to the creation of funds that demand securities, causing interest rates to drop. The public is likely to foresee a cut in pensions from the public systems, prompting people to try to save for their old age with the same effect as establishing pension funds. Governments could, at least in the short run, pay for old-age pensions by issuing bonds, which would drive up interest rates on them.

Industrialised countries have experienced robust economic and productivity growth during the period that Icelandic pension funds have been operating, but considerable fluctuations can be seen over shorter periods. Technical advances and peace are important explanations for economic growth. It seems natural to assume that both will continue in the years to come.

One factor driving the economic growth that has prevailed since even before the Icelandic pension funds began operations has been non-sustainable energy consumption. After being forecast for decades, oil shortages are now starting to be felt. Consumption of oil and of coal, which is in large supply, also create problems because of the greenhouse effect. In addition to changes in age distribution, tighter supply of energy and higher prices for it are among the surest factors in forecasts for how the economic climate will alter over the next few decades. The effect will be to dampen economic growth and, other things being equal, slice into business profitability and equity prices. But more expensive energy will also stimulate significant changes in production methods, communications and housing. For instance, less energy is required to catch cod by longlining and netting than by trawling. Energy consumption can also be reduced by sharing cars. Such changes call for investment and capital, which will contribute to higher interest rates. The global energy shortage raises the value of Iceland's sustainable energy resources, which are in much larger supply than the present population needs. Migration will probably even out the difference in national income per capita between Iceland and Europe.

Saving

If the pension funds' forecasts of 3.5% real interest rates hold, Iceland's pension outlays of roughly 12% of wages to mutual pension funds, 4% to individual pension saving schemes and the cost of pension paid by the State Social Security Institute will be much lower in total than would be needed to secure the same pension under a pure pay-as-you-go system. In fully funded funds, age distribution is not of great importance, but high retirement age and capital income are the most important factors in keeping down the cost of pension payments. Funds grow for as long as members reach retirement age without having attained full benefit levels. Subsequently the size will change in pace with population developments, age distribution, productivity and adaptation to interest rate changes.

The Icelandic pension fund system represents huge monetary savings by individuals of working age. After the funds ceased to provide members with non-indexed loans at negative real interest rates, their return on investment has generally been strong. However, it is not self-evident that an acceptable return on a pension fund's investments will lead to the saving of real valuables. Savings are the difference between income and consumption. In the national accounts, saving is also roughly equivalent to the sum total of investment and the current account balance. A straightforward measure of the effect that pension funds have on saving is to study the allocation of their funds – whether lending is deployed on consumption, direct investment or foreign portfolio investment. Their relatively large size makes Icelandic pension funds a major force in domestic financial markets. Individuals who trust in pension funds to provide for them in their retirement need not save for their old age themselves. The pension funds' ultimate effect on saving cannot therefore be measured by studying only how they allocate their capital.

Let us look at the saving levels in countries with different pension systems. France, Italy and Germany are affluent European nations with small pension funds and are greatly concerned about the future of their pension systems. Average saving as a proportion of national income for these three countries from 1990 to 2003 was 20.4%, 20.9% and 22.3% respectively.[12] The Netherlands, on the other hand, had built up comparable pension funds to those of Iceland as a ratio of national income, and had an average saving rate of 25.4%. The Icelandic pension funds grew rapidly over this period, as Chart 1 shows, while average national saving amounted to 17.8% (and 15.2% and 13.9% in 2004 and 2005 respectively, according to preliminary figures and a Ministry of Finance forecast).[13]

Pensions of Icelandic wage earners have been low because they had not built up substantial benefit levels. Accordingly, they have hardly had less reason to save than members of the pay-as-you-go systems of other countries with generous pension schemes. Other factors affect national saving besides a country's pension system, for instance age structure (Herbertsson and Zoega, 2002). Compared with

12. International Monetary Fund (2005). *International Financial Statistics*. IMF 2005.
13. Ministry of Finance: *The Icelandic Economy 2005-2010*. October 2005.

the other European countries cited here, there were more people in Iceland under working age, and fewer people who did not work because of old age or unemployment.

To give a measure of a normal contribution by pension funds towards saving, total pension contributions to the funds amounted to 75 b.kr. in 2004 and their pension payments 31 b.kr. Since part of the pension should be met by the funds' return on invested capital which the pensioners had already accumulated, the difference of 44 b.kr., or 5% of national income, represents an underestimation of the saving that should be taking place. The above figures for saving ratios in countries with different pension systems do not indicate that Iceland is saving up more for old age than is the norm in any affluent country.

Conclusions

The Icelandic pension system is heading towards asset holdings of more than double the value of one year's GDP. Considerable uncertainty surrounds future pension system performance. The most important issue is the return on investments, because changes in it of a similar magnitude to the estimated uncertainty will have a major impact on the level of contributions required to meet the pensions that the funds are expected to pay. Changes in life expectancy and disability expectancy will have some effect, although these are not as crucial as the uncertainty over investment returns. There is no indication in the national accounts that monetary saving by the Icelandic pension system has contributed to the saving of real valuables over and above the norm for countries that finance their pensions through taxation.

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Monetary policy and instruments

The target of monetary policy

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

- The Central Bank aims for an annual rate of inflation, measured as the annual 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 once again. This report shall be made public.[1]
- 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.

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 repurchase agreements with credit institutions. Yields in the money market have a strong impact on currency flows and thereby on the exchange rate, and in the long run on domestic demand. Broadly speaking, transactions with credit institutions can be classified into fixed trading instruments and market actions.

Fixed trading instruments:

- *Current accounts* are deposits of the credit institutions' undisposed assets. These are settlement accounts for netting between deposit

Overview of Central Bank interest rates November 17, 2005

	Current rate (%)	*Last change*		*Rate one year ago (%)*
		Date	*Percentage points*	
Current accounts	8.75	October 1, 2005	0.75	5.00
Overnight loans	11.75	October 1, 2005	0.75	9.25
Certificates of deposit, 90 days	9.75	October 1, 2005	0.75	6.75
Required reserves	9.50	October 1, 2005	0.75	6.00
Repos (yield)	10.25	October 4, 2005	0.75	7.25
Certificates of deposit, 7 days (yield)	10.10	October 4, 2005	0.75	.

1. The Central Bank was to attain the inflation target of 2½% no later than by the end of 2003. In the interim the upper limit for inflation was set at 3½% above the inflation target in 2001, and 2% in 2002.

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 on the request of credit institutions and secured with the same securities that qualify for repo 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 90 days, on the request of credit institutions. Although they are unlisted, they qualify for repo transactions. Their role is to establish the floor for three-month yields in the money market.
- *Required reserves* are made with the Central Bank by credit institutions which 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 which is tied for two years or longer. 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.

Market operations:

- *Repurchase agreements* are the Central Bank's main instrument. Auctions of 7-day agreements are held every week. Credit institutions need to put up securities that qualify as collateral. Auctions can be fixed priced or auctions where total amount is announced. Fixed-price auctions have been used so far.
- *Certificates of deposit* with a maturity of 7 days are auctioned weekly. Their function is to counteract temporary surplus liquidity in the banking system. The auction format is fixed price.
- *Securities* market trading is limited to treasury-guaranteed paper.
- *Foreign exchange market intervention* is only employed 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.

Economic and monetary chronicle

September 2005
On September 15, Straumur Fjárfestingarbanki investment bank was renamed Straumur – Burðarás Fjárfestingabanki.

On September 29, the Governors of the Central Bank of Iceland announced that the Bank would raise its policy interest rate (i.e. its repo rate in transactions with credit institutions) by 0.75 percentage points to 10.25%. Other Central Bank interest rates were also raised by 0.75 percentage points. Interest rates on one-week certificates of deposit and the repo rate were raised as of October 4 and other rates as of October 1.

On September 30, Burðarás investment company was divided up and its separate parts were merged into Straumur – Burðarás Fjárfestingabanki and Landsbanki respectively, on completion of all the conditions for merger which had been laid down in an agreement from August 1. Burðarás was thereby removed from the register of companies.

October 2005
On October 1, the draft budget for 2006 was presented to Parliament. It assumed a budget surplus of 14 b.kr. The bill also presented the Government's medium-term fiscal programme for 2006-2010.

On October 3, the Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation with Iceland. The IMF Staff Report on the current economic outlook and prospects was compiled after Iceland received a regular staff visit in June. Four Selected Issues Papers were also completed on Simple Efficient Policy Rules and Inflation Control in Iceland; Some Illustrative Simulations of the Potential Impact of Income Tax Cuts in Iceland; Mortgage Market Developments in Iceland and the Role of the Housing Financing Fund; and Corporate Leverage: How Different is Iceland? On October 14, the Staff Report was published on the IMF and Central Bank of Iceland websites.

On October 3, the share capital of Landsbanki was increased by the nominal amount of 2,120 m.kr. The additional shares were delivered to Burðarás's shareholders as partial payment for their shares in that company. After the announcement, Landsbanki's nominal registered share capital amounted to 11,020,677,803 kr.

On October 3, the share capital of Straumur – Burðarás Fjárfestingabanki was increased by the nominal amount of 4,575 m.kr. The additional shares were delivered to Burðarás's shareholders as partial payment for their shares in that company. After the announcement, Straumur – Burðarás Fjárfestingabanki's nominal registered share capital amounted to 10,675,747,810 kr.

On October 3, the share capital of Straumur – Burðarás Fjárfestingabanki was reduced by the nominal amount of 316 m.kr. The reduction of shares was carried out in accordance with the agreement on the acquisition of shares in Burðarás Fjárfestingarbanki whereby shares owned by Burðarás in Straumur at the time of merger would be cancelled and the share capital of Straumur reduced accordingly. After the announcement, Straumur – Burðarás Fjárfestingabanki's nominal registered share capital amounted to 10,359,144,971 kr.

On October 31, the share capital of Kaupthing Bank was increased by 3,867,413 shares. The objective of the increase was to fulfil the terms of employee stock option agreements. The total nominal share capital of Kaupthing Bank after the increase was 6,645,530,530 kr.

On October 31, Standard & Poor's Ratings Services affirmed its AA- long-term foreign currency and AA+ long-term local currency sovereign credit rating on the Republic of Iceland. At the same time, the A-1+ short-term foreign and local currency ratings on Iceland were affirmed. The outlook is stable.

November 2005

On November 14, Landsbanki announced that all conditions had been satisfied for its acquisition of Kepler Equities SA and the transaction had been completed. Kepler Equities thereby became part of the Landsbanki group. Landsbanki acquired 82% of the total shares of Kepler Equities for 76.1 million pounds sterling (5.8 b.kr.) and will acquire the remaining shares over a five-year period.

On November 15, the joint committee of the Icelandic Federation of Labour (ASÍ) and Confederation of Employers (SA) reviewing the wage agreement between their members concluded that the price assumptions underlying the current wage agreements had not held. The wage section of the agreements was renegotiated. A one-off payment of 26,000 kr. was agreed for December 2005. This is equivalent to an additional wage rise of roughly 0.65% over the 13 months from that time. If wage settlements are not revoked in the second review in November 2006, wages will go up at the beginning of 2007 by 0.65% on top of the 2.25% originally negotiated in 2004. The social partners also agreed on principles for revising unemployment insurance. The Government of Iceland issued a declaration (see below) that it will sponsor legislation on changes agreed by the social partners and finance the measures with payments from the Unemployment Insurance Fund. Under the ASÍ/SA agreement, unemployment benefit will be earnings-related with a ceiling of 180,000 kr. Earnings-related benefit will be paid from the tenth weekday of unemployment, for no longer than three months over a three-year period. Entitlement to benefit will be renewed over a period of twenty-four months. Basic unemployment insurance benefit will be 96,000 kr. when the new law enters into force in 2006, instead of 93,821 kr., and be revised in step with wage changes at the beginning of 2007.

On November 15, the Government of Iceland issued a declaration on its measures to facilitate the wage review agreement between ASÍ and SA. The Government presented a four-point package: First, a contribution of 100 m.kr. to vocational training and retraining of unskilled workers. Second, measures to facilitate a more even distribution of the disability pension burden between pension funds covered by the agreements between ASÍ and SA with a contribution equivalent to 0.25% of the national insurance base, to be implemented over the period 2007-2009. Based on current forecasts for unemployment insurance revenues, this measure would cost the Treasury 1.5 b.kr. Third, the Government will sponsor legislation on temporary employment agencies for approval by Parliament before the Christmas 2005 recess. Fourth, the Government pledged to sponsor legislation on changes to the payment of unemployment benefits in line with the ASÍ/SA agreement, financing the measures with payments from the Unemployment Insurance Fund.

On November 22, Fitch Ratings upgraded Íslandsbanki's individual rating to B/C from C and affirmed the other ratings at long-term A, short-term F1 and support 2. The rating outlook is stable.

On November 22, Fitch Ratings assigned Kaupthing Bank ratings of long-term of A, short-term F1, individual B/C and support 2. The rating outlook is stable.

Tables and charts

Tables and charts are generally based on statistical information available on November 22, 2005, apart from financial market data, which are from October 31, 2005. A list of symbols is on p. 2.

A Tables

B Charts

Table 1 Main monthly indicators (continued on next page)

	Consumer prices		Exchange rate		Interest rates (end of period, %)						Money and credit (end of period)[5]			
	% change in CPI[1] over the previous		% ch. in effective exchange rate [1,2]		Short-term rates			Long-term rates[4]			12-month % change			
	1 month	12 months	1 month	12 months	Central Bank repo yield	3-month REIBOR[3]	3-month Treasury bills	5-y. non-indexed T-notes	10-year Treasury bonds	40-year HFF bonds	Base money	M3	DMB lending	DMB foreign liabilities[6]
1999	.	3.4	.	0.2	9.0	11.7	9.8	9.6	4.7	4.8	75.9	17.1	22.8	15.2
2000	.	5.0	.	-0.1	11.4	12.0	11.5	11.7	5.5	6.3	-10.4	11.2	26.2	83.4
2001	.	6.7	.	-16.7	10.1	12.5	10.0	9.1	5.1	5.9	-14.2	14.9	13.4	30.1
2002	.	4.8	.	3.0	5.8	6.2	5.8	6.9	4.9	5.2	17.2	15.3	0.9	-2.8
2003	.	2.1	.	6.4	5.3	5.1	4.8	7.5	4.3	4.6	-33.5	17.5	14.8	67.3
2004	.	3.2	.	2.1	8.25	8.6	7.4	7.8	3.6	3,5	77.7	15.0	39.6	58.8
2003														
December	0.3	2.7	0.5	1.7	5.3	5.1	4.8	7.5	4.3	4.6	-33.5	17.5	14.8	67.3
2004														
January	0.0	2.4	3.3	2.7	5.3	5.3	5.1	7.3	4.4	4.7	-12.5	21.3	20.8	68.5
February	-0.3	2.3	1.1	2.0	5.3	5.3	5.4	7.0	4.1	4.6	-30.0	20.9	21.4	56.2
March	0.6	1.8	-1.7	0.5	5.3	5.4	5.0	7.0	3.9	4.4	-28.7	22.7	23.9	71.4
April	0.6	2.2	-1.5	-2.2	5.3	5.4	5.3	7.0	3.7	4.1	-7.7	19.2	23.5	77.0
May	0.8	3.2	-0.3	-3.7	5.50	5.8	5.6	7.7	4.0	4.3	-32.4	16.4	19.8	77.5
June	0.8	3.9	0.7	-1.1	5.75	6.1	6.0	7.7	3.9	4.2	-11.7	16.1	20.1	58.3
July	-0.5	3.6	0.3	1.4	6.25	6.5	6.0	7.6	3.9	3.8	23.8	22.1	20.5	48.5
August	0.0	3.7	0.5	3.9	6.25	6.6	6.5	7.7	3.7	3.7	-15.8	12.6	23.6	58.5
September	0.4	3.4	-0.3	3.6	6.75	6.9	6.8	7.5	3.7	3.7	-8.3	18.3	26.6	65.0
October	0.8	3.7	0.6	3.6	6.75	7.2	7.0	7.8	3.7	3.7	3.5	18.1	32.4	55.3
November	0.2	3.8	1.4	4.6	7.25	7.7	7.5	7.9	3.6	3.6	7.4	16.7	34.9	53.4
December	0.5	3.9	4.5	8.7	8.25	8.6	7.4	7.8	3.6	3.5	77.7	15.0	39.6	58.8
2005														
January	0.1	4.0	1.9	7.2	8.25	8.6	7.1	7.7	3.5	3.5	3.9	17.1	37.0	61.3
February	0.2	4.5	1.6	7.8	8.75	9.0	7.8	7.8	3.4	3.5	-13.1	15.5	40.0	71.0
March	0.8	4.7	2.2	12.1	9.00	9.2	8.7	7.9	3.6	3.6	14.7	14.9	41.4	64.5
April	0.2	4.3	-2.3	11.1	9.00	9.2	8.8	7.7	3.5	3.5	-23.4	17.5	47.6	70.4
May	-0.5	2.9	-2.6	8.6	9.00	9.2	8.6	7.6	3.6	3.6	52.0	18.9	53.5	84.5
June	0.7	2.8	2.3	10.4	9.50	9.3	9.2	7.7	3.6	3.6	36.0	20.7	53.3	94.6
July	0.1	3.5	1.3	11.5	9.50	9.3	9.4	7.6	3.7	3.7	-18.2	19.1	54.8	110.4
August	0.2	3.7	0.5	11.5	9.50	9.3	9.3	7.4	3.6	3.6	-10.9	21.1	50.5	100.7
September	1.5	4.8	2.6	14.7	10.25	10.0	8.4	7.6	3.6	3.7	-5.4	12.9	55.8	82.6
October	0.6	4.6	3.5	18.1	10.25	10.1	9.7	7.8	4.0	4.0	-6.4	19.4	49.0	91.6
November	-0.2	4.2	...	...	...	...	...	...	...	...	...	...	...	...

