Economic and monetary developments and prospects[1]

The economic recovery has begun but inflation will be below the target for most of next year

There are growing signs of an ongoing recovery, most indicating that the upswing will gain momentum during the coming winter. Some slack still exists in the economy, however. There are no clear signs of a turnaround in the labour market and seasonally adjusted unemployment has still not decreased. Leading indicators such as credit growth and business surveys of labour demand nonetheless strongly suggest that demand will continue to rise in the near future. Boosted by increased quotas during the coming fishing year, more public sector construction projects and aluminium industry investments, a reasonable level of output growth can be expected this year. The Central Bank's growth forecast is 2¾%. However, since the growth rate is below estimated potential, the slack in the economy will increase slightly this year. The growth rate in 2004 is expected to exceed estimated potential at 3½%, meaning that the output gap could turn positive next year. Inflation will nonetheless remain below the Central Bank's target until the final quarter of 2004, according to the forecast. This is explained by the low current rate of inflation, weak economy and appreciation of the króna in recent months. Two years ahead, inflation is forecast to creep above the target, although this still does not warrant any change in interest rates, given the current rate of inflation and risk spectrum of the forecast. Demand shocks could leave inflation even lower than forecast but deflation is highly unlikely. Excluding this possibility, fiscal and housing loan policies will have a major impact on the scope and timing of interest rate rises.

I Economic developments

Growth picked up during the first quarter of this year, especially in private consumption, as had been clearly indicated before. There are various signs of slightly slower private consumption growth in Q2 and exports appear to have been sluggish. Fish catches so far this year have been down from 2002 by the equivalent of a one-fifth contraction in the case of the pelagic harvest. However, good demersal and pelagic catches were reported in June. The terms of trade have developed rather unfavourably and oil prices have remained high this year. Moreover, global economic developments do not give much grounds for optimism, apart from the outlook for continuing low interest rates on Iceland's foreign debt. Slack seems to be present in most areas of the Icelandic economy and seasonally adjusted unemployment has continued to mount. The króna appreciated in May but has since settled back to roughly the level at the beginning of the year. After a temporary surge since the beginning of the year, inflation waned again in May, June and July. Inflation is driven by rising prices of housing and services, while goods prices have dropped and inflation is currently below the Central Bank's target. The low inflation rate has kept real disposable income steady this year and some way

1. This article uses data available on July 25, 2003. An Appendix to this article discusses a comparative study of inflation reports made by research institutes in Geneva and London, in which *Monetary Bulletin* received a favourable rating.

higher than a year before. At the same time real interest rates have generally been trending downwards. Households have embraced these positive conditions with brisk real estate trading, and housing prices have reached a new peak in real terms. On the whole, there are unambiguous signs of a recovery in domestic demand.

Price developments

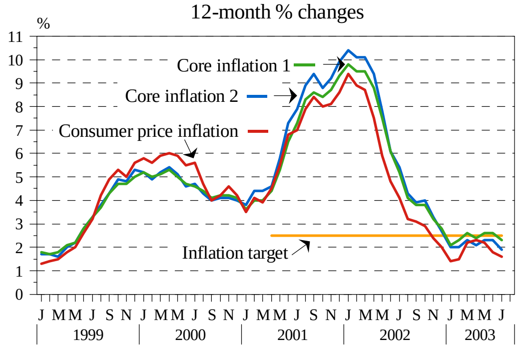
Inflation below the target for nine consecutive months

Inflation has been below the Central Bank's target since November last year, at close to 2% over the past three months and 1.6% in the beginning of July. One explanation for the low rate of inflation in July was unusually early summer clearance sales of clothing and shoes; the twelve-month increase in the CPI would have been 1.9% if they had not taken place so early. As before, the bulk of the increase in the CPI can be attributed to its housing component, but prices of public services have also risen by much more than the general level of prices. Goods prices are still lower than a year before. Trading partner countries have experienced a slowdown in inflation in recent months to broadly the same rate as in Iceland on average. Inflation is now very low among some major trading partner countries, for example around ½% in Germany, but up to 4% in the countries with the highest inflation. Japan has been in the grips of deflation.

Chart 1

CPI inflation 1999-2003

12-month % changes



Source: Statistics Iceland.

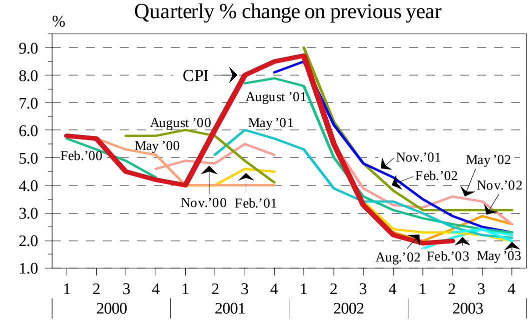
The CPI increase in the first two quarters was below the last inflation forecast

In *Monetary Bulletin* 2003/2 the Central Bank had forecast a 2.3% rise from Q2/2002 to the same period in 2003. In the event the index rose by 2.0%. The deviation is explained by lower-than-expected goods prices and a stronger króna during the second quarter. However, the króna depreciated in June and in the first half of July it was just over 3% lower than had been forecast in May.

Chart 2

CPI and the Central Bank inflation forecast 2000-2003

Quarterly % change on previous year



Sources: Statistics Iceland, Central Bank of Iceland.

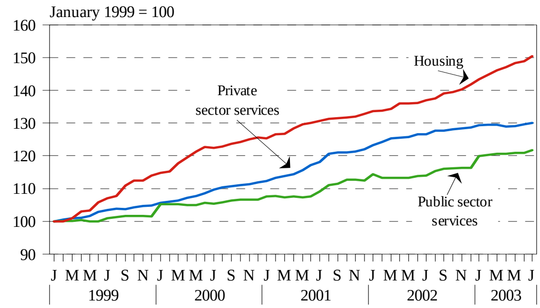
Higher housing and service prices account for more than the entire twelve-month increase in the CPI ...

In the beginning of July the twelve-month increase in the housing component of the CPI amounted to 9.9% and market prices of housing had risen by 12.1% (for a discussion of the residential housing market, see pp. 12-13). Excluding the housing component, the CPI remains unchanged from the year before. Another strong impact on the CPI over the past twelve months has been public service prices. In the beginning of July the twelve-month rise in this component was almost 7%, pushing consumer prices up by almost ½%. As pointed out in *Monetary Bulletin* 2003/2, the increase in public service prices is explained by a backlog, the impact of which should tail off shortly and largely vanish by the beginning of 2004.

The twelve-month rise in private service prices has slowed down since Q1 to just over 2½% in Q2, which in July contributed to 0.6% of the increase in the CPI from the year before. In some cases the appreciation of the króna has not been transmitted to lower services prices as might have been expected.

Chart 3

Indices of housing, public sector and private sector 1999-2003



Source: Statistics Iceland.