1. Percentage changes between period averages. 2. Based on the official effective exchange rate basket (trade-weighted). Positive sign indicates appreciation of the Icelandic króna. 3. Average yield on the interbank market in Icelandic króna. 4. 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. 5. Annual figures are changes over year. Latest figures are preliminary. 6. DMBs = deposit money banks = commercial and savings banks and other institutions permitted to accept deposits from the public. Foreign lending excluded from January 2002.

Table 1 (continued) Main monthly indicators

	Foreign exchange market and reserves				Foreign trade and external conditions					Labour market		Treasury financial balance, % of rev., from beg. of year[12]	Asset prices 12-mo. % changes	
	Gross foreign currency reserves:			CB net purchases (b.kr.)	Trade balance (b.kr.)	Merchandise exports (b.kr.)	Merchandise imports (b.kr.)	Marine product prices 12-mo.% ch.[9]	Real exchange rate of króna[10]	Unemployment	Wages, 12-mo. % change[11]		Equity prices[13]	Housing prices[14]
	B.kr.	as ratio of: Merch. imports[7]	as ratio of: For. short-term liabil.[8]											
1999	35.8	2.6	0.91	12.0	-22.9	144.9	167.8	-4.8	93.6	1.9	6.8	8.7	47.4	22.2
2000	34.2	2.1	0.60	-13.9	-38.0	149.3	187.3	-3.0	96.2	1.3	6.6	5.9	-19.3	13.3
2001	36.6	2.1	0.40	-29.5	-6.7	196.4	203.1	1.6	83.7	1.4	8.8	-0.2	-11.2	3.1
2002	37.2	2.5	0.20	4.5	13.1	204.3	191.2	3.4	88.5	2.5	7.2	-5.6	16.7	7.5
2003	58.1	3.5	0.25	43.2	-16.9	182.6	199.5	0.4	94.1	3.4	5.6	-7.7	56.4	9.1
2004	65.6	3.6	0.24	27.2	-37.8	202.4	240.2	0.6	97.2	3.1	4.7	0.0	58.9	23.3
2003														
Desember														
2004	58.1	3.5	0.25	3.7	-2.5	13.7	16.2	-1.4	93.6	3.1	5.4	-7.7	56.4	9.1
January	56.4	3.4	0.28	7.0	0.3	16.7	16.4	-2.9	96.5	3.7	3.3	-1.2	76.8	8.3
February	57.3	3.5	0.28	1.4	0.1	14.3	14.1	-2.3	97.3	3.6	3.3	8.1	89.3	9.2
March	66.7	3.8	0.33	1.8	-1.0	20.3	21.2	-2.7	95.8	3.5	3.8	-0.5	79.8	9.7
April	65.6	3.7	0.31	1.5	-3.2	16.8	20.0	-5.1	94.8	3.5	4.0	1.0	91.1	13.4
May	65.8	3.8	0.31	1.5	-3.6	15.0	18.6	-3.1	94.9	3.3	4.6	-2.2	82.7	11.4
June	68.5	3.8	0.29	1.8	-7.2	16.0	23.1	-1.8	95.6	3.1	5.1	-2.5	96.9	9.9
July	68.1	3.8	0.34	1.4	-6.2	16.8	23.1	-0.1	95.8	3.0	5.1	-4.2	105.6	12.6
August	70.8	3.8	0.30	1.6	-6.5	14.1	20.6	3.3	96.4	2.9	5.2	-4.8	92.6	9.5
September	71.1	3.8	0.29	1.6	0.3	19.4	19.2	4.3	96.4	2.6	5.3	-5.8	109.3	14.3
October	66.1	3.5	0.27	1.4	-4.5	17.1	21.6	4.9	97.1	2.7	5.3	-2.1	75.1	13.8
November	67.1	3.6	0.24	4.9	-2.3	18.9	21.2	5.2	98.8	2.6	5.4	-3.8	70.1	17.3
December	65.6	3.6	0.24	1.4	-4.0	16.9	20.9	9.2	103.4	2.7	6.0	0.0	58.9	23.3
2005														
January	65.0	3.5	0.26	0.8	-4.9	13.9	18.8	9.5	105.9	3.0	6.6	15.2	54.6	27.9
February	60.0	3.2	0.26	0.6	-5.0	16.4	21.4	7.9	107.6	2.8	6.7	21.1	43.3	32.2
March	59.5	3.1	0.26	0.6	-5.9	16.3	22.3	9.6	109.9	2.6	6.5	11.6	53.5	32.2
April	61.5	3.0	0.22	0.6	-4.7	17.1	21.9	8.6	106.6	2.3	6.7	5.8	51.8	34.1
May	61.7	3.0	0.21	7.3	-8.2	15.7	23.9	8.9	103.8	2.2	6.6	3.8	51.6	38.5
June	62.4	3.0	0.19	0.6	-8.5	18.7	27.3	8.7	106.5	2.1	6.3	5.5	39.9	38.8
July	58.8	2.8	0.17	0.7	-10.2	13.7	23.9	8.1	108.1	2.0	6.6	3.7	38.3	39.4
August	58.3	2.7	0.18	0.8	-11.7	14.2	25.9	10.1	109.3	1.8	6.7	5.0	38.0	40.4
September	70.7	3.3	0.20	2.5	-12.5	14.8	27.3	11.5	112.6	1.4	6.9	4.4	21.8	37.0
October	59.5	2.8	...	3.2	-5.6	15.9	21.5	10.3	116.6	1.4	6.9	...	39.0	36.4
··November	...	...	...	...	...	...	...	...	118.1	...	...	...	...	...

7. Gross foreign exchange reserves at end of period as a ratio of the average monthly value of merchandise imports. Calculated at fixed exchange rates. 8. The denominator is foreign short-term liabilities of credit institutions (deposit money banks and investment banks). 9. Prices in SDR. Annual figures are % changes between annual averages. 10. Real effective exchange rate of the Icelandic króna based on relative consumer prices (a trade-weighted average of trading partners' consumer prices is used). 1980 = 100. 11. Annual figures show change in annual averages. 12. Cash basis. Without privatisation revenues. Adjusted for changed timing of expenditure charges in 2004. 13. The ICEX-15 index. Annual figures are % changes over year. 14. Residential housing in the Greater Reykjavík Area. Annual figures are % changes over year.

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

Table 2 Prices

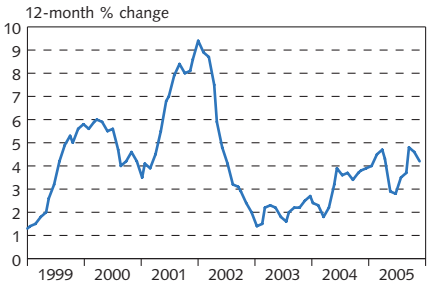
	2005								
	March	*April*	*May*	*June*	*July*	*August*	*Sept.*	*Oct.*	*Nov.*
Consumer price index, May 1988 = 100	241.5	242.0	240.7	242.4	242.7	243.2	246.9	248.4	248.0
1-month % changes									
Consumer price index	0.8	0.2	-0.5	0.7	0.1	0.2	1.5	0.6	-0.2
Domestic goods excl. agric. products and vegetables	-1.4	-1.9	-2.4	1.8	-0.9	1.9	0.4	1.4	0.0
Agricultural products and vegetables	-2.0	-1.7	-5.3	2.7	3.1	-0.7	2.0	1.4	-0.3
Imported goods excl. alcohol and tobacco	1.6	-0.2	0.6	-0.5	-1.0	-1.2	3.6	0.4	-1.5
Petrol	2.7	0.2	3.8	-0.1	5.7	1.9	4.9	-2.4	-4.8
Housing	2.2	2.7	-1.1	1.9	1.1	1.4	1.0	1.1	0.7
Public services	-0.2	-	0.2	0.4	0.3	0.1	0.2	0.2	0.1
Other services	0.6	-0.1	0.4	0.1	0.3	0.3	0.5	0.0	0.2
Harmonised index of consumer prices (HICP)[1]	0.4	-0.5	-0.3	0.4	-0.2	-0.2	1.6	...	...
12-month % changes									
Consumer price index	4.7	4.3	2.9	2.8	3.5	3.7	4.8	4.6	4.2
Domestic goods excl. agric. products and vegetables	1.1	-0.9	-4.0	-2.9	-3.9	-1.7	-2.0	-0.8	-0.9
Agricultural products and vegetables	3.0	2.0	-4.8	-2.7	-0.6	-2.6	-0.5	0.1	0.5
Imported goods excl. alcohol and tobacco	-0.1	-1.4	-1.4	-2.9	-2.2	-2.6	0.0	-1.4	-2.7
Petrol	9.9	5.7	6.2	-0.1	8.1	6.6	12.3	7.4	4.5
Housing	15.7	17.7	14.6	14.9	16.7	17.6	18.0	18.3	17.8
Public services	6.9	6.9	6.4	6.7	6.4	6.0	6.9	6.8	6.8
Other services	3.5	3.1	3.0	3.1	3.1	3.3	3.9	4.1	4.2
Harmonised index of consumer prices (HICP)[1]	2.5	1.6	0.5	0.3	0.5	0.4	1.6	1.5	...
Building cost index for residential buildings	7.0	6.6	4.5	4.2	3.7	4.3	4.6	4.2	...
Housing prices [2]	32.2	34.1	38.5	38.8	39.4	40.4	37.0	...	...
Foreign CPI and commodity prices, 12-mo. % changes									
Consumer price index in USA	3.1	3.5	2.8	2.5	3.2	3.6	4.7	...	...
Consumer price index in euro area [3]	2.1	2.1	2.0	2.1	2.2	2.2	2.6	2.5	...
Commodity prices excl. oil	9.4	6.8	7.2	8.1	8.1	10.4	...	...	...
Petrol prices[4]	56.8	53.3	27.4	52.2	51.0	51.0	44.9	17.1	...

1. Deviates from the CPI calculated by Statistics Iceland in that the latter includes own housing, education and health care. 2. Present value of price per m^2 in the Greater Reykjavík Area. Data for 2004 are preliminary. 3. Harmonised index of consumer prices (HICP). 1996=100. 4. Crude oil (Brent).

Sources: EcoWin, The Land Registry of Iceland, Statistics Iceland.

Chart 1

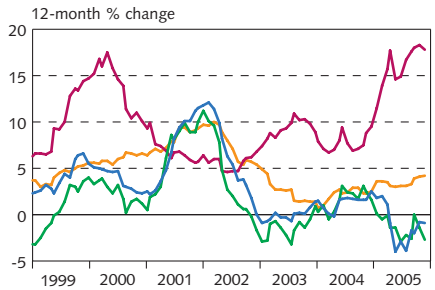
Consumer price index
January 1999 - November 2005



Source: Statistics Iceland.

Chart 2

Consumer price index by origin
January 1999 - November 2005



Domestic goods
Imported goods excluding alcohol and tobacco
Housing
Private services

Source: Statistics Iceland.

Table 3 Exchange rate of the Icelandic króna

Monthly averages	2005 Feb.	March	April	May	June	July	August	Sept.	Oct.	3 mo. % change to Oct. 31
Effective exchange rate indices[1]										
Official index (31/12 '91 = 100)	110.7	108.3	110.8	113.8	111.2	109.7	109.1	106.4	102.8	6.3
Import-weighted index (31/12 '94)	93.7	91.6	93.8	96.3	94.0	92.8	92.3	90.0	86.9	6.3
Export-weighted index (31/12 '94)	94.7	92.7	94.9	97.4	95.2	93.9	93.5	91.1	88.0	6.2
Central Bank quotations[2]										
US dollar	62.0	59.9	62.3	64.8	65.1	65.1	63.7	62.1	61.0	6.1
Euro	80.7	79.2	80.6	82.3	79.2	78.4	78.3	76.1	73.3	6.5
Yen	0.591	0.570	0.581	0.608	0.599	0.582	0.576	0.559	0.531	9.6
Pound sterling	117.0	114.4	118.0	120.2	118.5	114.0	114.3	112.3	107.6	4.9
Danish krone	10.85	10.64	10.82	11.05	10.65	10.51	10.50	10.21	9.83	6.6
Norwegian krone	9.70	9.68	9.86	10.18	10.03	9.90	9.89	9.75	9.36	5.2
Swedish krona	8.88	8.72	8.79	8.95	8.56	8.32	8.39	8.16	7.78	8.2

% changes[3]	Between annual averages 2001	2002	2003	2004	From beginning of year Oct.'03	Oct.'04	Oct.'05	Previous 12 months Oct.'03	Oct.'04	Oct.'05
Effective exchange rate indices[1]										
Official index (31/12 '91 = 100)	-16.7	3.0	6.4	2.1	-0.6	1.6	9.6	3.4	3.4	17.9
Import-weighted index (31/12 '94 = 100)	-16.4	3.1	6.6	2.3	-0.5	1.6	9.8	3.5	3.6	18.0
Export-weighted index (31/12 '94 = 100)	-17.0	3.0	6.2	1.8	-0.7	1.5	9.5	3.2	3.2	17.7
Central Bank quotations[2]										
US dollar	-19.3	6.8	19.2	9.5	5.8	3.0	0.2	14.6	10.5	13.2
Euro	-17.0	1.5	-0.6	-0.5	-4.6	1.9	13.4	-2.8	0.8	19.7
Yen	-9.1	10.2	10.1	2.3	-2.7	2.1	13.4	1.8	7.4	23.8
Pound sterling	-15.3	2.6	9.4	-2.4	0.7	0.2	8.8	5.6	2.1	16.5
Danish krone	-17.0	1.2	-0.6	-0.4	-4.5	1.7	13.8	-2.8	0.8	20.2
Norwegian krone	-17.7	-5.2	5.9	4.1	7.4	-1.1	7.5	8.3	0.1	14.6
Swedish krona	-9.0	0.4	-1.0	-0.4	-6.0	1.6	20.1	-3.2	0.9	26.2

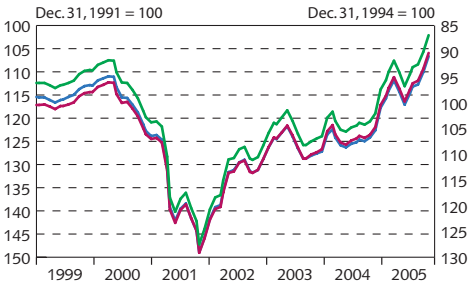
1. Based on a trade-weighted (goods and services) basket of trading partners' currencies. 2. Exchange rate of respective currency against the Icelandic króna. Stated at the central rate, i.e. the average of the buying and selling rates. 3. Positive sign indicates an appreciation of the Icelandic króna.