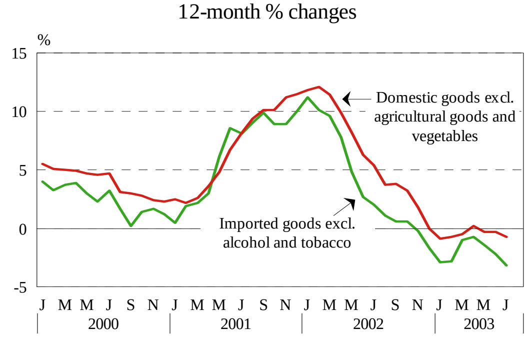
... but goods prices have gone down

On the whole, goods prices are more sensitive to changes in the exchange rate. The strengthening of the króna last year is therefore reflected in particular in goods prices. In the beginning of July, prices of imported goods excluding alcohol and tobacco were 3.2% lower than a year before and prices of domestic goods excluding agricultural products and vegetables had gone down by almost 1%. Exchange rate changes have not had as strong an effect over the past four months as in the beginning of the year, however, because the króna stopped climbing.

Chart 4

Goods prices 2000-2003

12-month % changes



Source: Statistics Iceland.

Inflation expectations have been mostly below the target, but rising in recent weeks

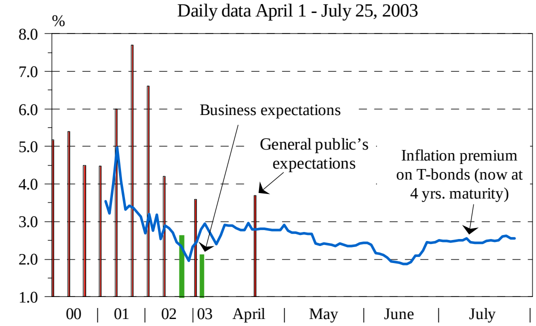
The four-year inflation premium on Treasury bonds decreased in May and until mid-June, and was for most of the period close to or below the inflation target. In mid-June the inflation premium dipped below 2% following a short-lived drop in non-indexed bond yields. Towards the end of June it headed up again and has recently been just under 2½%.

Household inflation expectations inched downwards in a survey conducted from June 25 to July 8. On average, respondents expected an inflation rate of 3.4% over the next twelve months, with a median of 3%. Generally speaking, inflation expectations keep pace with inflation awareness, i.e. the households' assessment of inflation over the preceding twelve-month period. However, inflation awareness has fallen by more than expectations recently, which is consistent with a lower inflation rate. On average, households considered the rate of inflation to have been 2.8% with a median of 2%, i.e. only slightly higher than the twelve-month increase in the CPI in June.

Chart 5

Inflation expectations

End-of-month data January 2000 - March 2003
Daily data April 1 - July 25, 2003



Source: Central Bank of Iceland.

External conditions and output

The external conditions of the economy have been rather less favourable so far in 2003 than a year before. Fish catches have been considerably smaller and the terms of trade have taken a negative turn. Oil price rises connected with the war in Iraq have been reversed to some extent but fuel prices have remained fairly high. Global economic developments are not encouraging either, despite signs of a nascent recovery. However, the sluggish recovery among trading partner countries has led to even further reductions in interest rates, which is favourable for Iceland's indebted economy. A decline in fish catches and lower prices for products have caused merchandise exports to contract so far this year.

The underlying current account balance was poorer in Q1/2003 than a year before

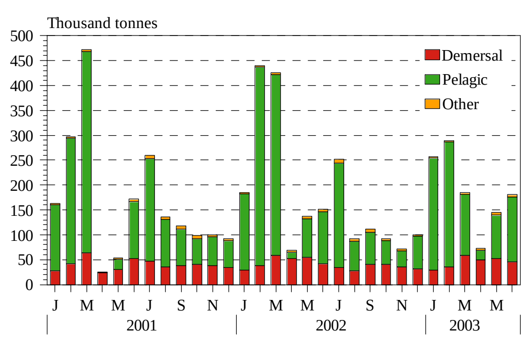
In the first quarter of 2003 there was a deficit on the current account of just under 1 b.kr., compared with 1½ b.kr. in the same period last year. However, these figures give a misleading picture of the underlying trend, since the import of an aircraft had a significant effect last year. Excluding irregular transactions involving aircraft and vessels, there was a sizeable surplus last year and the merchandise account deteriorated by 2.9 b.kr. in Q1/2003 rather than improving by 1.8 b.kr. The underlying current account balance actually worsened by more than 4 b.kr. Imported services increased by almost 15% at a constant exchange rate, compared with the same period in 2002. This burst of growth is in line with other indicators of mounting demand during the first quarter. Exports of services grew by much less. Consequently, the deficit on the services account widened by a hefty 2 b.kr. while the deficit on the balance on income shrank by 1.4 b.kr.

Much smaller demersal catch in the first months of the year contributed to a sharp contraction in exports in April and May

The external trade balance seems set for a much less favourable outcome in Q2 than in the first quarter. In particular this can be traced to a much smaller demersal fish catch than last year. As a result, exports were low in April and May, and over the first five months of 2003 they dropped by 1.7% in volume terms, compared with 7.5% growth in the first three months. This is largely explained by a contraction of more than 7% in the volume of exported marine products, and of almost 7% in manufactured goods apart from aluminium. Only aluminium exports expanded, by 11%. This fairly sharp turnaround is also reflected in a 4.6 b.kr. deficit on the merchandise account over the past three months (March-May), compared with a surplus of 7.1 b.kr. during the first two months of this year. On the other hand, the unused fishing quota is larger than at the same time last year which, together with an increase in quotas for cod, haddock and saithe in the next fishing year (from September 1) and a substantial hike in the blue whiting quota this summer, gives grounds for expecting the position to improve as the year wears on.

Chart 6

Monthly fish catches 2001-2003



Source: Statistics Iceland.

More general merchandise imports than last year

At the same time as exports have contracted, underlying import growth has been on the increase. On account of the imported aircraft in 2002, merchandise imports over the first five months were marginally less in volume terms this year, but excluding such irregular items the year-on-year growth was almost 8%, and imports of durables increased by 14%. Imports over the past three months, measured at constant exchange rates and excluding vessels and aircraft, were roughly 15% more than a year before.

The real exchange rate depreciated between the quarters as the króna weakened

The króna weakened by almost 2% between Q1 and Q2 and by mid-July it was more than 3% down from its position at the end of May. The weaker nominal exchange rate led to a corresponding depreciation in the real exchange rate. In Q2 the real exchange rate was more than 4% stronger than on average over the past ten years and close to the twenty-year average, based on relative consumer prices. In terms of relative unit labour costs it was 7½% and just over 2% stronger than the average over the past ten and twenty years respectively.