Source: Central Bank of Iceland.

Chart 3

Effective exchange rate indices
January 1999 - October 2005

Monthly averages



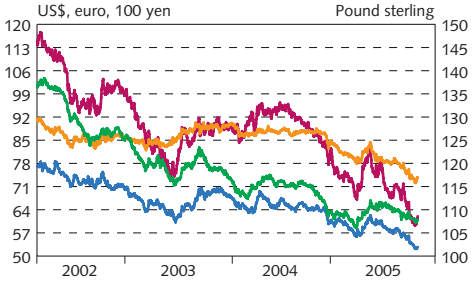
Official index (left-hand axis)
Import-weighted (right-hand axis)
Export-weighted (right-hand axis)

Source: Central Bank of Iceland.

Chart 4

Daily exchange rates of US dollar, euro, pound sterling and yen against the Icelandic króna

January 3, 2002 - October 31, 2005



Yen
Pound sterling
Euro
US dollar

Source: Central Bank of Iceland.

Table 4 Interest rates

All figures are in %	Annual averages[1] 2002	2003	2004	At end of month 2005 Apr.	May	June	July	Aug.	Sept.	Oct.
Central Bank rates										
Credit institutions' current accounts	5.5	2.9	3.7	7.25	7.25	8.00	8.00	8.00	8.00	8.75
Required deposits	7.1	4.2	4.9	8.00	8.00	8.75	8.75	8.75	8.75	9.50
Overnight loans (discount rates)	10.7	7.8	8.3	10.75	10.75	11.00	11.00	11.00	11.00	11.75
Repurchase agreements	8.4	5.4	6.1	9.00	9.00	9.50	9.50	9.50	10.25	10.25
Yields in the money market[2]										
REIBOR, O/N	9.3	5.1	6.1	8.1	8.7	8.7	9.2	9.2	9.9	9.4
REIBOR, 1-month	9.0	5.3	6.1	8.8	8.8	9.2	9.2	9.2	9.9	9.9
REIBOR, 3-month	8.9	5.3	6.3	9.2	9.2	9.3	9.3	9.3	10.0	10.1
REIBOR, 6-month	8.8	5.5	6.5	9.4	9.4	9.5	9.5	9.5	10.1	10.1
Treasury bills, 3-month	8.1	5.0	6.1	8.8	8.6	9.2	9.4	9.3	9.4	9.8
Treasury bills, 6-month[3]	7.9	5.0	...	...	...	...	...	...	...	...
Yields in the capital market[4]										
Treasury notes (RIKB 07 0209)	7.6	6.8	7.5	9.0	9.1	9.1	9.0	9.0	9.0	9.3
Treasury notes (RIKB 10 0317)	.	.	7.6	7.7	7.6	7.7	7.6	7.4	7.6	7.8
Treasury notes (RIKB 13 0517)	4.9	7.6	7.6	7.7	7.5	7.5	7.3	7.4	7.7	7.8
Treasury bonds (RIKS 15 1001)	5.2	4.4	3.9	3.5	3.6	3.6	3.7	3.6	3.6	4.0
Housing bonds (IBH 26 0315)[5]	5.7	4.7	4.5	4.7	4.8	4.7	4.7	4.8	4.6	5.0
Housing Financing Fund bonds (HFF 15 0914)[5]	.	.	3.5	3.5	3.7	3.5	3.7	3.6	3.7	4.4
Housing Financing Fund bonds (HFF 15 0224)[5]	.	.	3.8	3.6	3.6	3.6	3.7	3.7	3.8	4.2
Housing Financing Fund bonds (HFF 15 0434)[5]	.	.	3.8	3.6	3.6	3.6	3.7	3.7	3.7	4.0
Housing Financing Fund bonds (HFF 15 0644)[5]	.	.	3.7	3.5	3.6	3.6	3.7	3.6	3.7	4.0
Commercial banks' lending rates[6]										
Average rates on non-indexed securities	15.4	12.0	12.2	14.3	14.3	14.8	14.8	14.9	15.0	15.7
Average rates on indexed securities	10.1	9.1	8.0	7.4	7.4	7.4	7.4	6.9	6.8	6.7
Rates acc. to Interest Rate Act 38/2001[7]										
Penalty rates	21.3	17.3	17.3	20.0	20.0	20.0	20.5	20.5	20.5	20.5

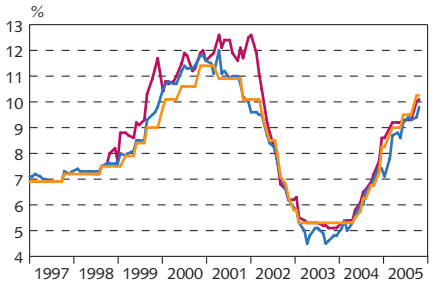
1. Arithmetic averages of end-of-month figures. Central Bank rates are time-weighted averages. 2. REIBOR are interest rates on the interbank market in Icelandic króna. For Treasury and bank bills, yields in trading on ICEX (Iceland Stock Exchange). 3. Treasury bills with the closest maturity to 6 months. 4. All bond yields are in real terms. 5. Housing bonds and Housing authority bonds were discontinued as of July 1, 2004. New bonds, Housing Financing Fund bonds (HFF), were issued instead and the majority of older issues were swapped into the new bonds. 6. From July 1, 2001, the Central Bank issues information on banks' average interest rates only as statistical information. 7. Interest rates that have legal status in the month shown. From July 1, 2001, penalty rates are revised at 6-month intervals.

Source: Central Bank of Iceland.

Chart 5

Short-term interest rates
January 1997 - October 2005

At end of month



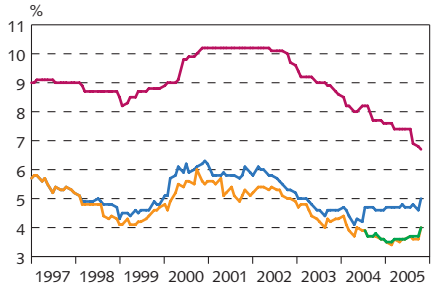
Central Bank repo rate
3-month Treasury bills
3-month REIBOR in the interbank market

Source: Central Bank of Iceland.

Chart 6

Long-term interest rates
January 1997 - October 2005

At end of month



30-year HFF bonds
15-year Treasury bonds
25-year Housing bonds
Secured bank loans

Source: Central Bank of Iceland.

Table 5 Money and credit

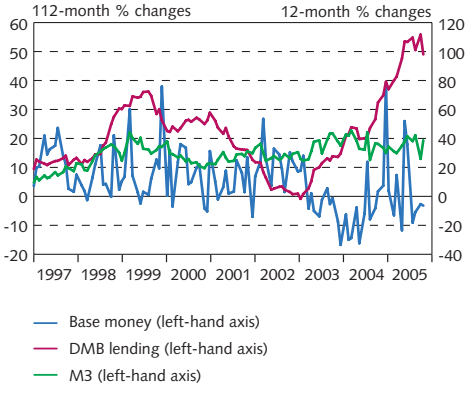
	B.kr. Oct.'05	% change over year 2002	2003	2004	1-mo. change in b.kr. Aug.'05	Sept.'05	Oct.'05	12-mo. % change Oct.'03	Oct.'04	Oct.'05
Central Bank										
Net foreign exchange reserves	59.5	.	.	.	-0.7	12.4	-11.2	.	.	.
Claims on Treasury and gov. institutions, net	-66.2	.	.	.	-12.2	-45.0	6.8	.	.	.
Claims on deposit money banks	64.3	27.9	-65.2	32.2	6.1	22.4	15.3	-43.2	-53.4	211.5
Base money	36.2	17.2	-33.5	77.7	-7.6	-3.3	8.8	-1.2	3.5	-6.4
Notes and coins in circulation	9.4	3.4	9.4	9.1	-0.5	0.3	-0.3	11.3	8.7	14.2
Reserves of deposit money banks	26.8	22.3	-46.7	121.0	-7.0	-3.6	9.0	-4.0	2.1	-12.0
Deposit money banks										
Central Bank items	-37.7	.	.	.	-13.9	-25.9	-6.4	.	.	.
Short-term position, net	-40.4	.	.	.	-13.0	-26.0	-6.9	.	.	.
Credit and listed securities[1]	2,664.7	3.1	28.2	40.3	78.8	152.7	138.6	20.7	39.7	67.7
Credit[2]	2,034.3	2.6	22.8	43.1	62.3	96.4	82.4	15.9	40.1	65.7
Treasury and government institutions	13.3	8.1	1.6	-16.1	0.8	2.6	-2.7	-5.0	-12.7	-9.5
Non-bank financial institutions	19.7	-45.2	.	.	-3.6	9.3	-3.3	.	-9.9	-33.1
Businesses	1,031.6	15.5	2.1	25.1	10.8	49.0	16.8	20.7	36.1	36.2
Households	504.9	9.9	8.1	12.7	24.4	29.7	19.9	12.2	35.7	107.3
Foreign sector	454.9	.	63.1	117.9	30.8	5.6	51.2	27.2	122.1	171.4
Listed securities	314.8	-3.4	38.3	22.8	-9.4	-0.7	46.7	20.7	20.2	65.4
Domestic credit and listed securities	2,051.7	0.9	22.6	35.5	37.8	114.2	62.9	19.1	32.5	48.2
Domestic credit	1,579.5	0.9	14.8	39.6	31.5	90.8	31.2	13.9	32.4	49.0
Deposits	673.5	15.5	22.5	13.5	5.4	14.6	2.9	25.7	17.5	21.3
Domestic deposits	647.1	.	.	15.1	1.1	7.1	30.3	.	.	19.5
Bonds	1,748.8	6.7	106.1	79.4	8.3	16.1	157.2	72.0	70.6	106.8
Domestic bonds	133.2	46.4	4.9	29.5	-3.0	11.6	-2.2	-5.9	10.3	56.3
Foreign liabilities, total[3]	1,928.0	-2.8	67.3	58.8	17.1	20.9	134.2	38.9	55.3	91.6
Banking system										
Foreign assets, net	-631.0	-6.8	18.5	25.1	-17.3	-8.1	-37.1	19.4	22.7	38.9
Domestic credit and marketable securities	1,822.2	-2.3	21.6	36.1	7.7	44.0	70.9	20.1	30.4	44.1
Money supply (M1)[4]	180.7	23.8	22.6	30.1	-10.9	2.7	16.3	35.2	26.6	27.5
M2 (M1 + demand savings deposits)	298.8	9.3	18.4	27.6	-13.3	0.3	14.8	24.0	23.2	23.6
M3 (M2 + time savings deposits)	656.5	15.3	17.5	15.0	0.5	7.4	30.0	21.7	18.1	19.4
M4 (M3 + securities issues)	789.7	17.0	15.5	17.0	-2.5	18.9	27.8	16.8	17.0	24.3

1. Treasury bills, equities and leasing contracts also included. 2. Lending series have been adjusted retroactively following reclassification under the ÍSAT standard. Data on lending to foreign entities available since January 2001. 3. Effective as of *Monetary Bulletin* 2005/3, this item includes securities issues abroad. 4. Sum of notes and coins in circulation and DMBs' demand deposits.

Source: Central Bank of Iceland.

Chart 7

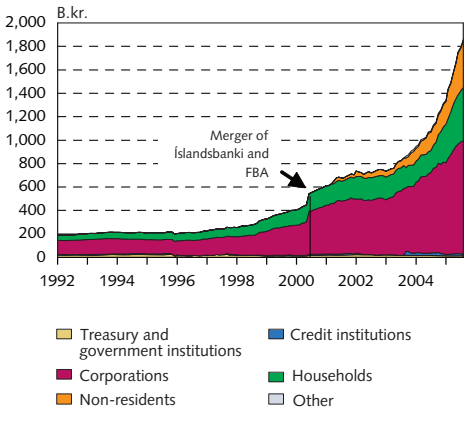
M3, DMB lending and base money
January 1997 - October 2005



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

Chart 8

Deposit money bank lending by sector
January 1992 - October 2005[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.

Table 6 The credit system[1]

Assets	B.kr. June'05	% change over year 1999	2000	2001	2002	2003	2004	3-mo. % change Dec.'04	March'05	June'05
Domestic lending and securities	3,103.2	17.3	17.2	19.2	3.2	11.4	20.2	2.8	6.8	9.5
Banking system[2]	1,805.5	23.7	44.4	13.8	8.0	22.4	36.9	10.0	12.7	13.0
Miscellaneous credit undertakings	620.6	17.4	-3.8	20.8	-2.0	8.0	15.1	-4.5	0.8	-2.9
Housing Financing Fund	403.2	13.9	12.0	18.1	11.5	14.1	0.3	-8.2	-3.1	-6.9
Credit undertakings subject to minimum reserve requirements[3]	173.8	.	.	30.3	-41.4	-19.0	133.6	9.0	12.4	6.5
Other credit undertakings[4]	43.7	9.2	17.2	16.1	9.0	0.8	-2.4	-4.3	1.8	2.1
Pension funds	785.0	17.9	4.6	16.4	12.2	13.4	16.5	0.2	4.5	2.5
Insurance companies	84.8	10.1	24.1	12.2	6.3	14.8	4.1	-5.0	17.9	7.4
Mutual and investment funds[5]	291.5	24.1	-14.0	22.3	39.2	47.0	38.9	6.1	10.2	3.1
Foreign credit	2,223.5	24.0	39.6	29.5	-4.6	29.7	42.5	9.4	8.5	27.1
State lending funds	294.7	2.2	0.0	31.9	-3.0	-3.2	-4.3	-5.7	-5.0	-1.1
Total of above	6,105.5	18.3	18.4	21.6	3.1	18.8	28.3	4.8	7.5	12.8
Less inter-institutional transactions	-3,002.4	19.9	20.4	25.4	2.9	29.8	38.8	7.1	8.3	16.5
Assets = liabilities	3,103.2	17.3	17.2	19.2	3.2	11.4	20.2	2.8	6.8	9.5
Liabilities										
Domestic liabilities	2,092.0	21.0	7.1	14.1	7.2	19.4	14.7	2.7	3.1	7.5
Notes and deposits	558.3	16.6	11.1	14.9	13.4	21.9	9.8	-5.7	12.0	6.3
Securities	245.0	23.0	10.1	6.7	0.2	45.2	13.2	4.5	-2.8	-5.3
Insurance companies' indemnity fund	53.0	9.1	11.5	15.6	4.4	4.7	2.3	-5.5	8.0	-3.2
Pension funds	1,049.7	27.4	9.9	13.7	4.9	21.1	19.8	2.1	4.4	4.3
Capital of financial institutions	474.0	-1.9	14.3	26.0	19.4	19.7	71.0	20.4	22.6	2.0
Other items, net	-288.0	.	.	.	.	.	.	.	.	.
Foreign liabilities, net	1,011.2	6.6	50.2	31.0	-4.8	-6.9	36.1	3.2	16.0	14.0
Credit by sector[6]										
Central government	191.2	-9.5	-8.6	25.8	1.8	0.0	25.1	-2.7	-9.9	11.5
Municipalities[7]	120.3	13.1	15.9	23.0	4.1	6.3	5.7	0.8	0.6	0.0
Businesses[7]	1,825.2	24.9	22.5	20.7	0.6	18.2	25.3	2.4	9.9	13.2
Households[7]	966.5	18.0	17.6	15.5	7.0	14.7	13.6	5.1	6.1	3.9

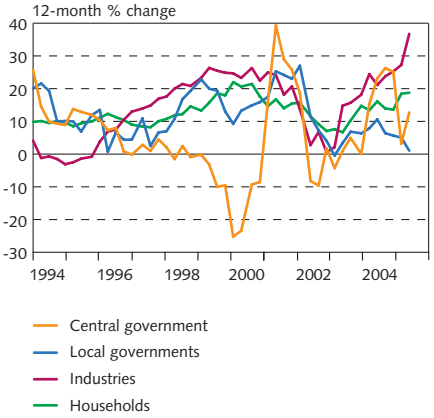
1. Partly preliminary or estimated. 2. In May 2003, Glitnir leasing company merged into Íslandsbanki and was thereby reclassified to "Banking system". 3. Credit undertakings subject to minimum reserve requirements comprise: Frjálsi fjárfestingarbankinn hf., Framtak fjárfestingarbanki hf., Lýsing, SP-fjármögnun, Europay, Greiðslumiðlun hf., MP fjárfestingarbanki (since November 2003) and Straumur fjárfestingarbanki (since January 2004). 4. Other credit undertakings comprise: The Agricultural Loan Fund, the Agricultural Productivity Fund, the Municipal Loan Fund and the Regional Development Fund. 5. Since December 2003 investment funds are included. 6. Partly estimated. 7. Since September 2003, lending by sector has been reclassified according to the ÍSAT standard. This produces a lower figure than otherwise for lending to households, and a higher figure for lending to municipalities and businesses.