Profitability of listed companies was unchanged in Q1 from a year before, but fisheries companies' performance worsened

Profitability of companies listed on Iceland Stock Exchange remained unchanged in Q1/2003 compared with a year before. Their turnover, after adjustment for changes in the exchange rate and price level, grew substantially from a year before, EBIDTA was 10.5% of turnover but profit after tax decreased due to lower exchange rate gains.

EBITDA of fisheries companies was down quite sharply from the same period in 2003 – from 34% to 24% (not including seafood marketing companies and the Brim fisheries group which is a subsidiary of Eimskip). However, this can be considered a good performance from a historical perspective. Other things being equal, EBITDA of fisheries companies tends to peak in the first half of the year. This year, however, the amount of unused quota at the end of Q1 was exceptionally large, and the outlook for demersal catches this summer is also quite favourable. Quotas for major demersal species have been increased for the coming fishing year as well. EBITDA can therefore be expected to be largely retained at the Q1 level for the remainder of the year. Despite smaller profits, fisheries companies boosted their equity ratio from 32% to 34.4%, mainly because the strengthening of the króna reduced their foreign debts.

The appreciation of the króna by 13% between the first quarters of 2002 and 2003 played no small part in the fall in EBIDTA. However, it certainly does not explain this reduction in full, since various cost items declined in line with product prices, cf. the discussion in Box 1. Another important factor was that the demersal catch, which normally generates a large part of EBIDTA during the first months of the year, decreased by 270 thousand tonnes between Q1/2002 and 2003. A smaller catch of cod (a high-value species) and a drop in marine export prices were also contributing factors.

Business profitability forecasts for the current year produced by the research departments of financial companies assume that EBIDTA of listed companies will be broadly unchanged from 2002. They foresee considerably lower EBITDA among fisheries companies, although still reasonable from a historical perspective. In several sectors, EBIDTA in 2003 is expected to exceed the 2002 ratio. Slimmer profits after tax are forecast compared with last year, reflecting lower exchange rate gains.

Table 1 Profitability and financial position of listed companies in Q1/2002 and Q1/2003

	EBITDA (% of turnover)		*Profit after tax (% of turnover)*		*Equity ratio (%)*	
%	*Q1/2002*	*Q1/2003*	*Q1/2002*	*Q1/2003*	*Q1/2002*	*Q1/2003*
Total	10.7	10.5	9.1	7.2	34.9	37.9
Fisheries	33.8	23.8	33.3	24.9	32.1	34.4
Manufacturing	13.1	16.2	10.8	10.0	41.5	42.2
Transportation	-7.6	-0.7	-3.6	-1.3	35.6	33.4
IT and communications	18.6	22.5	8.3	4.7	37.6	39.6

Source: Central Bank of Iceland.

A survey of the conditions and outlook in the manufacturing sector, conducted by the Federation of Icelandic Industries in June, shows wide divergences in the impact of exchange rate changes on businesses. The great majority of businesses in the survey – 58 out of 85 – considered that the strong exchange rate had either a fairly positive or little impact on their profitability. If the results are weighted according to turnover, businesses felt the strong exchange rate had little effect on average. More than one-third of the weighted sample thought their profitability had benefited from the strong króna, roughly 40% felt little effect and only one-fifth a negative impact.

Robust private consumption growth in the first quarter

According to the quarterly national accounts, GDP in Q1/2003 grew by 3.3% from the same period the pre-

Box 1 The position and outlook in the fisheries sector – what is the explanation for poorer profitability?

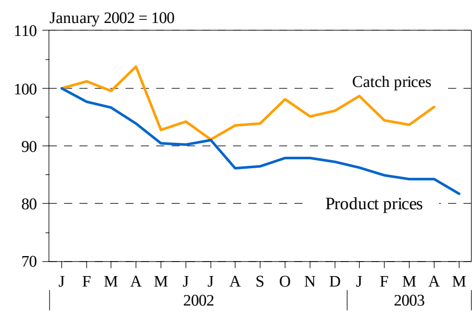
Deteriorating profitability in the fisheries sector has been under discussion recently. As pointed out in this chapter, it is out of the question to describe profitability in the first quarter as bad, even though it was not as good as in the past two years, which set records in the industry. Profitability within certain fisheries segments, however, is significantly poorer than that of the sector as a whole, or the part of it which is visible in the Icelandic equity market. This applies in particular to shrimp processing, which has been retrenched recently in Iceland and elsewhere.

There are many reasons for poorer profitability. The strengthening of the króna has certainly squeezed fisheries. Thus the price of foreign currency in Q1/2003, weighted with the merchandise export basket, was roughly 12% lower than a year before. It should be borne in mind, however, that the relative exchange rates of Iceland's main trading partner countries have changed markedly at the same time. For example, the euro fell by only 5% against the króna, but the US dollar by 23% and sterling by 13%. After taking into account that fish meal is largely sold in sterling and fish oil almost solely in dollars, the US dollar weighs close to 23% and sterling roughly 30% in Iceland's exports of marine products. Thus sterling has a considerably heavier weight in exports than in the exchange rate index, where it is just over 12%. The US dollar has a similar weight at just under 25%. Approximately 40% of marine products are exported to the euro area or European countries whose currencies are linked to the euro, while their currencies weigh 52% in the exchange rate index. It has a hefty impact when the large gains that a strong dollar generated for a company selling to the American market in 2000-2001 are completely wiped out.

The changes in the exchange rate between Q1/2002 and Q1/2003 have hurt branches of the industry that depend on the US and UK markets, or have made sales agreements in dollars or sterling without fully hedging against exchange rate risk.[1] In particular this applies to shrimp processing companies, which sell almost exclusively to the UK market, and also to fish meal producers who have made unhedged sales agreements in sterling. Specialised producers for the American market have been hit in the same way. Since a substantial share of EBIDTA over the first months of the year is based on processing of pelagic fish into meal and oil, the weakening of sterling has probably had a significant effect on profitability. The problem faced by shrimp processors is compounded by oversupply resulting mainly from a massive increase in shrimping by Canada, which has also consolidated its position by virtue of the weak Canadian dollar,[2] and by lower catches from Icelandic shrimp grounds as cod stocks strengthen there. Only an insignificant part of the difficulties of the shrimp industry can therefore be attributed to the strong króna.

Another problem faced by the fisheries sector is that prices of raw material for processing do not always completely move in pace with product prices. Recently, product prices have declined sharply in króna terms, while raw material prices have not followed suit. This hits fish processing companies which

Demersal fish product and catch price indices January 2002 - May 2003



Source: Statistics Iceland.

1. In efficient markets, however, the price formation of fish meal, which is a relatively homogeneous good, ought to reflect the change in the sterling exchange rate in the long run.