Source: Central Bank of Iceland.

Chart 9

Growth of credit system lending 1994-2005

Lending by sectors[1]



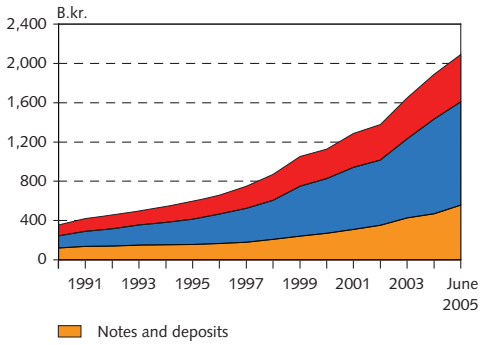
1. Reclassification of lending in September 2003 based on the ÍSAT-95 standard led to a reduction in household debt figures and an increase in business and municipalities' debt figures. Latest figures are preliminary.

Source: Central Bank of Iceland.

Chart 10

Credit system liabilities at end of year 1990-2005

At current prices



Latest figures are preliminary.

Source: Central Bank of Iceland

Table 7 Financial markets

At end of period	Outstanding in b.kr. 2003	2004	Sept.'05	1-month % change July'05	Aug.'05	Sept.'05	12-month % change July'05	Aug.'05	Sept.'05
Money market[1]	36.9	39.4	156.0	1.6	141.5	-6.6	51.7	288.0	303.2
Securities market[2]	1,187.6	1,736.6	2,361.8	5.5	0.3	0.8	66.4	63.2	54.2
thereof Treasury bonds	53.1	45.1	26.0	-0.8	0.8	-0.8	-47.4	-46.7	-45.6
thereof housing bonds	307.7	98.2	63.8	-2.9	-2.1	0.0	-81.0	-81.4	-38.2
thereof HFF bonds	.	340.3	381.6	4.4	-0.6	0.0	.	.	.
Market capitalisation of listed equities	658.8	1,083.7	1,540.6	2.9	7.9	-1.0	60.9	52.9	34.9
Mutual funds' units (open-end)	198.1	272.7	339.6	2.5	0.9	2.7	30.0	30.3	31.0

1. Bills issued by Treasury, commercial banks, savings banks and investment credit funds. 2. Government bonds, government notes, housing bonds, housing authority bonds, HFF bonds and listed bond issues of banks, savings banks, investment credit funds, leasing companies, businesses, municipalities and non-residents. Open-end mutual funds' units not included.

Source: Central Bank of Iceland.

Table 8 Labour market

Changes in indices are in percent. Other changes indicate increase/decrease in jobs or permits	Averages 2003	2004	Oct.'05	1-month change Aug.'05	Sept.'05	Oct.'05	12-month change Oct.'03	Oct.'04	Oct.'05
Wage index (1990=100)	205.9	215.6	233.0	0.3	0.3	0.3	5.5	5.3	6.9
Real wages (1990=100)[1]	131.8	133.7	136.1	0.1	-1.2	-0.3	3.2	1.6	2.1
Number of issued work permits	3.299	3.750	603	-93	637	-512	7	-38	250
Job vacancies, total	459	668	1,488	406	-186	-238	208	285	817
thereof Greater Reykjavík Area	104	204	499	173	53	-32	-1	191	230

Period averages	2002	2003	2004	Aug.'05	Sept.'05	Oct.'05	Oct.'03	Oct.'04	Oct.'05
Number of unemployed	3,631	4,893	4,564	2,851	2,267	2,193	4,059	3,880	2,193
Measured unemployment rate (% of labour force)	2.5	3.4	3.1	1.8	1.4	1.4	2.8	2.7	1.4
Seasonally adjusted unemployment rate (% of labour force)	.	.	.	2.0	1.8	1.6	3.3	3.1	1.6

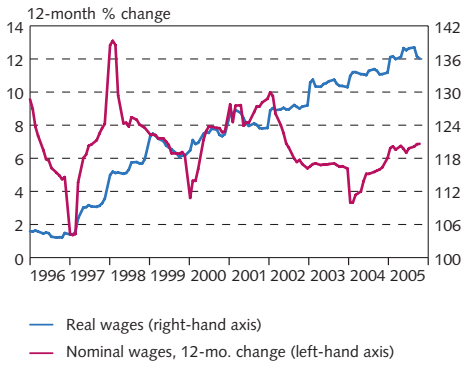
Quarterly measurements	Averages 2003	2004	Q3'05	3-month change Q1'04	Q2'05	Q3'05	12-month change Q3'03	Q3'04	Q3'05
Wage index (1990 = 100)	205.8	215.5	231.5	3.1	1.4	1.2	5.7	5.1	6.8
Wages in the private sector	188.5	196.9	211.2	3.4	1.0	0.8	5.6	5.4	6.1
Wages in the public sector and banks	234.5	246.3	265.4	2.7	2.0	1.8	5.6	4.8	7.7

1. Deflated by consumer prices.

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

Chart 11

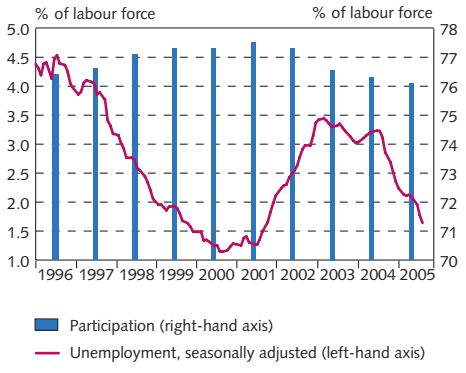
Nominal and real wages
January 1996 - October 2005



Sources: Statistics Iceland, Central Bank of Iceland.

Chart 12

Unemployment and labour participation[1]
January 1996 - October 2005



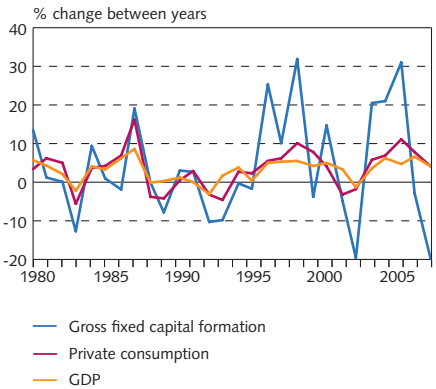
1. Central Bank estimate for labour force participation in 2003-2005.
Sources: Directorate of Labour, National Economic Institute. Central Bank of Iceland.

Table 9 National accounts – annual data (continued on next page)

						Prel.	Estimate	Forecast[1]	
B.kr.	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Gross domestic product (GDP), current prices	615.1	669.2	750.0	782.3	811.2	885.0	988.7	1,109.7	1,197.4
Current account balance, current prices	-42.9	-69.0	-33.1	10.8	-40.2	-73.9	-154.3	-131.7	-81.7
GDP at 1990 fixed prices	637.1	669.2	691.5	682.8	707.2	750.8	786.2	838.0	872.5
Volume changes between years, percent									
Private consumption	7.8	4.1	-3.2	-1.8	5.8	6.9	11.1	7.8	4.1
Public consumption	4.9	4.4	3.1	5.0	1.5	2.8	3.0	2.9	2.6
Gross fixed capital formation	-3.8	14.7	-4.9	-19.6	20.5	21.0	31.0	-2.9	-19.8
Business sector investment	-5.6	15.1	-13.3	-26.2	28.4	23.3	55.8	-4.2	-32.2
Residential construction	0.6	12.9	15.4	5.0	16.1	5.7	11.8	9.5	0.6
Public works and buildings	-0.7	14.7	8.0	-23.1	3.0	26.9	-11.2	-14.0	28.4
National expenditure	4.3	6.6	-2.8	-3.8	7.2	8.4	13.3	4.1	-2.1
Exports of goods and services	3.9	4.3	7.4	3.9	1.4	8.3	3.6	5.8	15.4
Exports of goods	7.1	-1.3	7.2	6.6	-1.2	9.2	...	...	...
Exports of services	-2.5	16.3	7.7	-1.4	6.6	6.6	...	...	...
Imports of goods and services	4.3	8.5	-9.1	-2.6	10.7	14.2	24.5	0.5	-1.4
Imports of goods	3.2	2.8	-10.0	-3.4	7.3	15.8	...	...	...
Imports of services	6.9	21.5	-7.2	-1.2	17.2	11.5	...	...	...
Gross domestic product (GDP)	4.2	5.0	3.3	-1.3	3.6	6.2	4.7	6.6	4.1
Gross national income (GNI)	4.1	3.3	2.2	2.6	0.7	4.9	...	...	...
Terms of trade (goods and services)	-0.8	-2.7	0.2	0.6	-4.3	-1.2	0.3	3.9	0.7
Percent of GDP									
Private consumption	59.6	59.8	55.6	54.9	56.8	57.2	59.1	58.7	58.7
Gross fixed capital formation	22.0	23.6	22.1	17.7	20.5	23.4	28.6	25.5	19.8
Current account balance	-7.0	-10.3	-4.4	1.4	-5.0	-8.4	-15.6	-11.9	-6.8
Gross national saving	15.1	13.7	17.4	19.1	15.3	14.7	13.3	13.8	12.3

Chart 13

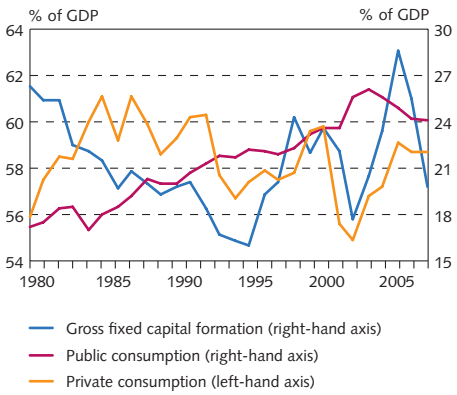
Growth of GDP, private consumption and gross fixed capital formation 1980-2007[1]



1. Preliminary 2004. Forecast 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 14

Private consumption, public consumption and gross fixed capital formation 1980-2007[1]



1. Preliminary 2004. Forecast 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Table 9 (continued) National accounts – quarterly data

B.kr.	Private consumption	Public consumption	Gross fixed cap. format.	Changes in stocks	National expenditure	Exports	Imports	GDP
2001: Q4	110,039	47,148	39,963	-20	197,131	81,532	-73,482	205,181
2002: Q1	102,173	48,149	34,809	-339	184,792	75,691	-71,036	189,447
2002: Q2	107,949	49,730	34,403	-896	191,186	78,514	-75,162	194,538
2002: Q3	106,257	49,818	33,945	825	190,845	80,092	-75,079	195,858
2002: Q4	113,242	52,775	35,525	229	201,771	71,567	-70,833	202,505
2003: Q1	109,099	51,039	31,689	2,235	194,062	70,797	-67,415	197,444
2003: Q2	114,860	52,828	40,839	-369	208,159	67,744	-78,282	197,621
2003: Q3	114,005	52,461	45,358	27	211,851	80,214	-87,252	204,813
2003: Q4	122,399	55,201	48,086	-3,396	222,290	69,359	-80,328	211,321
2004: Q1	119,045	54,522	40,608	3,412	217,588	72,915	-79,056	211,447
2004: Q2	126,416	56,905	54,315	-2,166	235,469	74,970	-94,166	216,273
2004: Q3	124,064	56,539	55,421	176	236,200	89,311	-96,433	229,078
2004: Q4	136,575	58,293	56,814	-4,766	246,915	78,907	-97,611	228,211
2005: Q1	133,422	58,727	51,129	3,997	247,276	69,390	-91,131	225,535
2005: Q2	146,225	62,033	66,260	-5,382	269,136	81,198	-112,281	238,053
Volume change from same quarter in previous year (%)								
2001: Q4	-6.3	2.5	-18.8	.	-8.3	13.4	-19.9	3.2
2002: Q1	-5.5	0.6	-27.2	.	-8.2	3.5	-14.0	-1.4
2002: Q2	-2.1	3.1	-14.3	.	-4.0	11.9	2.2	-0.5
2002: Q3	-0.2	7.3	-24.6	.	-3.9	2.4	-3.4	-1.3
2002: Q4	0.6	9.0	-9.8	.	0.6	-1.7	6.5	-1.8
2003: Q1	5.6	5.9	-7.2	.	4.7	5.6	1.3	6.4
2003: Q2	5.9	2.7	22.4	.	8.4	-4.0	10.8	2.5
2003: Q3	5.7	-0.2	31.1	.	8.2	3.7	16.3	3.1
2003: Q4	6.1	-1.7	35.5	.	7.2	0.4	13.8	2.5
2004: Q1	7.1	3.4	26.8	.	9.9	4.8	16.8	5.5
2004: Q2	6.7	3.8	27.1	.	9.2	5.9	13.6	6.4
2004: Q3	5.4	3.3	17.4	.	7.3	9.5	7.3	8.0
2004: Q4	8.3	0.7	15.1	.	7.5	12.8	20.1	4.8
2005: Q1	9.0	3.0	24.4	.	10.6	-2.7	18.4	3.0
2005: Q2	14.1	4.4	20.0	.	11.8	12.2	23.5	6.8

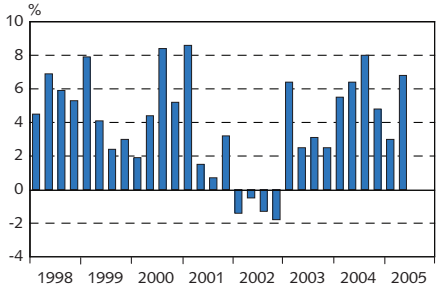
1. Central Bank of Iceland forecast in *Monetary Bulletin* 2005/4. 2. In September 2005, annual chain-linking was introduced for calculations of volume changes, replacing the earlier use of constant prices relative to a specific base year. Data extending back to 1997 have been revised on this basis.

Sources: Statistics Iceland, Central Bank of Iceland (forecasts).

Chart 15

Quarterly economic growth
Q1/1998 - Q2/2005

Volume change in GDP over four quarters (%)

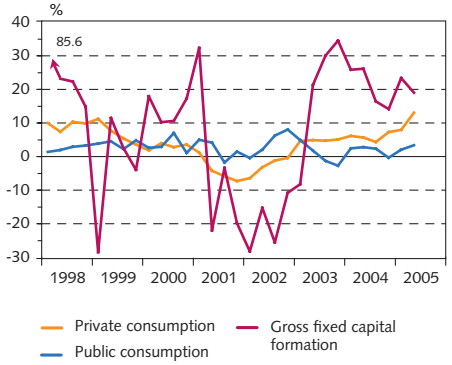


Preliminary 2004. Estimate 2005.
Source: Statistics Iceland.