2. In Q1/2003 the Canadian dollar had slid by 18% against the króna compared with the same period in 2002. Canada has also increasingly sidestepped tariffs by having its catches processed in EU countries, especially Denmark, and mixing them with domestic production.

are not engaged in fishing operations as well. Cod for processing, for example, was priced 4% higher over the first four months of 2003 than a year before, at the same time as demersal fish prices fell in export markets and the króna strengthened. Prices of shrimp for processing over the first four months of 2003 decreased by only 4% from the same period the year before, which is far less than the fall in product prices in króna terms. This is a structural problem within the fisheries sector and exchange rate policy cannot rectify it. High fuel prices in Q1 also had a negative effect on the profitability of fishing operations.

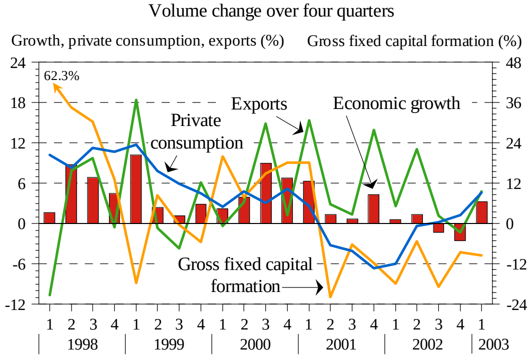
All the above shows that the fisheries sector is not beset by a single problem which the buoyant króna can be identified as causing. Admittedly the stronger exchange rate has squeezed fisheries profitability since last year, when it was at one of its highest levels. Nonetheless the problem lies in revenue imbalances within the fisheries sector as a whole and specific problems in various segments such as the shrimp industry which cannot be blamed on exchange rate developments. The flexibility of the fisheries sector will also determine how it fares – for example, in the success of new market penetration, exchange rate hedging and product development. It may be added that fisheries companies are now generally much better equipped to tackle temporary setbacks than they have been in the past.

vious year. A contraction had been recorded in the preceding two quarters. This growth was mainly driven by private consumption, which increased by 4½%, reinforced by the favourable net impact of external trade. Public consumption also grew sharply, while investment was much lower than a year before.

The surge in private consumption does not come as a surprise. It has been gaining momentum for the past half a year and a number of turnover-related indicators had already pointed to robust private consumption growth in the first months of this year (see *Monetary Bulletin* 2003/2). However, it should be borne in mind that some of the growth reflects low private consumption in Q1/2002, which improved in the following quarter.

Exports increased by 4.8% during the first quarter, and imports contracted slightly. External trade therefore contributed roughly 1½ percentage points to first-quarter output growth. There are many indications that external trade will make a negative contribution to growth in Q2, as pointed out above, but gross fixed capital formation could increase.

Chart 7
Quarterly economic growth 1998-2003
Volume change over four quarters



Source: Statistics Iceland.

Growing turnover in retail, services, construction and industrial manufacturing

VAT returns for the first four months of this year show significant changes in turnover compared with same period in 2002. Turnover in the retail, wholesale and service sectors grew sharply in real terms and the construction industry experienced a complete turnaround. In real terms, turnover increased over the first four months by 3.5% in the retail sector (-2.4% in 2002), 3.6% in wholesale excluding fuels (-2.4% in 2002) and 11.9% in construction compared with a 17.4% contraction in the first four months of 2002. Manufacturing industry output for the domestic market also picked up after a steady slide since spring 2002.

Domestic demand

Private consumption growth was probably marginally weaker in Q2

The unmistakeable upswing in private consumption in Q1 was consistent with the signs of a recovery that had been discerned in the preceding quarters. Partly, the increase may be attributed to base effect, i.e. reflecting weak private consumption in Q1/2002.

Table 2 Indicators of demand in the first half of 2003

% change from year before unless otherwise stated	*Q1*	*So far in Q2 or year*[1]
Grocery turnover April-June, in real terms	0.9	6.4
Credit card and debit card turnover April-June, in real terms	9.5	4.7
Car registrations April-June, increase in number	56.8	40.8
Cement sales April-June, volume change (tonnes)	19.7	18.5
General imports January-May, volume change	6.4	7.5
Imports of consumer goods January-May, volume change	19.4	13.7
Imports of investment goods excl. vessels and aircraft January-May, volume change	10.7	11.1
Apartments in Greater Reykjavík Area January-May, price change	10.7	11.4
Lending by the Housing Financing Fund (nominal value) January-May	24.1	23.7

1. The right-hand column shows the change between the specified period and one year before.

Sources: Motor Dealers' and Services Federation, Land Registry of Iceland, Statistics Iceland, Housing Financing Fund, Federation of Trade and Services, cement producers, Central Bank of Iceland.

Available demand indicators for Q2 suggest that private consumption growth had slowed down, partly due to a lower base effect. Thus growth in credit card turnover, vehicle registrations and imports of durables appears to have slowed from Q1 to Q2. Growth in credit card turnover, in particular, took a sharp dive in April and May, although it recovered in June.

The drop in the Gallup confidence index in June points in the same direction, although with some degree of uncertainty, after climbing for five consecutive months. Indices of expectations over the coming six months and the assessment of the current situation both fell considerably. The swing in the index is conceivably to some extent connected with the general election in May and growing concern about the negative side-effects of the planned aluminium projects which have featured highly in the post-election debate.

On the other hand, there is strong evidence that demand for housing will keep on growing. Housing price rises have continued to outstrip the increase in the general price level and lending for housing purchases has rarely been higher.

Imports of investment goods indicate underlying investment growth

Only fairly scant indications are currently available about investment developments in the second quarter. However, imports of investment goods, excluding vessels and aircraft, point to underlying investment growth. The contraction in investment in Q1 can be attributed to the aircraft imported in 2002. Without this negative base effect, there would have been an increase, which could be the outcome for Q2 as well if the comparison is not distorted by large irregular transactions. Stepped-up public sector and hydropower construction projects are also felt during the quarter, and the increase in housing loans suggests sizeable growth in residential investment.

Labour and wage market developments

More student registrations explain rise in unemployment

Seasonally adjusted unemployment has been mounting steadily since autumn 2001 apart from the closing months of last year. No end to this trend is yet in sight, although the rate of increase has slowed down. It should be remembered that unemployment is generally a lagged indicator of economic conditions and normally peaks some time after a recovery begins. This June just over 5,300 people were registered as unemployed, equivalent to 3.2% of the estimated labour force. The seasonally adjusted figure was 3.4%, which is similar to May. Registered unemployment was half a percentage point lower in Q2 than according to the Statistics Iceland labour market survey.