Chart 16

Components of economic growth
Q1/1998 - Q2/2005[1]

Volume change over four quarters (%)



1. Preliminary 2004. Estimate 2005.
Source: Statistics Iceland.

Table 10 Current account balance[1] (continued on next page)

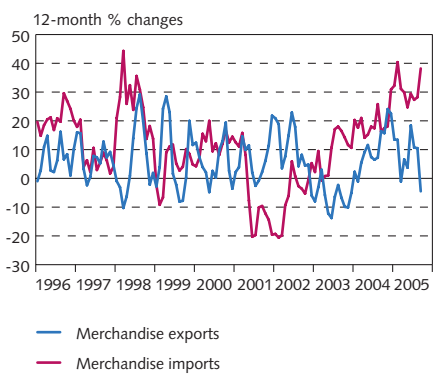
	B.kr.					% change from previous year[2]		
Trade in goods and services	*2001*	*2002*	*2003*	*2004*	*Jan.-July'05*	*3-mo.*	*6-mo.*	*12-mo.*
Trade balance	-6.7	13.1	-16.9	-37.8	-77.3	.	.	.
Merchandise exports fob	196.4	204.3	182.6	202.4	156.8	1.7	6.0	7.9
Excluding ships and aircraft	193.1	202.0	181.2	201.6	153.6	1.7	3.3	6.1
Marine products	121.8	128.6	113.7	121.7	92.8	1.3	5.1	7.1
Aluminium and ferro-silicon	44.4	43.5	40.3	42.6	34.9	-1.1	2.1	6.7
Other industrial products	19.0	14.5	21.6	28.4	19.3	8.4	1.2	2.8
Merchandise imports fob	203.1	191.2	199.5	240.2	234.1	39.9	33.5	32.1
Excluding ships and aircraft	190.1	180.0	195.7	231.7	226.9	41.8	38.0	31.7
Consumption goods	60.8	59.5	66.3	77.2	75.6	43.1	40.6	37.6
Investment goods	44.4	38.6	46.1	52.8	53.7	70.0	48.3	31.7

	B.kr.					% change from previous year[2]		
Services and income balance	*2001*	*2002*	*2003*	*2004*	*2005/Q2*	*3-mo.*	*6-mo.*	*12-mo.*
Services balance	-1.5	-0.3	-9.3	-14.6	-10.1	.	.	.
Services exports	102.8	101.6	105.5	113.7	29.3	18.9	16.8	15.1
Transportation	47.0	48.5	50.2	63.2	17.1	29.1	23.1	31.4
Travel	22.9	22.8	24.5	26.1	5.8	5.8	5.3	7.6
Other receipts	33.0	30.2	30.8	24.4	6.5	8.3	12.3	-8.8
Services imports	-104.4	-101.9	-114.8	-128.3	-39.5	33.0	29.3	21.7
Transportation	-36.7	-38.6	-39.7	-48.8	-14.1	30.4	20.6	23.5
Travel	-36.4	-33.4	-39.8	-48.5	-15.5	36.5	35.6	29.5
Other expenditure	-31.3	-29.9	-35.3	-31.0	-9.9	31.4	33.5	9.1
Balance on income	-25.3	-4.2	-14.0	-21.6	-2.7	.	.	.
Receipts	16.9	27.2	28.4	41.2	20.2	71.0	94.3	71.7
Compensation of employees	5.8	5.4	6.2	5.6	0.9	-17.7	-22.9	-14.5
Interest payments	3.4	4.8	4.3	8.5	4.3	152.7	142.1	133.6
Dividends and reinvested earnings[3]	7.8	16.9	17.9	27.1	15.0	66.5	107.4	78.7
Expenditures	-42.2	-31.3	-42.4	-62.8	-22.9	78.6	74.4	64.4
Compensation of employees	-0.5	-0.7	-0.5	-0.8	-0.3	90.7	36.6	68.2
Interest payments	-41.3	-31.5	-28.5	-33.2	-12.2	59.0	57.0	46.8
Dividends and reinvested earnings[3]	-0.3	0.8	-13.5	-28.8	-10.4	108.3	103.9	88.8
Current transfer, net	-1.0	1.2	-1.2	-1.2	-0.3	-1.3	-19.6	-7.3
Current account balance	-33.7	10.8	-40.3	-73.9	-34.1	.	.	.

Chart 17

Merchandise trade
January 1996 - September 2005

3-month moving averages at fixed exchange rates

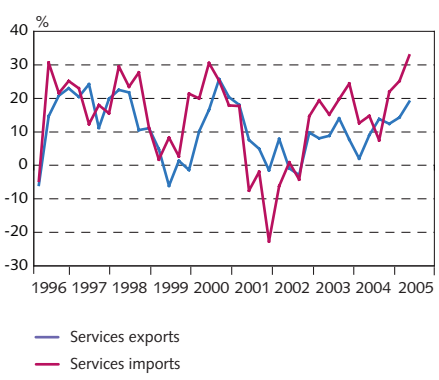


Latest data are preliminary.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 18

Exports and imports of services
Q1/1996 - Q2/2005

% change from same quarter in previous year at fixed exchange rates



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

Table 10 (continued) Current account balance[1]

	B.kr.					Change from prev. year (b.kr.)[2]		
	2001	2002	2003	2004	Q2'05	3-mo.	6-mo.	12-mo.
Capital and financial account	19.3	0.0	16.5	135.6	53.3	.	.	.
Capital transfer, net	0.4	-0.1	-0.4	-0.2	-0.5	-0.3	-0.7	-0.4
Financial account[4]	18.9	0.1	16.9	135.9	53.8	16.6	117.6	194.4
Financial account excl. reserves	14.1	5.8	40.3	150.1	54.0	14.3	104.8	163.5
Direct investment, net	-16.4	-21.2	-3.9	-165.4	-99.6	-81.3	-87.1	-216.9
Abroad	-33.7	-29.6	-28.4	-193.0	-108.4	-87.6	-91.8	-213.7
In Iceland	17.3	8.3	24.4	27.6	8.8	6.3	4.7	-3.2
Portfolio investment, net	61.5	22.0	228.0	507.5	340.3	283.1	362.3	557.9
Assets	-5.6	-30.0	-45.3	-75.7	-25.4	-16.8	-4.7	-16.2
Equities	-5.8	-25.7	-40.6	-71.2	-22.5	-15.1	-1.7	-13.4
Debt securities	0.2	-4.3	-4.7	-4.4	-3.0	-1.7	-3.0	-2.8
Liabilities	67.2	52.0	273.3	583.2	365.7	299.9	366.9	574.1
Equities	9.8	4.5	-5.6	20.2	-0.3	0.6	-1.1	19.0
Debt securities	57.3	47.5	278.9	563.0	366.0	299.3	368.0	555.0
Other investment, net[4]	-30.9	5.0	-183.8	-192.0	-186.7	-187.6	-170.4	-177.5
Assets	-47.1	-30.4	-156.1	-237.6	-287.5	-236.3	-260.0	-313.4
Liabilities	16.2	35.5	-27.7	45.5	100.8	48.8	89.6	135.9
Reserve assets	4.8	-5.7	-23.4	-14.2	-0.2	2.4	12.8	30.9
Net errors and omissions	14.4	-10.8	23.8	-61.7	-19.2	.	.	.
Memorandum items								
Long-term borrowing, net	31.4	42.6	67.0	352.3	176.1	112.4	207.5	405.7
Assets	-42.1	-40.4	-184.3	-256.2	-290.7	-235.6	-250.1	-285.2
Monetary authorities	4.8	-5.7	-23.3	-14.2	-0.2	2.4	12.8	30.9
General government	-	-	-	-	-	-	-	-
Deposit money banks	-18.5	-33.3	-162.6	-220.8	-296.2	-249.1	-274.8	-313.9
Other sectors	-28.4	-1.4	1.7	-21.3	5.7	11.1	11.8	-2.2
Liabilities	73.5	83.0	251.3	608.5	466.9	348.1	457.6	690.9
Monetary authorities	-5.8	4.8	-15.9	0.0	-0.0	-0.0	-0.0	3.8
General government	42.3	17.5	-10.4	9.9	-2.8	5.1	-12.0	0.8
Deposit money banks	9.1	51.4	264.3	584.3	441.3	323.9	452.0	673.7
Other sectors.	27.9	9.3	13.2	14.2	28.3	19.1	17.6	12.5

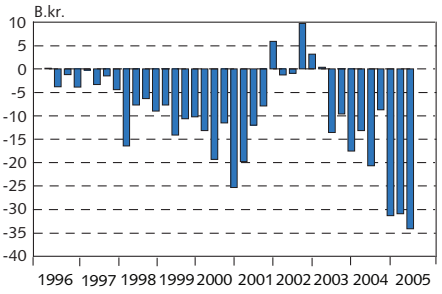
1. Latest figures are preliminary. 2. At constant exchange rates, based on the latest period indicated. 3. Dividend payments and reinvestment of earnings on direct investment. 4. Positive value represents inflow of capital due to foreign borrowing or decrease in assets. Negative value accounts for outflow of capital, debt repayments or increase in assets.

Source: Central Bank of Iceland.

Chart 19

Quarterly current account balance
Q1/1996 - Q2/2005

At current exchange rates

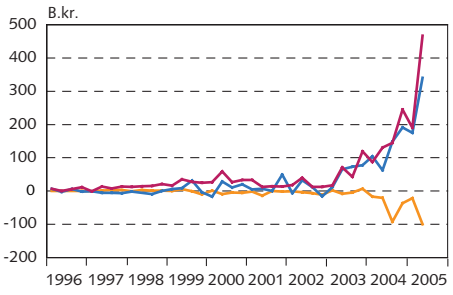


Latest data are preliminary.
Source: Central Bank of Iceland.

Chart 20

Selected financial account items
Q1/1996 - Q2/2005

At current exchange rates



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

Table 11 International investment position

B.kr.	Position at end of period								
	2000	*2001*	*2002*	*2003*	*2004*	*Sept.'04*	*Dec.'04*	*Mar.'05*	*June'05*
International investment position	-451.0	-596.4	-579.9	-550.8	-680.9	-683.4	-680.8	-818.0	-905.8
Total assets	314.4	415.9	409.3	708.2	1,133.9	986.9	1,133.9	1,156.4	1,553.2
Direct investment abroad	56.2	86.8	101.2	122.5	255.2	225.1	255.2	259.3	323.1
Equity capital	41.0	66.8	82.3	110.5	218.0	191.5	218.0	229.5	279.6
Other capital	15.2	19.9	18.9	12.1	37.1	33.7	37.1	29.8	43.5
Portfolio assets	185.0	197.3	159.7	262.3	344.4	312.6	344.4	340.8	376.2
Equity capital	178.4	184.8	149.3	239.2	316.5	286.4	316.5	307.7	340.4
Debt securities	6.6	12.5	10.4	23.1	27.9	26.2	27.9	33.0	35.8
Other investment assets	39.1	95.2	111.2	265.2	468.7	378.0	468.7	496.8	791.4
Reserves	34.2	36.6	37.2	58.1	65.6	71.1	65.6	59.5	62.4
Total liabilities	765.4	1,012.3	989.2	1,259.0	1,814.8	1,670.2	1,814.8	1,974.3	2,458.9
Direct investment in Iceland	41.5	70.8	64.3	84.6	110.7	103.7	110.7	123.3	122.9
Equity capital	33.1	63.4	56.1	61.8	97.2	83.5	97.2	110.2	110.2
Other capital	8.5	7.4	8.2	22.8	13.5	20.2	13.5	13.1	12.7
Portfolio liabilities	347.7	471.3	490.3	776.2	1,302.2	1,160.8	1,302.2	1,460.8	1,835.5
Equity capital	2.3	12.1	35.9	42.6	86.5	91.9	86.5	106.7	112.3
Debt securities	345.4	459.2	454.4	733.6	1,215.7	1,068.9	1,215.7	1,354.0	1,723.2
Other investment liabilities	376.2	470.2	434.6	398.3	402.0	405.8	402.0	390.3	500.6
Long-term debt	289.0	377.0	296.2	252.0	206.7	246.6	206.7	205.8	223.1
Short-term debt	87.2	93.2	138.4	146.3	195.3	159.1	195.3	184.5	277.5
Memorandum items									
Equity capita, net	190.7	188.7	150.3	234.5	374.6	315.9	374.6	337.0	428.4
Net external debt position	-641.7	-785.1	-730.2	-785.3	-1,055.5	-999.2	-1,055.5	-1,154.9	-1,334.1
Monetary authorities	18.6	21.7	20.8	58.1	65.5	70.7	65.5	59.3	62.2
General government	-167.2	-239.8	-227.2	-213.7	-205.8	-215.5	-205.8	-190.5	-188.2
Deposit money banks	-329.4	-373.7	-361.8	-471.1	-778.2	-710.9	-778.2	-900.5	-1,044.6
Other sectors	-163.7	-193.2	-162.0	-158.6	-136.9	-143.5	-136.9	-123.3	-163.5
Percent of gross domestic product[1]									
International investment position	-64.1	-77.3	-81.6	-70.2	-86.6	-79.2	-86.6	-86.2	-91.8
Net external debt[2]	91.2	101.7	102.7	100.1	134.2	115.8	134.2	121.7	135.3
External debt position[2]	102.5	120.4	125.1	144.3	205.7	170.9	205.7	183.9	225.5
Long-term debt	83.6	98.1	96.5	110.0	163.9	135.3	163.9	154.1	184.2
Short-term debt	18.9	22.3	28.6	34.3	41.8	35.6	41.8	29.8	41.3

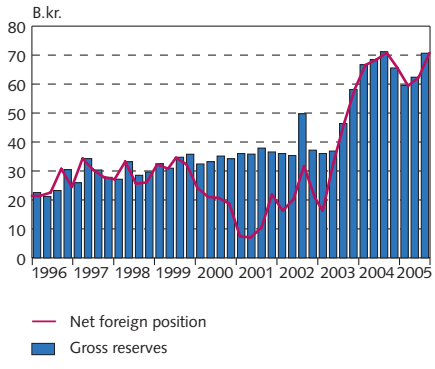
1. Foreign debt at year-end at annual average exchange rates (based on SDR). Quarterly ratios as percent of estimated annual GDP. 2. Direct investment capital and portfolio equities excluded.

Source: Central Bank of Iceland.

Chart 21

Reserve assets and Central Bank net foreign position, Q1/1996- Q3/2005

Quarterly, at current exchange rates

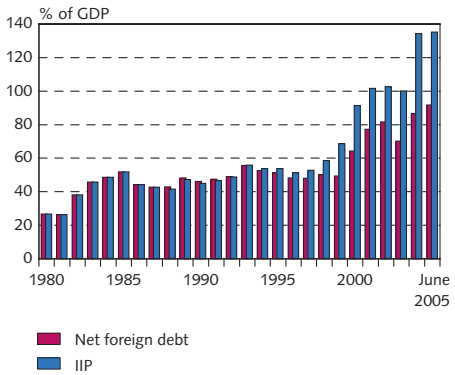


Latest data are preliminary.
Source: Central Bank of Iceland.

Chart 22

International investment position 1980-2005[1]

At end of year and latest quarter



1. IIP is shown here with positive sign but is actually negative (see Table 11). Latest data are preliminary.
Source: Central Bank of Iceland.

Table 12 Summary of Treasury finances[1]

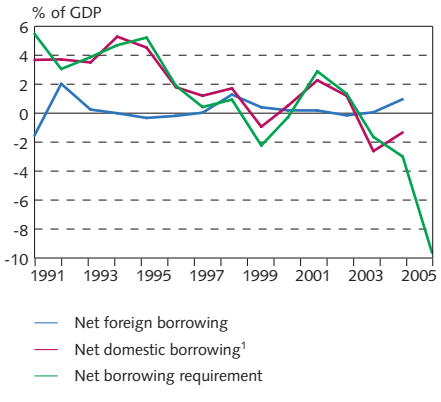
B.kr.	Accruals basis 2002	2003	2004	Jan.-Dec. 2003	2004	% ch. from prev. year	April-July 2004	2005	% ch. from prev. year
Revenues	259.2	274.6	302.4	259.8	280.7	8.1	92.0	168.8	83.4
Expenditures	267.3	280.7	300.4	268.7	280.4	4.3	101.3	106.8	5.4
Financial balance	-8.1	-6.1	2.0	-8.9	0.3	.	-9.3	62.0	.
Miscell. short-term accounts	-14.4	8.9	-3.8	9.8	-0.6	.	0.7	-1.9	.
Net lending	11.3	5.7	26.3	6.5	26.4	.	6.9	-27.3	.
Equity transactions	0.7	4.8	-0.7	4.5	-0.4	.	0.0	9.1	.
Balance before financing	-10.5	13.3	23.8	11.8	25.7	.	-1.7	42.0	.
Pension funds	-4.2	-9.9	-12.8	-7.5	-10.8	.	-2.5	-1.4	.
Net borrowing	13.5	-2.9	-3.6	-6.0	-6.6	.	-2.6	-15.5	.
Short-term domestic	0.0	8.5	-6.0	8.5	-6.0	.	-2.6	3.2	.
Long-term domestic	3.0	4.6	11.3	1.6	8.5	.	0.4	4.3	.
From abroad	10.5	-16.0	-8.9	-16.0	-9.1	.	-0.5	-22.9	.
Cash balance	-1.2	0.5	7.3	-1.6	8.3	.	-6.8	25.0	.
Revenues and expenditures									
Total revenue	259.2	274.6	302.4	259.8	280.7	8.1	92.0	168.8	83.4
Personal income taxes, gross	55.1	58.0	65.0	55.8	62.6	12.0	18.4	20.4	10.4
Other income and property taxes	27.5	30.8	37.6	28.1	32.8	16.8	9.6	16.8	75.7
Value-added tax	76.3	80.9	96.4	80.3	91.1	13.5	31.0	38.7	24.9
Taxes on commodities & imports	15.4	17.6	21.1	17.5	20.8	18.7	7.7	9.7	25.8
Payroll taxes	23.4	26.3	28.4	25.2	27.8	10.3	9.5	10.9	14.8
Other taxes	22.9	25.2	27.2	23.7	25.7	8.7	9.6	10.8	11.8
Interest, dividends and rent	18.7	14.4	15.3	11.0	12.0	9.3	3.7	2.2	-42.1
Profits from asset sales	11.7	12.0	1.1	11.6	0.2	-98.5	0.0	57.1	.
Other revenues	8.3	9.3	10.4	6.7	7.8	17.3	2.5	2.4	-2.4
Total expenditures[2]	267.3	280.7	300.4	268.7	280.4	4.3	101.3	106.8	5.4
Expenditure on goods and services	116.8	110.1	138.9	120.6	136.1	12.8	48.7	55.0	12.9
Current transfers	112.6	129.5	124.4	108.7	111.5	2.6	41.8	42.2	0.9
Interest payments	16.0	15.3	14.2	14.9	13.1	-12.5	3.1	2.4	-21.7
Maintenance	6.1	6.3	5.0	5.0	3.7	-26.9	2.0	1.7	-14.2
Capital expenditures	15.8	19.6	18.0	19.4	16.1	-17.4	5.7	5.4	-4.6

1. First three columns on accruals basis as in the Treasury accounts but latest figures on cash basis. 2. The most recent expenditure figures are not comparable with earlier data due to changes in the presentation of the accounts.

Source: State Accounting Office.

Chart 23

Treasury borrowing 1991-2005



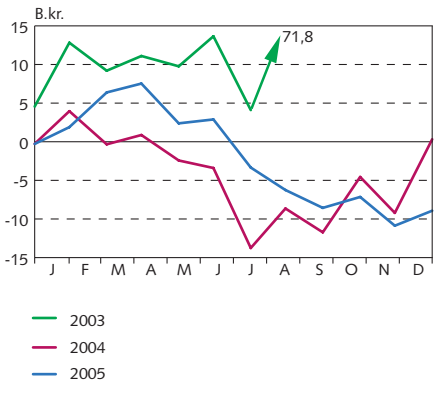
1. Including reduction in pension fund commitments and outstanding long-term interest.

Sources: Ministry of Finance, Treasury accounts, Central Bank projections.

Chart 24

Monthly Treasury balance 2003-2005

Cumulative from beginning of year



Source: State Accounting Office.

Table 13 Public sector finances[1]

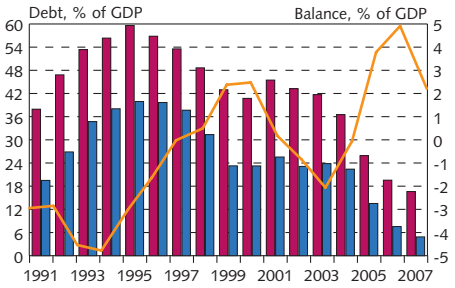
B.kr.									*Prelim.*	*Estimate[2]*	
General government	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Revenues	213.2	242.9	278.6	301.1	328.5	350.6	368.4	416.7	479	521	541
Expenditures	213.3	240.0	264.0	284.6	327.2	357.1	385.1	417.2	441	467	514
Financial balance	-0.1	2.8	14.6	16.6	1.3	-6.6	-16.7	-0.5	37	55	27
Net debt	196.5	180.7	147.0	158.7	199.3	182.2	195.7	202.1	136	85	59
Gross debt	279.4	280.5	271.5	278.0	354.6	340.7	342.3	329.3	260	220	201
Central government											
Revenues	162.5	184.1	214.0	228.9	246.1	257.9	275.1	313.9	363	391	399
Expenditures	159.6	177.0	196.4	209.8	239.5	261.1	288.1	304.0	318	334	373
Financial balance	2.9	7.1	17.5	19.1	6.6	-3.2	-13.0	9.9	45	57	25
Net debt	172.3	151.3	118.8	127.4	168.8	149.5	159.2	155.8	82	29	4
Gross debt	241.6	237.8	226.0	228.5	298.3	281.1	277.2	253.0	173	127	105
Local government											
Revenues	55.5	62.9	69.9	77.7	89.5	99.8	104.3	112.7	126	143	155
Expenditures	58.5	67.2	72.8	80.3	94.8	103.2	108.0	123.0	133	145	154
Financial balance	-3.0	-4.3	-2.9	-2.6	-5.3	-3.4	-3.8	-10.3	-7	-2	2
Net debt	25.0	30.1	28.7	31.7	30.7	32.8	36.7	46.4	53	56	55
Gross debt	38.4	43.3	46.1	49.8	56.6	60.2	65.6	76.8	87	94	96
General government, % of GDP											
Revenues	41.3	42.4	45.3	45.0	43.8	44.8	45.4	47.1	48	47	45
Expenditures	41.3	41.9	42.9	42.5	43.6	45.7	47.5	47.1	45	42	43
Financial balance	0.0	0.5	2.4	2.5	0.2	-0.8	-2.1	-0.1	4	5	2
Net debt	38.1	31.5	23.9	23.7	26.6	23.3	24.1	22.8	14	8	5
Gross debt	54.1	48.9	44.1	41.5	47.3	43.5	42.2	37.3	27	23	17

1. The public sector includes the central and local governments and the social security system. Revenues and expenditures are as itemised by Statistics Iceland, according to the UN system of national accounts. The main differences from the Treasury accounts relate to the treatment of depreciation of tax claims, pension liability and profits from the sale of government assets. 2. Operating figures for 2004 are Statistics Iceland estimates. Other figures for 2004-2006 are Central Bank estimates.

Sources: Statistics Iceland, Central Bank projections.

Chart 25

General government balance and debt 1991-2007

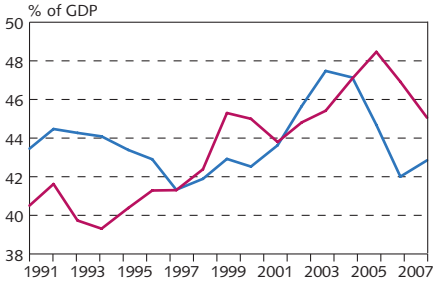


Net debt (left-hand axis)
Gross debt (left-hand axis)
Financial balance (right-hand axis)

*Preliminary/forecast.
Sources: Statistics Iceland, Central Bank projections 2003-2007.

Chart 26

General government revenues and expenditures 1991-2007



Expenditures
Revenues

Sources: Statistics Iceland, Draft budget 2006, Central Bank projections 2005-2007.

Table 14 Turnover[1]

	January-August			% ch. in previous year, January-August[2]		
M.kr.	*2003*	*2004*	*2005*	*2003*	*2004*	*2005*
Industries, total	203,079	220,893	237,443	-6.2	5.7	3.6
Industries, excluding fish processing	133,420	143,016	148,248	0.7	4.2	-0.1
Industries, excl. fish processing and power-intensive	108,024	115,857	122,579	4.4	4.2	1.9
Retail trade	119,611	128,436	135,936	1.4	5.6	4.9
Wholesale trade	197,077	240,208	264,947	6.8	19.7	9.3
Wholesale trade, excluding fuels	168,219	208,119	228,407	7.4	21.6	8.8
Construction	55,527	68,743	89,766	15.7	20.3	25.8
Total	856,477	981,932	1,107,140	0.1	11.4	8.6
Total, excluding fuels	827,619	949,844	1,070,599	1.2	12.8	11.7

1. Based on VAT reports. 2. Based on price-adjusted turnover, deflated by the consumer price index, in some cases excluding housing and petrol.

Sources: Statistics Iceland, Central Bank of Iceland.

Table 15 Real effective exchange rate of the Icelandic króna[1]

	Annual averages					Q3	% change on previous year		
	2000	*2001*	*2002*	*2003*	*2004*	*2005*	*Q1 '05*	*Q2 '05*	*Q3 '05*
Real effective exchange rate (1980 = 100)									
based on relative consumer prices (CPI)	96.2	83.7	88.5	94.1	97.2	105.5	11.4	8.6	8.8
based on relative unit labour costs (ULC)	91.4	78.7	84.1	88.5	90.6	99.1	18.9	10.2	11.9

% change on previous year	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*Prel. 2004*	*Forecast 2005*
Nominal effective exchange rate	1.2	1.5	0.0	0.2	-16.6	2.5	6.2	1.8	9.1
Foreign consumer prices	2.1	1.6	1.6	2.3	2.1	1.7	2.0	1.8	2.3
Domestic consumer prices	1.8	1.7	3.4	5.1	6.6	4.8	2.1	3.2	3.9
Real exchange rate based on relative CPI	0.9	1.6	1.8	2.9	-13.0	5.7	6.3	3.2	10.8
Foreign productivity	1.5	1.2	1.2	1.4	0.4	1.1	1.4	1.9	1.1
Domestic productivity	2.0	2.1	1.5	2.8	1.7	-0.8	5.0	4.1	1.1
Foreign wages	3.2	3.0	3.3	3.2	3.3	3.1	2.9	1.9	1.7
Domestic wages	5.8	7.1	5.5	5.7	8.0	5.8	5.5	4.7	6.6
Real exchange rate based on relative ULC	3.3	5.0	1.6	1.3	-13.8	6.8	5.2	2.3	14.4

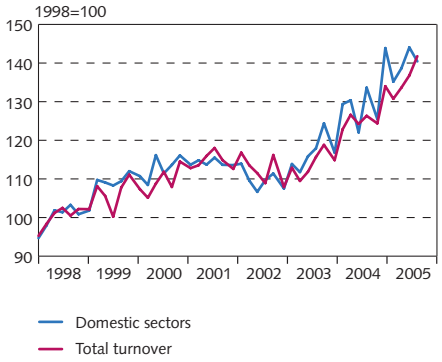
1. Latest values are preliminary and estimates.

Source: Central Bank of Iceland.

Chart 27

Turnover volume 1998/1 - 2005/4

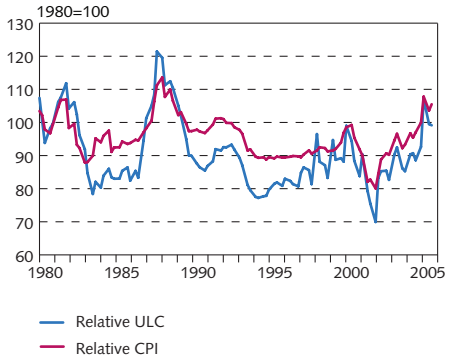
Two month periods at constant prices, seasonally adjusted



Sources: Statistics Iceland, Central Bank of Iceland.

Chart 28

Quarterly real effective exchange rate of the Icelandic króna Q1/1980- Q3/2005



Latest values are preliminary.

Source: Central Bank of Iceland.

Table 16 Real estate market and asset prices

					1-mo. % change		12-mo. % change		
Real estate market[1]	*2002*	*2003*	*2004*	*Oct.'05*	*Sept.'05*	*Oct.'05*	*Oct.'03*	*Oct.'04*	*Oct.'05*
Residential housing price index[2]	158.9	177.7	200.5	285.6	1.2	0.4	13.3	12.5	37.9
Apartment housing price index[2]	160.7	179.9	201.3	281.0	0.9	0.3	13.2	11.0	35.2
Fish quota prices (period averages, kr./kilo)									
Price of long-term cod quota (kr./kilo)	709	930	1,223	1,640	3.7	15.0	25.0	-9.6	45.1
Price of short-term cod quota (kr./kilo)	117	156	132	125	-0.8	0.8	-20.7	4.3	4.2

Equity market	At end of year				Oct. 31,	% change to Oct. 31, 2005			
Equity prices, Dec. 31, 1997 = 1,000	*2001*	*2002*	*2003*	*2004*	*2005*	*1 mo.*	*3 mo.*	*6 mo.*	*12 mo.*
ICEX-15	1,159.0	1,352.0	2,114.3	3,359.6	4,677.0	1.0	8.6	13.8	39.0
ICEX-MAIN (The Main List index)	1,180.8	1,436.2	2,075.2	3,167.4	4,350.1	1.7	8.6	13.1	36.4
ICEX industry indices, Dec. 31, 2004 = 100[3]									
Fisheries (ICEXFISH)	86.7	107.3	100.0	120.7	120.8	-3.2	-5.3	-7.6	1.4
Finance and insurance (ICEX40)	.	.	.	100.0	144.4	1.1	10.6	16.7	.
Consumer staples (ICEX30)	.	.	.	100.0	127.8	-0.2	4.0	7.3	.
Health care (ICEX35)	.	.	.	100.0	111.7	4.8	2.7	7.8	.

1. Changes are based on 3-month moving averages. 2. Greater Reykjavík Area (GRA). January 1994=100. 3. Percentage changes are price-adjusted using the price index for residential housing in the GRA. 4. Housing Financing Fund applications for new and renovated housing. 5. New industry indices were introduced on April 1, 2005. Of the previous indices, only the fisheries index is still calculated, based on its initial value of 100 on December 31. 1997.

Sources: Federation of Icelandic Fishing Vessel Owners, Housing Financing Fund, Iceland Stock Exchange (ICEX), Icelandic Quota Exchange, Land Registry of Iceland, Central Bank of Iceland.

Table 17 Households and businesses: assets and debt

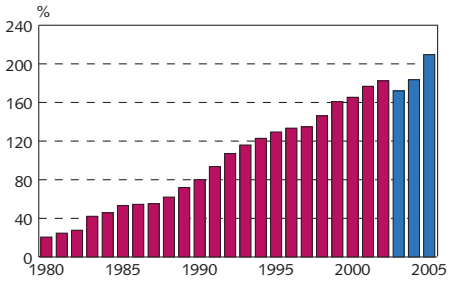
B.kr. unless otherwise stated	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*% change '03-'04*
Household assets in residential housing and cars[1]	676.0	724.1	842.6	953.2	1,044.0	1,108.4	1,235.5	1,448.9	17.3
Assets in pension funds	345.6	398.2	507.3	557.3	640.1	664.6	805.1	964.6	19.8
Household debt with the credit system[2]	386.2	442.6	522.0	613.8	710.4	758.6	772.1	877.1	13.6
Household debt as % of disposable income[2]	134.7	146.1	160.9	165.4	176.8	182.4	172.0	183.5	6.7
Businesses' debt with the credit system[2]	420.7	509.4	668.8	801.1	962.3	972.5	1,171.0	1,466.8	25.3
Debt of firms in fisheries sector	123.5	139.7	160.3	165.2	195.5	191.9	185.5	208.4	12.3

1. National Economic Institute national wealth estimates. At average annual prices. 2. Due to reclassification of lending within the credit system, household debt is 50.3 b.kr lower than would otherwise have been the case at the end of 2003 and business sector debt 27.9 b.kr. lower, compared with the former classfication. Year-on-year changes are based on the former classification.

Source: Central Bank of Iceland.