Although seasonally adjusted unemployment has not yet begun to drop, the labour force seems reasonably mobile. Employment agencies and welfare benefit committees report that many of those registered as unemployed during the winter have found work. However, a rising number of students registering as unemployed at the end of examinations in May has cancelled out this effect. This is confirmed by the findings of Statistics Iceland's labour market surveys and also explains why unemployment has continued to mount even after the economy has begun to pick up. The Statistics Iceland survey shows a drop in unemployment in Q2 among all age groups except the youngest (16-24 years of age). However, a fairly large and growing proportion of the unemployed have been without work for quite a long time. In June, just under a third had been without work for six months or more, while at the same time last year just over one-fifth had been unemployed for the same length of time. The breakdown of unemployment by labour market segment in June was similar to the same month in 2002.

More jobs ahead in manufacturing, retail and services, but cutbacks in fishing and fish processing

There are various signs that the employment situation will improve in the next few months. The Federation of Icelandic Industries (FII) conducted a survey of companies' recruitment plans for the coming 3-4 months which revealed that more businesses wanted to add staff in June than in January and fewer were planning reductions. The sharpest turnaround was in the retail and services and the manufacturing sectors, where businesses wanted to recruit 0.4% and 0.9% more employees respectively. Fishing and fish processing companies, on the other hand, wanted to reduce their workforce, but on a smaller scale than they had reported in January. Financial companies planned much larger cutbacks than in January, however. Recruitment plans were confined to the Greater Reykjavík Area, where businesses wanted to boost their manpower by an average of 0.8%, while regional companies aimed for a slight reduction. However, another FII survey, conducted in June, showed that medium-size and large industrial manufacturers wanted to scale down their workforce by 0.7% over the period June-September, but construction and earthmoving companies wanted to add 4.7% and 3.9% respectively.

For the past two years unemployment has increased in the autumn when seasonal work and summer vacation relief jobs come to an end. It is uncertain whether this will happen this year, because the FII survey suggests mounting demand this autumn in the Greater Reykjavík Area, where seasonally adjusted unemployment has increased in the spring and summer. Public sector job creation schemes will also begin this autumn, but some of them have been delayed.

An increase in vacancies has been interpreted as one of the first signs of a turnaround in the labour market. Vacancies have increased significantly so far this year. In June there were 546 vacancies with employment agencies, compared with 134 this January and 254 in June last year. More work permits were also issued in the spring after reaching a low in February, but figures for the first six months of this year were one-quarter down from the corresponding period last year. To some extent these changes reflect demand for labour in a fairly limited field. The need for labour in abattoirs in the autumn partly explains the increases both in vacancies and work permits issued in recent months, because these positions are difficult to fill with domestic labour.

Real wages were 3.6% higher in Q2 than a year before

The Statistics Iceland wage index rose by 0.5% between Q1 and Q2 and by 5.6% over the preceding twelve months, implying that real wages increased by 3.6%. Private sector wages rose by 0.4% between the quarters and were 5.5% higher in Q2 than a year before, while estimated negotiated increases over the period were 3.6%. Civil servants' and bank employees' wages went up by 5.9%. Thus real basic wages increased by 3.5% in the private sector and by 3.9% among civil servants and bank employees.

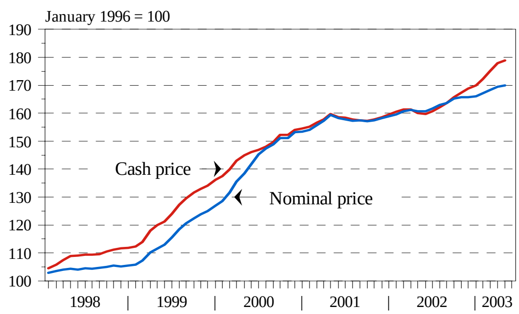
Real estate market

Brisk activity and price rises continue in the housing market

The last *Monetary Bulletin* in May included a fairly detailed discussion of developments in the housing market, which has been characterised by buoyant growth in lending for housing purchases, soaring housing prices and a fall in the discounting rate on housing bonds. Intense activity then was attributed to higher real wages, lower interest rates and a slowdown in the rate of inflation, at the same time as credit supply increased. There are still no signs that the upswing is losing momentum.

Chart 8

Housing prices in the Greater Reykjavík Area January 1998 - April 2003

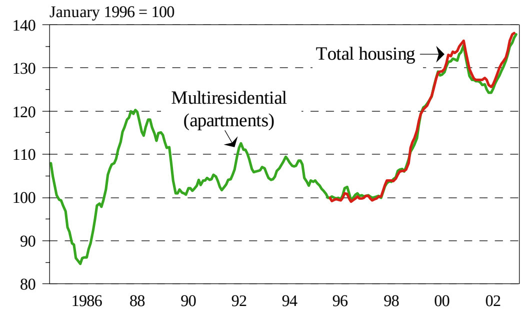


Source: Land Registry of Iceland.

In May the twelve-month increase in prices for multiresidential housing (smaller apartments) in the Greater Reykjavík Area had begun to slow down after peaking at 14% in March. Nonetheless, in recent months real estate price rises have continued to outstrip the general level of prices, which have broadly remained unchanged apart from their housing component. Twelve-month growth of prices of all types of housing in the Greater Reykjavík, however, was still gathering speed in April, when it approached 12%. Since last autumn housing prices have primarily been driven up by a rise in the value of the housing bonds made over from buyers to sellers. Cash prices in housing sales contracts have therefore risen much more than nominal prices, which is normal when the discounting rate on housing bonds changes sharply. A similar disconjunction formed between changes in nominal and cash prices in 1998-1999, when the housing bond discounting rate also dropped, while in 2000 and for most of 2001 cash prices rose more slowly than nominal prices as the discounting rate soared. This trend does not prove that cash prices are a poor measurement of changes in housing prices, contrary to what has been claimed, although it is conceivable that buyers and sellers are not fully aware of these price changes.[2]

Chart 9

Housing prices in the Greater Reykjavík Area in real terms January 1985 - May 2003



Source: Land Registry of Iceland, Central Bank of Iceland.

Housing prices in the Greater Reykjavík Area were 2% higher in real terms in May than at the previous peak in 2001 and there is no sign that the cycle of rises is coming to a halt. Planned changes to the housing loan system and upcoming demand growth could crank prices up even further. This exacerbates the risk of oversupply, which could eventually lead to a sharp price correction. However, it is difficult to assess how far prices now exceed the equilibrium level, or whether the increases reflect to some extent a permanent rise in the price of land in the expanding urban area. Relative changes between rent and real estate prices are sometimes viewed as an indicator of a real estate bubble. No disconjunction can be discerned between them in recent years, although such an indicator may only have limited value in Iceland where the rental market is underdeveloped.

Lending for housing purchases has been strong. Thus the market value of housing loans, which reflects the value of the housing that can be bought with them, was over 20% greater in April-May than a year before. Pension funds have also continued to lend liberally to their members, presumably largely for housing purchases. Twelve-month growth in pension funds' lending to their members amounted to 11.9% at the end of May. Admittedly this represents some slowdown from the second half of 2001, when

2. Lower discounting rates on housing bonds represent cheaper credit which should spur demand for housing and force prices up, other things being equal. Thus it is quite natural for a drop in the discounting rate to be matched by a rise in prices, which above all appears in higher cash prices, and not necessarily in higher nominal prices while the discounting rate is declining.

annualised growth was almost one-third, but in real terms there is less difference.