Chart 29

Household debt as percentage of disposable income 1980-2005[1]

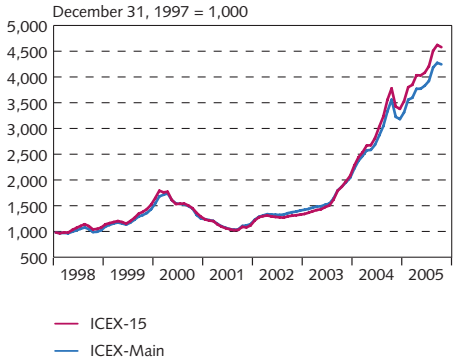


1. New classification from 2003 (blue columns). See footnote 2 to table 17. Latest values are preliminary.
Source: Central Bank of Iceland.

Chart 30

Equity prices 1998-2005

Monthly averages January 1998 - October 2005



Source: Iceland Stock Exchange (ICEX).

Table 18 Businesses' financial accounts

Accounts of publicly listed companies[1]	*Jan.-Dec.*		*% of turnover*		*Jan.-Sept.*		*% of turnover*		*% change*
All amounts in b.kr.	*2003*	*2004*	*2003*	*2004*	*2004*	*2005*	*2004*	*2005*	*'04-'05*
Profit before financial expense & depreciation	33.9	42.8	12.1	12.1	12.9	17.6	14.7	11.6	36.4
Fisheries	8.3	8.7	21.3	18.1	2.1	2.2	21.6	18.2	4.8
Transport	1.6	2.6	7.0	10.7	4.5	3.8	13.2	10.2	-15.5
ICT	8.1	11.0	19.6	20.2	1.1	2.3	10.3	8.6	109.0
Industry and manufacturing	12.1	16.6	16.3	18.1	10.2	12.6	17.9	12.6	23.5
Profit after taxes	12.0	23.2	4.3	6.6	6.8	9.7	7.7	6.4	42.6
Fisheries	3.4	5.6	8.7	11.7	0.8	1.4	7.9	11.7	75.0
Transport	0.5	1.0	2.3	4.1	2.8	6.6	8.3	17.8	135.7
ICT	1.6	4.8	3.6	8.9	0.6	1.0	5.7	3.8	66.7
Industry and manufacturing	5.6	10.2	7.5	11.2	6.5	7.0	11.4	7.0	7.7
Equity ratio	35.2	34.1	.	.	38.0	30.8	.	.	.
Return on equity	15.3	10.3	.	.	11.6	9.3	.	.	.
Sample size at end of period	31	31	.	.	13	13	.	.	.

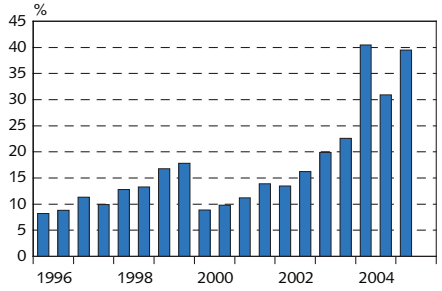
Accounts of commercial banks and savings banks[2]					*% change*	*Jan.-June*		*% change*
All amounts in b.kr.	*2001*	*2002*	*2003*	*2004*	*'03-'04*	*2004*	*2005*	*'04-'05*
Net interest income	29.4	29.6	36.0	54.2	50.6	22.2	36.4	64.0
Other operating income	10.3	27.9	45.6	78.7	72.6	40.8	63.5	55.7
Net operating income	39.6	57.5	81.6	132.9	62.9	63.0	99.9	58.6
Operating expenses	25.4	34.1	44.9	60.2	34.1	27.0	34.5	27.7
Provisions for bad and doubtful debts	7.4	9.3	13.2	13.2	-	6.7	6.1	-9.7
Taxes	-0.1	1.2	2.9	8.9	206.9	4.3	9.1	112.7
Profit	6.9	12.5	18.6	43.1	131.7	21.3	50.2	135.9
Total assets at end of period	941.0	1,161.1	1,597.3	3,128.8	95.9	1,886.3	4,479.1	137.5
Stockholders' equity at end of period	60.8	84.5	113.5	256.6	126.1	133.2	447.8	236.2
% at end of period								
Return on equity	13.9	18.5	22.5	30.9	.	41.5	39.5	.
Cost ratio[3]	64.0	59.4	55.0	45.3	.	42.9	34.5	.
Capital ratio	11.3	12.2	12.3	12.8	.	13.1	13.9	.
Capital ratio excluding subordinated loans	8.0	9.1	9.2	9.5	.	9.0	10.1	.

1. Companies listed on Iceland Stock Exchange (ICEX), excluding the finance and insurance sector. Paired comparison. 2. The sample includes the largest commercial banks (three) and the six largest savings banks. The commercial banks and SPRON compiled their accounts for January-June 2005 in accordance with IFRS (International Financial Reporting Standards).
3. Operating expenses as a percentage of net operating income.

Sources: Financial Supervisory Authority (FME), Central Bank of Iceland.

Chart 31

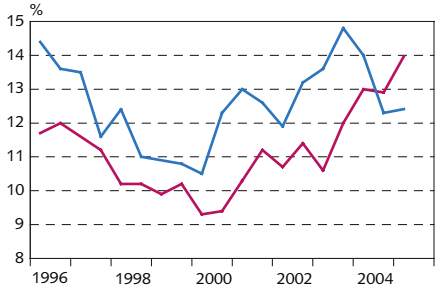
Commercial banks and savings banks: return on equity[1] H1/1996 - H1/2005



1. The commercial banks and six largest savings banks.
Sources: Financial Supervisory Authority (FME) and banks' and savings banks' annual/interim reports.

Chart 32

Commercial banks and savings banks: capital ratio[1] H1/1996 - H1/2005



1. The commercial banks and six largest savings banks.
Sources: Financial Supervisory Authority (FME) and banks' and savings banks' annual/interim reports.

Table 19 International comparison

Based on latest monthly data for each region:	*EU-25*	*EMU-12*	*USA*	*UK*	*Japan*	*Sweden*	*Norway*	*Finland*	*Denmark*	*Iceland*
Inflation in previous 12 months	2.4	2.6	4.7	2.7	-0.3	0.6	2.0	1.1	2.4	4.2
Unemployment[1]	8.6	8.4	5.1	4.7	4.2	5.4	4.8	8.3	5.5	1.6
Economic growth[2]	1.7	1.1	3.6	1.6	2.2	2.1	2.0	-0.3	2.9	6.8
Long-term interest rates (nominal yield)[3]	.	3.0	4.4	4.3	0.9	3.0	3.4	3.0	3.0	7.8
Long-term interest rates (real yield)[3,4]	.	.	1.8	1.6	.	0.9	.	.	.	3.6
Short-term interest rates[5]	2.6	2.1	3.9	4.5	0.0	1.5	2.3	2.2	2.1	10.1
In 2004 (unless otherwise stated):										
GDP per capita based on PPP, in thous. US$[6]	.	27.1	37.6	29.9	28.0	29.0	37.1	28.6	30.7	29.4
Gross saving, % of GDP[7]	.	.	13.1	14.8	25.7	23.9	24.5	24.5	22.6	14.7
Gen. government fin. balance, % of GDP	.	-2.7	-4.3	-3.4	-6.1	1.2	11.5	1.9	2.3	-0.1
Gen. government gross debt, % of GDP	.	78.5	63.4	44.2	157.6	62.1	51.1	53.3	49.4	37.5
Gen. government expenditure, % of GDP	.	48.6	36.0	44.1	37.3	57.1	46.6	50.7	56.3	47.4
Current account balance, % of GDP	0.1	0.6	-5.7	-2.2	3.6	8.0	13.8	4.3	2.5	-8.4

1. Seasonally adjusted. 2. Annual GDP growth based on latest quarterly figures. Seasonally adjusted except for Iceland. 3. Five-year Treasury bonds. 4. Figures are omitted where price indexation is not applied. 5. Three-month money market rates. 6. 2003. Converted to US dollars at an exchange rate that eliminates the difference in price levels between the countries. 7. 2002 for Japan and 2003 for USA.

Sources: EcoWin, Eurostat, OECD.

Table 20 International economic developments

							Prelimary	*Forecast*	
Annual economic growth (%)[1]	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*
World	2.8	3.7	4.7	2.4	3.0	4.0	5.1	4.3	4.3
Euro area	2.8	2.7	3.8	1.7	0.9	0.7	2.0	1.3	1.7
United Kingdom	3.2	3.0	4.0	2.2	2.0	2.5	3.2	2.0	2.2
United States	4.2	4.4	3.7	0.8	1.6	2.7	4.2	3.5	3.3
Japan	-1.0	-0.1	2.4	0.2	-0.3	1.4	2.7	2.0	1.8
Other emerging market and developing countries[2]	3.0	4.0	5.8	4.1	4.8	6.5	7.3	6.4	6.1
Annual growth in world trade (%)	4.6	5.8	12.4	0.1	3.4	5.4	10.3	7.0	7.4
Consumer price inflation (%)									
Euro area	1.1	1.1	2.1	2.3	2.3	2.1	2.1	2.1	1.8
United Kingdom	1.6	1.4	0.8	1.2	1.3	1.4	1.3	2.0	2.0
United States	1.5	2.2	3.4	2.8	1.6	2.3	2.7	3.2	2.8
Japan	0.6	-0.3	-0.9	-0.7	-1.0	-0.2	0.0	-0.2	0.2
Unemployment, % of labour force									
Euro area	10.0	9.2	8.2	7.9	8.3	8.7	8.9	8.8	8.7
United Kingdom	6.3	6.0	5.5	5.1	5.2	5.0	4.8	4.7	4.8
United States	4.5	4.2	4.0	4.8	5.8	6.0	5.5	5.1	5.0
Japan	4.1	4.7	4.7	5.0	5.4	5.3	4.7	4.3	4.0
General government financial balance, % of GDP[3]									
Euro area	-2.3	-1.3	0.1	-1.8	-2.5	-2.8	-2.7	-2.8	-2.7
United Kingdom	0.1	1.1	3.8	0.7	-1.8	-3.4	-3.4	-2.9	-3.0
United States	0.4	0.9	1.6	-0.4	-3.8	-4.6	-4.3	-4.1	-3.9
Japan	-5.5	-7.2	-7.5	-6.1	-7.9	-7.7	-6.1	-6.1	-5.3
Long-term interest rates[4]									
Euro area	4.8	4.7	5.4	5.0	4.9	4.1	4.1	3.5	3.6
United Kingdom	5.5	5.1	5.3	4.9	4.9	4.5	4.9	4.6	4.8
United States	5.3	5.6	6.0	5.0	4.6	4.0	4.3	4.5	5.3
Japan	1.5	1.7	1.7	1.3	1.3	1.0	1.5	1.4	1.8

1. Real GDP percent change between years. 2. In May 2004, the IMF revised its world economic classifications into two categories of countries. The category "Other emerging market and developing countries" comprises 146 countries. 3. General government, e.g. central government, local governments and social security transactions. 4. Yields on ten-year Treasury bonds.

Sources: Consensus Forecasts, International Monetary Fund, OECD.

Table 21 Historical economic indicators (continued on next page)

	Consumer prices [1]		Króna effective exchange rate[2]			Interest rates (%)			Money and credit			Ratio of	External	
				Real exchange rate[4]			Banks' secured lending (real yield)		% change over year			gr. reserves	debt,	Growth
	Consumer price index	CPI inflation (%)	Nominal exchange rate[3]	Relative CPI	Relative ULC	Gov. bonds average yield[5]	Non-indexed	Indexed	M3	DMBs' lending	Credit system lending	to merch. imports[6]	% of GDP[7]	of real GDP (%)
1976	1.8	32.4	8.5	103.3	106.4	5.8	-7.4	.	32.5	26.8	32.2	2.2	40.7	6.0
1977	2.4	30.3	9.7	113.1	114.2	3.5	-9.5	.	43.9	40.5	41.8	2.0	37.6	8.8
1978	3.5	44.0	13.9	105.3	106.6	3.3	-13.4	.	48.7	47.3	62.8	2.6	39.2	5.9
1979	5.0	44.5	18.7	100.0	100.7	3.5	-15.4	.	55.9	58.1	46.4	2.5	39.7	4.9
1980	8.1	61.8	25.9	100.0	100.0	3.5	-8.3	2.3	65.4	66.4	71.1	2.4	35.9	5.7
1981	12.2	50.8	34.7	104.4	106.3	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	95.8	102.2	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	90.3	84.3	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	94.7	83.4	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	93.2	84.5	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	95.0	86.4	8.5	4.3	5.2	35.0	19.1	20.1	3.6	56.5	6.2
1987	83.4	18.8	177.3	104.1	109.0	8.7	4.7	7.7	35.2	42.1	31.4	2.4	49.4	8.6
1988	104.6	25.4	202.6	109.4	113.4	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	100.6	98.1	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	97.3	87.4	7.0	9.3	8.0	14.9	11.0	12.5	3.3	55.2	1.2
1991	155.4	6.8	283.6	99.9	89.6	8.1	10.0	9.2	14.4	11.6	15.4	3.2	56.0	0.0
1992	161.2	3.7	285.0	99.8	92.5	7.4	11.8	9.3	3.8	5.3	11.8	4.0	58.8	-3.1
1993	167.8	4.1	308.8	94.4	84.3	6.7	11.5	9.1	6.5	5.0	11.1	4.3	66.7	1.7
1994	170.3	1.5	324.8	89.3	77.6	5.0	9.5	7.9	2.3	-1.3	4.5	2.6	63.4	3.8
1995	173.2	1.7	322.3	89.4	81.0	5.6	10.1	8.7	2.2	0.0	5.9	2.4	63.4	0.4
1996	177.1	2.3	322.9	89.7	81.9	5.5	10.5	8.9	6.8	11.8	9.3	3.0	62.9	5.0
1997	180.3	1.8	318.7	90.5	84.5	5.3	11.1	9.0	8.7	12.7	11.8	2.6	64.8	5.3
1998	183.3	1.7	313.6	91.9	88.7	4.7	11.8	8.8	15.1	30.3	15.1	2.2	70.0	5.5
1999	189.6	3.4	313.1	93.6	90.2	4.4	8.0	8.6	17.1	22.8	17.3	2.6	82.5	4.2
2000	199.1	5.0	313.3	96.2	91.4	5.1	12.7	9.5	11.2	26.2	17.2	2.1	102.7	5.0
2001	212.4	6.7	376.3	83.7	78.7	5.1	9.4	10.2	14.9	13.4	19.2	2.1	120.4	3.3
2002	222.6	4.8	365.2	88.5	84.1	5.2	13.7	10.1	15.3	0.9	3.2	2.5	125.1	-1.3
2003	227.3	2.1	343.3	94.1	88.5	4.4	9.3	9.1	17.5	14.8	11.4	3.5	144.3	3.6
2004	234.6	3.2	336.3	97.2	90.6	3.9	8.1	8.0	15.0	39.6	20.2	3.6	205.8	6.2

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. 3. 1983=100. 4. 1980=100. ULC=unit labour cost. 5. Annual average yield of indexed Treasury bonds of all maturities. Yields on Iceland Stock Exchange from 1987. Before that primary market yields. 6. Gross foreign exchange reserves at end of period as a ratio of the average monthly value of merchandise imports. Calculated at fixed exchange rates. 7. Gross debt. Direct investment capital excluded.