Financial markets

Faster rate of credit growth

Credit growth has been picking up speed recently. As it happens, data for lending by the total credit system up to the end of March show a relatively slow growth rate of 3.8% over the preceding twelve months, but this gives a rather misleading impression due to the impact of exchange rate changes on the stock of outstanding loans. For example, borrowing from abroad shrank by almost 3% over the period, while lending to households, which is not directly affected by exchange rate movements to any significant degree, grew by 7.7%. Twelve-month lending growth until the end of March, excluding the estimated impact of exchange rate changes, amounted to 6%.

Current data on the development of deposit money bank (DMB) lending in Q2 suggest a sharp rebound in credit growth. A particularly marked surge took place in May. Twelve-month DMB lending growth until the end of June produced the highest figure for more than a year, and excluding the estimated impact of changes in the exchange rate and CPI on the stock of outstanding loans, growth was the highest in May for two years at just under 13%, and only marginally less in June. The largest increase has been in DMB lending to businesses. Conceivably, part of the explanation for credit growth in May lies in leveraged takeovers or pending aluminium and hydropower investments.

Real interest rates rose in June but have settled back

The Central Bank's policy interest rate has been unchanged since February 10. Measured in terms of the four-year inflation premium on non-indexed Treasury notes, real interest rates dropped after the policy rate was lowered in February. They headed up again towards mid-June when the inflation premium went down (see Chart 12) but have settled back down since then and been lying in the range 2.6%-2.8% so far in July. The short-term interest rate differential with abroad has been widening steadily since mid-April when it temporarily dipped below 2%. During the first three weeks of July the differential on three-month Treasury bills averaged around 3%. Lower foreign interest rates explain roughly one-third of the wider differential.

The spread between short and long bonds widened sharply in Q2 when short-term yields dropped

The transmission of Central Bank interest rate changes in recent months has been coloured by large-scale pending industrial investments. From autumn 2002 until this spring, expectations of higher inflation and interest rates prevented non-indexed interest rates from following short-term rates downwards or even caused them to rise over the period. The spread between long and short bonds therefore widened significantly. In Q2 the spread between roughly ten-year and four-year Treasury instruments averaged more than 1%, compared with 0.6% in Q1. The wider spread in Q2 was primarily due to lower yields on short bonds, which went down to 6.1% in the beginning of June. In July the downturn has been reversed, narrowing the spread again. Towards the end of July the yield on four-year Treasury notes was 6.9%.

One reading of the interest rate trend is that the market expects low inflation in the coming term but feels more uncertain about price developments in the longer term. The exchange rate trend and low rate of inflation have influenced this assessment. However, it is not certain that these changes are solely a reflection of inflation expectations, and the rise in interest rates in July may conceivably be explained with profit-taking.

Indexed bond yields go down

The most important interest rates for households are those on indexed loans and bonds. Housing bond yields, which are a major determinant of demand for housing, have dropped since the last *Monetary Bulletin* was published in May. Yields on indexed Treasury bonds broadly decreased by 0.3-0.6 percentage points in the second quarter. This reduction took place despite heavy supply of housing bonds and reflects buoyant demand, some of it from abroad.

Overall financial conditions have tended to ease in recent months

Most indications are that overall financial conditions have tended to ease since the last *Monetary Bulletin* was published in May, notwithstanding some volatility. Nominal rates have gone down, major real interest rates have remained virtually unchanged or decreased (despite a temporary rise) and credit growth has been gaining pace. In addition, foreign interest rates have fallen even further. Since a large proportion of Icelandic corporate debt is in the form of foreign loans or loans linked to foreign exchange rates and index rates, the global interest rate trend is also a major factor at work. Interest rates on US ten-year constant maturities were only around 3½% at the end of June and three-month US Treasury bill rates were below 1%. In most countries, short-term rates are at their lowest for decades and in some cases have not been lower since the nineteenth century. Icelandic financial institutions have taken advantage of this position by increasing their foreign short-term exposures.

II Macroeconomic and inflation forecasts

Minor changes have been made to the assumptions behind the macroeconomic and inflation forecasts since May. As usual an unchanged monetary stance and exchange rate are assumed throughout the forecast period. The assumptions include investments in connection with the Fjarðaál (Alcoa) smelter in East Iceland and the expansion of the Norðurál aluminium smelter, even though the latter is highly uncertain. If it does not go ahead, output growth could end up ½% lower than forecast this year and ¾% lower next year. The slack in the economy would then be correspondingly larger than in the following forecast.

Slightly higher output growth is expected this year and in 2004 than in the previous forecast. The output gap has also been revised and a slight slack is now assumed for 2002 and 2003, but in 2004 output growth will exceed estimated growth of potential output. Given the assumption of greater slack in the goods and labour markets, the Bank forecasts a lower rate of inflation than previously expected. However, two years ahead the inflation rate is forecast above the inflation target. The risk scenario is still assumed to be biased downwards one-year ahead, but two years ahead it is assumed symmetric instead of upward in the last forecast.

Demand and output

Assumptions in the macroeconomic forecast and inflation forecast

The macroeconomic and inflation forecasts assume an exchange rate index of 124 throughout the forecasting period, whereas the forecast in May assumed an exchange rate index of 120. The króna is therefore assumed to be more than 3% weaker over the period than was assumed in the last forecast. Another assumption is that the fiscal stance will be relatively neutral, apart from a considerable increase in public sector investment this year and a contraction next year. This implies that the Treasury balance will not be disrupted by changes on the expenditure and revenue side. However, automatic stabilisers, reflecting business cycle-driven adjustments to Treasury expenditures and revenues, are allowed to work. Growth in public consumption is assumed to be below the historical average.

With a change in the assumptions for the development of external conditions this year and in 2004, a larger decrease is expected in prices of marine products this year than in the previous forecast. Prices of marine products are now expected to fall by 4% instead of 2% and to remain unchanged between 2003 and 2004 rather than rising by 2%. Exports of marine products are expected to grow by 3% this year due to increased quotas for the coming fishing year (from September 1) and a larger blue whiting harvest this summer. The assumed increase in catch volume for 2004 is unchanged at 5%. Aluminium prices are expected to rise by 4% this year, instead of falling by 1% as assumed in the previous forecast. These premises are based as before on futures prices and the pricing assumptions of the two aluminium companies, Norðurál and Alcan Iceland.

Import prices in foreign currency are expected to remain unchanged from the May forecast. Fuel prices are based on futures. These have been on an upward trend in recent weeks and are now expected to rise by 9% this year but fall by 14% in 2004 (both figures in foreign currency terms). This represents a sizeable increase from the 3% rise previously assumed this year, but the forecast for 2004 remains unchanged. A slightly more favourable development in terms of trade for goods and services is assumed this year than in the previous forecast, but in effect

Table 3 Assumptions of the macroeconomic forecast

	Current forecast[1]			Change from previous forecast[1]		
Policy rate and exchange rate[2]	*2002*	*2003*	*2004*	*2002*	*2003*	*2004*
Central Bank policy interest rate	8.2	5.3	5.3	-	-	-
Foreign exchange index	131.4	123.0	124.0	-	2.0	3.3
External conditions (% change from a year before, except for interest rates)						
Marine production for export	4¼	3	5	-	3	-
Prices of marine products	3¼	-4	-	-	-2	-2
Aluminium prices	-6½	4	2½	-	5	3½
General import prices	-½	-½	½	-	-	-
Fuel prices	2	9	-14	-	6	-
Prices of exported goods and services	-1¾	-7¾	¾	-	-¼	-¼
Terms of trade for goods and services	1	-1¼	¼	-¼	¼	-½
Foreign short-term interest rates (%)	2¾	3	3½	-	-	-

1. '-' indicates no change. 2. Annual averages. Assuming unchanged interest rates and exchange rate from the day of forecast (daily data).

this only involves a redistribution from 2002. In 2004 the terms of trade are expected to improve by half a percentage point less from this year than was assumed in the previous forecast.

Assumptions for foreign interest rate developments are unchanged from the Bank's last forecast, with short-term rates of 3% this year and 3½% next year.

Slight increase in output growth from the previous forecast ...

The Central Bank is now forecasting 2¾% output growth this year and 3½% in 2004, in both cases a quarter of a percentage point higher than previously forecast. The forecast for private consumption growth has been raised to 2% this year but is unchanged at 3% next year. A slight increase in public consumption is expected this year compared with the previous forecast. Gross fixed capital formation, however, is expected to grow by 10¾%, which is less than forecast in May. Forecast investment in residential housing is unchanged. Exports will increase by 2% this year and 4% next year, according to the forecast, due to increased fishing quotas, as pointed out above. Growth of imports is expected to remain unchanged in 2004, but will increase slightly this year.

... but slack in the labour market will increase

Despite higher forecast output growth this year, unemployment is expected to be a quarter of a percentage point higher than was forecast in May. Furthermore, the forecast for productivity growth between 2002 and 2003 has been raised by half a percentage point to 2%. Greater slack is forecast this year in the labour market. The forecast for next year remains unchanged, however, and the expected growth in unit labour costs will be well compatible with the 2½% inflation target.

Increasing slack foreseen in the goods market, despite greater output growth

Although higher output growth is expected this year and next year, the output gap is forecast to become slightly negative, indicating more slack than before. The reason is that potential output is expected to grow faster than was assumed in May. Last year's output gap estimate has been revised to a slightly negative gap instead of a positive gap of ½% and it will widen even further in 2003 since output growth is below estimated growth of potential output. Output gap is expected to turn marginally positive next year when output growth will exceed potential, but the gap will be slightly smaller than in the previous forecast. However, it is important to bear in mind that the evaluation of the output gap is highly uncer-

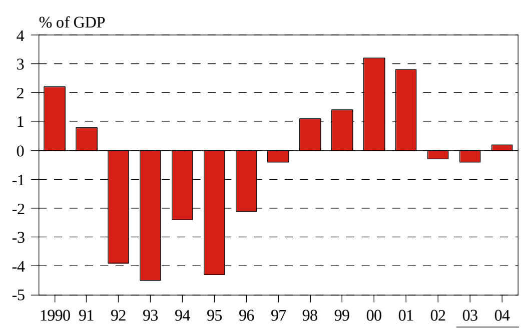
Table 4 The Central Bank of Iceland macroeconomic forecast

	Billion krónur at current prices			*Volume change on previous year (%)*[1]			*Change since previous forecast*[1]		
	2002	*2003*	*2004*	*2002*	*2003*	*2004*	*2002*	*2003*	*2004*
Private consumption	419.5	436.0	457.7	-1¼	2	3	-	1	-
Public consumption	194.7	206.5	221.9	3	2½	2½	-	½	-
Gross fixed capital formation	146.5	167.4	191.2	-12¾	10¾	11¼	-	-¾	½
Industries	79.4	93.6	116.5	-19½	14	20¾	-	-½	1
Excl. power-intensive projects, ships and aircraft	64.5	65.2	73.1	-9	-2	9¼	-	-	-¼
Residential housing	37.4	39.8	42.2	5¼	3	3½	-	-	-
Public investment	29.7	34.1	32.5	-8¼	11¼	-7	-	-2¾	-
National expenditure	760.6	809.9	870.7	-2½	3¾	4¾	-	¼	¼
Exports of goods and services	307.3	289.5	303.6	3	2	4	-	¾	¼
Imports of goods and services	293.5	285.1	304.8	-2½	4½	7	-	½	-
Gross domestic product	774.4	814.4	869.5	-½	2¾	3½	-	¼	¼
Current account balance, % of GDP	.	.	.	½	-1¼	-2½	¼	-¼	-¼
Gross national saving, % of GDP	.	.	.	18¾	18¼	18	-	-1	-1½
Net external debt, % of GDP	.	.	.	100½	94¼	94	.	.	.
International investment position, % of GDP	.	.	.	-78¼	-73	-73	.	.	.
Private sector wages, % change between annual averages	.	.	.	5¾	5	4¼	-	-	-
Labour productivity, % change between annual averages	.	.	.	1	2	1½	-	½	-
Real household disposable income per capita, % change between annual averages	.	.	.	1	2¼	3½	-	-	1¼
Unemployment, % of labour force	.	.	.	2½	3¼	2½	-	¼	-
Output gap, % of GDP	.	.	.	-¼	-½	¼	-¾	-½	-¼

1. '-' indicates no change.

Chart 10

The output gap 1990-2004



Source: Central Bank of Iceland.

tain, due to the non-observable nature of potential output.

The forecast therefore assumes little inflationary pressure from the demand side over the forecasting period. Looking further ahead, however, inflationary pressures will gradually mount as aluminium-related investments approach, all things being equal.

The inflation outlook

Minor changes in assumptions from previous forecast

According to the above, there is little change in the assumptions since May. Slightly higher productivity is forecast this year, and there will probably be a little higher unemployment than had been foreseen. The output gap forecast has also been revised downwards for the entire forecast period, as mentioned above. Other things being equal, these factors should contribute to a lower rate of inflation during the forecast period than was previously assumed. On the other hand, the exchange rate of the króna is expected to be weaker over the forecast period. As before, the forecast assumes moderate increases in wage renegotiations next year.