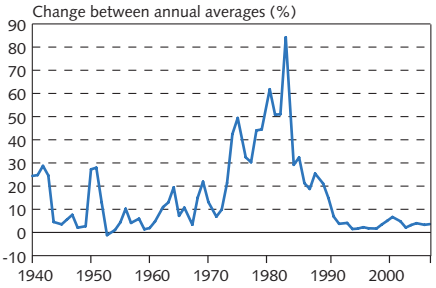
Table 21 (continued) Historical economic indicators

	Components of GDP (% change from previous year)			External trade (% change from previous year)				General government (% of GDP)[8]			Labour market (% of labour force)		Wages (% change from previous year)	
				Goods & services (volume changes)										
	Private consump-tion	Gross fixed cap. formation	National expendi-ture	Exports	Imports	Terms of trade	Curr. acc. balance (% of GDP)	Financial balance	Revenues	Expen-ditures	Unem-ployment	Labour particip.	Real wages[9]	Real disposable income
1976	5.4	-2.7	-3.5	13.1	-3.6	7.8	-1.5	1.1	32.1	31.1	0.5	73.4	.	2.3
1977	12.9	11.5	15.0	8.9	20.6	7.0	-2.3	-0.2	30.5	30.7	0.3	72.5	.	15.5
1978	9.0	-5.8	2.1	15.2	3.7	0.3	1.2	0.1	31.0	30.9	0.3	73.6	.	8.5
1979	2.8	-1.5	3.5	6.3	2.5	-8.6	-0.7	0.9	32.4	31.4	0.4	73.0	.	2.0
1980	3.4	13.5	5.7	2.7	3.0	-2.8	-1.9	1.3	35.1	33.8	0.3	74.1	.	1.1
1981	6.2	1.2	5.6	3.2	7.1	-0.5	-4.1	1.3	36.3	35.0	0.4	76.8	0.7	5.4
1982	5.0	0.1	5.0	-8.9	-0.6	-0.8	-7.9	1.7	37.4	35.7	0.8	77.6	1.7	2.2
1983	-5.6	-12.7	-8.6	11.0	-9.7	-1.3	-1.9	-2.0	35.6	37.6	1.0	77.4	-16.7	-12.5
1984	3.7	9.4	6.4	2.4	9.2	0.6	-4.6	2.2	36.6	34.4	1.3	77.6	-3.1	-2.5
1985	4.2	1.0	2.7	11.1	9.4	-0.9	-3.8	-1.6	35.2	36.9	0.9	79.3	1.2	10.8
1986	6.9	-1.9	4.5	5.9	0.9	5.4	0.5	-4.0	35.3	39.3	0.7	80.9	5.7	9.5
1987	16.2	19.1	15.7	3.3	23.3	4.3	-3.4	-0.8	35.5	36.3	0.4	84.1	9.0	25.8
1988	-3.8	-0.1	-0.6	-3.6	-4.6	-0.8	-3.4	-2.0	39.2	41.2	0.6	80.1	2.2	-2.7
1989	-4.2	-7.8	-4.4	2.9	-10.3	-3.9	-1.3	-4.5	39.1	43.6	1.7	78.7	-9.1	-9.4
1990	0.5	3.0	1.5	0.0	1.0	-2.0	-2.1	-3.3	38.8	42.1	1.8	77.5	-4.9	-4.6
1991	2.9	2.7	3.8	-5.9	5.2	3.5	-4.1	-2.9	40.5	43.5	1.5	76.2	1.4	2.1
1992	-3.2	-10.3	-4.4	-2.0	-6.0	-0.6	-2.4	-2.8	41.6	44.5	3.1	75.5	-0.8	-2.7
1993	-4.6	-9.8	-2.6	6.5	-7.5	-3.9	0.7	-4.5	39.7	44.3	4.4	75.3	-2.6	-7.6
1994	2.7	-0.3	2.0	9.3	3.8	0.4	2.0	-4.8	39.3	44.1	4.8	75.4	-0.3	0.0
1995	2.3	-1.7	2.5	-2.3	3.6	1.3	0.8	-3.0	40.4	43.4	5.0	75.7	2.8	3.8
1996	5.5	25.3	7.0	9.9	16.5	-3.1	-1.8	-1.6	41.3	42.9	4.4	76.4	4.0	4.1
1997	6.2	10.1	6.2	5.6	8.0	2.1	-1.8	0.0	41.3	41.3	3.9	76.6	3.6	2.5
1998	10.1	31.9	13.2	2.5	23.4	5.6	-6.9	0.5	42.4	41.9	2.8	77.1	7.6	8.7
1999	7.8	-3.8	4.3	3.9	4.3	-0.8	-7.0	2.4	45.3	42.9	1.9	77.3	3.3	6.5
2000	4.1	14.7	6.6	4.3	8.5	-2.7	-10.3	2.5	45.0	42.9	1.3	77.3	1.6	5.2
2001	-3.2	-4.9	-2.8	7.4	-9.1	0.2	-4.4	0.2	43.8	44.0	1.4	77.5	2.0	2.0
2002	-1.8	-19.6	-3.8	3.9	-2.6	0.6	1.4	-0.8	44.8	44.9	2.5	77.3	2.2	-0.3
2003	5.8	20.5	7.2	1.4	10.7	-4.3	-5.0	-2.1	45.4	46.9	3.4	76.6	3.4	4.7
2004	6.9	21.0	8.4	8.3	14.2	-1.2	-8.4	-0.1	47.1	47.4	3.1	76.3	1.4	1.9

8. Central and local governments and the social security system. 9. Deflated by consumer prices.

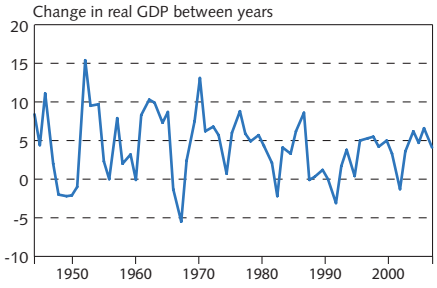
Sources: Directorate of Labour, Iceland Stock Exchange, Ministry of Finance, Statistics Iceland, Central Bank of Iceland.

Chart 33
Consumer price inflation 1940-2007[1]



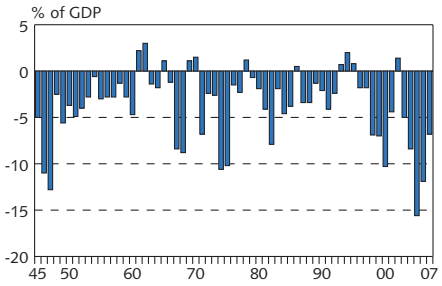
1. Central Bank forecast for 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 34
Economic growth 1945-2007[1]



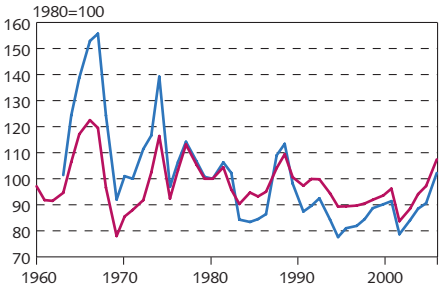
1. Preliminary 2004. Forecast 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 35
Current account balance 1945-2007[1]



1. Preliminary 2004. Forecast 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

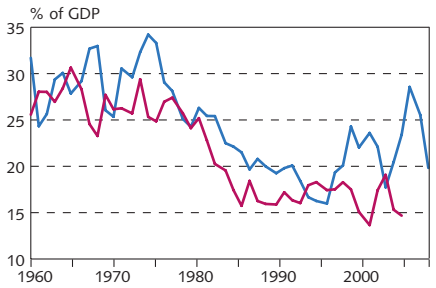
Chart 36
Real effective exchange rate of the Icelandic króna 1960-2005[1]



Relative unit labour cost
Relative consumer prices

1. Preliminary 2004. Estimate 2005.
Source: Central Bank of Iceland.

Chart 37
Gross national saving and fixed capital formation 1960-2007[1]

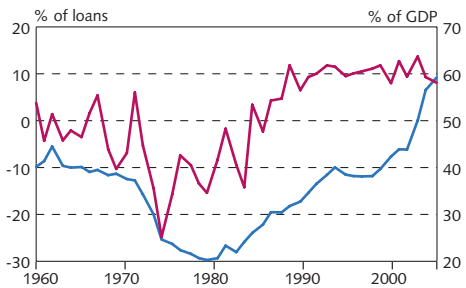


Gross fixed capital formation
Gross national saving

1. Preliminary 2004. Forecast 2005-2007.
Sources: Statistics Iceland, Central Bank of Iceland.

Chart 38
Real yield and broad money 1960-2004

Real yield on non-indexed bank loans and M3 as percent of GDP



M3 (right-hand axis)
Real yield (left-hand axis)

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

Table 22 Structural indicators for the Icelandic economy

I Population and labour force (thous.)	*1970*	*2004*
Population at end of year	204.8	293.6
under 16 years of age	70.6	70.1
16-74 years of age	127.3	207.2
above 74 years of age	7.0	16.3
Average population growth in previous 5 years (%)	1.1	1.0
Labour force (employed persons)	82.7	147.7
Males	54.7	84.9
Females	28.0	62.8

II Employment by industry (%)	*1970*	*2004*
Agriculture	12.4	3.3
Fisheries	6.6	3.9
Fish processing	7.8	5.1
Manufacturing industry	15.2	12.1
Construction, electricity and water supply	11.3	10.3
Wholesale and retail trade, restaurants & hotels	13.5	16.7
Transport, storage and communication	8.4	6.7
Financial, insurance, real estate, business services	4.0	9.5
Producers of government services	12.4	18.9
Other services	8.3	13.4

III Merchandise exports	*1970*	*2004*
Distribution by category (%)		
Marine products	77.1	60.2
Manufactures	18.4	35.1
thereof aluminium and ferro-silicon	13.2	21.1
Agricultural products	3.4	2.1
By regions (%)		
United States	30.0	9.3
European Union	52.8	75.2
Other	17.2	15.5

IV National income and output	*1970*	*2004[1]*
Gross domestic product (GDP), b.kr.	0.4	885.0
GDP, billion USD	0.5	12.6
National income per capita, thous. USD	2.0	42.1
GDP per capita (PPP), thous. USD[2]	2.7	33.6
Gross capital formation, % of GDP	25.3	23.4
Gross national saving, % of GDP	26.1	14.7
Net national saving, % of net national product	13.8	2.6
Export of goods and services, % of GDP	46.4	35.7
Public consumption, % of GDP	12.7	25.6
Gen. government total expenditures, % of GDP[3]	28.9	47.1
Total taxes, % of GDP[3]	28.9	40.2

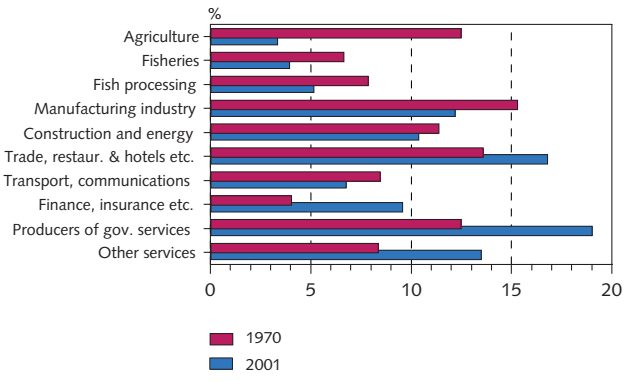
V Capital and debt	*1970*	*2004[1]*
% of GDP unless otherwise stated		
Fixed assets, % of GDP	3.4	3.2
Fixed assets, billion USD	1.8	47.4
Net external debt	20.1	134.3
Debt service, % of export revenue	11.3	57.5
General government total debt	13.0	37.3
General government net debt	-2.3	22.8
Broad money (M3)	37.5	59.2
Credit system total lending	484.8	294.1
to industries	53.6	162.6
to households	21.2	97.2
Market capitalisation of listed equities	.	120.1

1. Preliminary data. If preliminary data for 2004 are not available another year is stated. 2. Converted to US dollars at an exchange rate that eliminates the difference in price levels between the countries. 3. National accounts basis.

Sources: Iceland Stock Exchange, National Economic Institute, OECD, Statistics Iceland, Central Bank of Iceland.

Chart 39

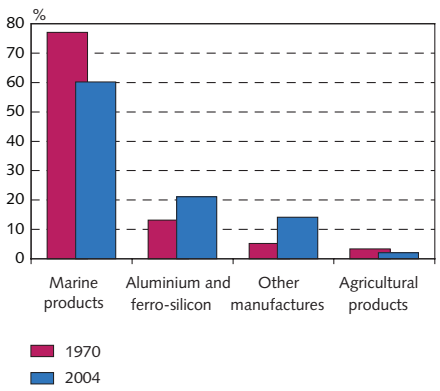
Employment by industry in 1970 and 2001



Source: Statistics Iceland.

Chart 40

Merchandise exports by category 1970 and 2004



Source: Statistics Iceland.

Table 23 Merchandise exports and imports by regions[1]

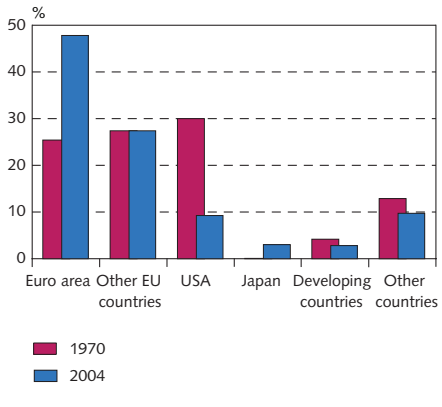
	Share of total (%)						B.kr.	
					Jan.-Sept.		Jan.-Sept.	
Merchandise exports, fob	*1970*	*1980*	*1990*	*2000*	*2004*	*2005*	*2004*	*2005*
European Union	52.8	52.3	70.7	67.4	75.2	74.8	152.2	105.4
Euro area	25.4	30.2	37.6	42.3	47.8	49.1	96.8	69.2
Other EU countries	27.4	22.0	33.1	25.1	27.4	25.7	55.4	36.3
United Kingdom	13.2	16.5	25.3	19.3	19.0	17.3	38.5	24.4
Other Western European countries	2.8	2.3	3.4	7.8	6.3	6.6	12.8	9.3
Eastern Europe and former Soviet Union[2]	9.6	8.8	2.9	1.4	1.2	1.2	2.4	1.7
Russia	6.8	5.4	2.5	0.4	1.1	1.2	2.3	1.7
United States	30.0	21.6	9.9	12.2	9.3	8.0	18.8	11.3
Japan	0.1	1.5	6.0	5.2	3.0	4.0	6.1	5.6
Other OECD countries	0.5	0.6	0.5	2.0	1.5	1.6	3.0	2.3
Developing countries	4.2	12.9	5.5	3.0	2.8	3.1	5.7	4.4
Other countries	0.0	0.0	1.1	1.0	0.7	0.6	1.4	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	202.4	140.9
Merchandise imports, cif								
European Union	64.9	58.0	59.9	57.0	60.9	62.2	158.6	143.8
Euro area	32.0	33.2	35.5	33.5	34.2	33.2	89.2	76.8
Other EU countries	33.0	24.8	24.4	23.6	26.6	29.0	69.4	67.0
United Kingdom	14.3	9.5	8.1	9.0	6.8	5.7	17.8	13.3
Other Western European countries	5.4	8.1	5.2	9.7	12.3	9.8	32.1	22.7
Eastern Europe and former Soviet Union[2]	10.4	10.9	6.5	5.7	1.2	0.9	3.2	2.2
Russia	7.2	9.7	5.0	1.8	1.0	0.4	2.7	1.0
United States	8.2	9.4	14.4	11.0	10.1	9.5	26.3	22.0
Japan	2.9	4.0	5.6	4.9	3.8	4.6	10.0	10.7
Other OECD countries	0.4	5.8	3.7	4.5	3.3	3.8	8.5	8.8
Developing countries	7.2	2.7	3.1	5.6	7.2	8.1	18.7	18.7
Other countries	0.6	1.1	1.4	1.5	1.2	1.0	3.1	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	260.4	231.2

1. In data prior to the year 2000, country groups are based on the year 2000. 2. The eight Eastern European countries that acceded to the European Union in 2004 are included with the EU as of 2004 and removed from this category at the same time.

Source: Statistics Iceland.

Chart 41

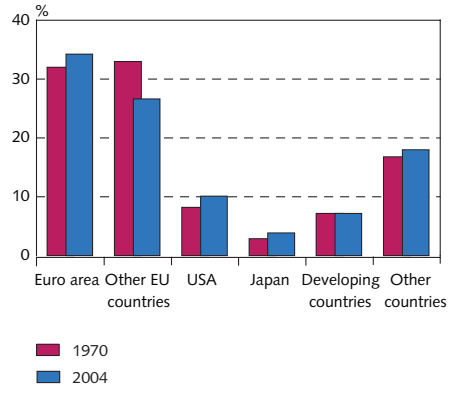
Merchandise exports by region
1970 and 2004



Source: Statistics Iceland

Chart 42

Merchandise imports by region
1970 and 2004



Source: Statistics Iceland.