Inflation one year ahead will be lower than previously forecast, but two years ahead it will remain above target

The new forecast assumes a slightly lower inflation rate until mid-2005 than was expected in May and only 1½% in the first half of next year. One year ahead, the forecast is for an inflation rate of 1.6%, instead of 1.8% before.

However, inflation is still expected to accelerate gradually in the course of 2004, and to exceed the inflation target in Q1/2005 and reach 2.8% two years ahead, instead of 2.6% in the previous forecast (or 2.7% relative to the same quarter, i.e. Q2/2005). Subsequently, inflation will continue to gain pace if the forecast assumptions hold, including an unchanged monetary stance.

Uncertainty one year ahead is hardly changed from the last forecast ...

As in the previous forecast, the main uncertainties in the short run are thought to be exchange rate developments, the Norðurál smelter expansion and imported inflation. A delay in construction work for Norðurál could reduce domestic demand and thereby dampen domestic inflationary pressures. Offsetting this, the króna could also probably be weakened by a partial reversal of expectations about currency inflows for these investments, which had previously caused it to appreciate. Such a development would amplify short-term inflationary pressure. Moreover, uncertainty and pessimism about the global economic outlook are apparently far from being dispelled, and little change is assumed in uncertainties connected with imported inflation, compared with the previous forecast.

... but the upside risk two years ahead has declined

Two-years ahead, however, it is considered less likely than in May that inflation will exceed the forecast, due to decreased upward risk bias and increased downward risk bias.

Judging from recent declarations by the Government, a tight fiscal stance is more likely than was foreseen in May. This is based on a growing awareness that monetary policy would be overstretched by counteracting the effect of aluminium-

Table 5 Central Bank inflation forecast

Quarterly changes (%)

	Percentage change on previous quarter	*Annualised quarterly change*	*Change on same quarter of previous year*
2001:1	0.8	3.4	4.0
2001:2	3.5	14.5	6.0
2001:3	2.3	9.7	8.0
2001:4	1.6	6.6	8.5
2002:1	1.0	4.2	8.7
2002:2	0.4	1.6	5.5
2002:3	0.2	0.7	3.3
2002:4	0.6	2.3	2.2
2003:1	0.7	2.9	1.9
2003:2	0.5	2.0	2.0
2003:3	0.2	1.0	2.0
2003:4	0.4	1.5	1.8
2004:1	0.4	1.5	1.5
2004:2	0.6	2.5	1.6
2004:3	0.7	3.0	2.1
2004:4	0.5	2.1	2.3
2005:1	0.6	2.3	2.5
2005:2	0.9	3.7	2.8
2005:3	0.9	3.8	3.0

Figures indicate changes between quarterly averages of the consumer price index. Shaded area indicates forecast.

Annual changes (%)

Year	*Year-on-year*	*Within year*
2000	5.0	3.5
2001	6.7	9.4
2002	4.8	1.4
2003	1.9	1.7
2004	1.9	2.3

Shaded area indicates forecast.

related investments, with adverse consequences for exchange rate developments and the profitability of export and import-competing industries. This autumn's draft Budget will clarify how tight a fiscal stance can be expected.

Uncertainty continues to cloud long-term exchange rate developments in connection with both the aluminium industry investments and ongoing weaknesses in the global economy, as discussed in the last *Monetary Bulletin*. In addition, a contraction in the activities of the US military in Iceland could compound the downturn in domestic demand. However, its short-term effects on inflation are uncertain, since it would probably be accompanied by some weakening of the króna, which would temporarily increase inflationary pressures and offset the impact of the negative demand shock. Furthermore, the scale of the shock is unclear since it is not known how much the military activities would be cut back, nor over how long a period.

Other uncertainties are linked to ideas for changing the housing loan system, along with the demand shocks and higher housing prices that such reforms would probably spur. Furthermore, there is some uncertainty about housing price developments in the near future, which appears to be symmetric. It has also been reported that skilled labour for pending aluminium industry and hydropower investments could become scarce if it proves difficult to bring in such workers from abroad. A shortage of this kind could prompt contagious wage rises in the labour market, fuelling additional inflationary pressures in the second half of the forecast period.

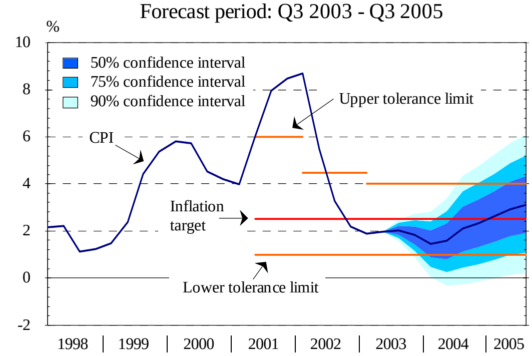
The risk spectrum is therefore negative in the short-term but symmetrical over the longer term

On balance, the Bank still judges the risk to inflation one year ahead to be on the downside. In light of the revised risk spectrum two years ahead, the longer-term inflation risk is now assumed to be symmetric, instead of on the upside as was judged in the previous forecast.

As in the Central Bank's recent forecasts, estimates of forecast uncertainty based on historical forecast errors are thought likely to exaggerate to some extent the uncertainties that lie ahead, since they tend to be unduly influenced by the recent period of high and variable inflation. Chart 11 presents the Bank's main forecast for the next two years together with an assessment of the uncertainty surrounding the inflation prospects. Thus the entire 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 the longer the horizon of the forecast, as reflected in the widening of the confidence intervals.[3]

Chart 11 Central Bank inflation forecast

Forecast period: Q3 2003 - Q3 2005



Source: Central Bank of Iceland.

Table 6 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%*	*above 4%*
2003:3	< 1	96	96	4	< 1
2004:2	32	49	81	18	1
2005:2	12	27	39	34	27

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

The uncertainty assessment shows a greater probability that inflation one year ahead will be below the inflation target, compared with the last forecast. Two years ahead, on the other hand, the probability has diminished. Inflation is also less likely to remain

3. The range for which the Bank has not previously forecast is based on a simple extrapolation. Just as forecasts for individual values are subject to uncertainty, so is the method of estimating the uncertainty of forecasts. The estimated forecast uncertainty should therefore be interpreted with caution. The aim is to highlight the inherent uncertainty of the forecast rather than to provide a precise assessment of the probability distribution of forecast inflation.

Box 2 Financial market analysts' assessments of the economic outlook

The accompanying table shows the forecasts made in July by a number of financial market analysts. It should be pointed out that the merger of Kaupþing and Búnaðarbanki has reduced the number of forecasters to five from six.

Presented first is the analysts' evaluation of the inflation outlook for this year and 2004. The forecast for inflation over 2003 is lower than in the last survey, which was made in April, but on average in line with their forecasts in January and below the Central Bank's inflation target. The Central Bank's inflation forecast for the same period is somewhat lower, or 1.7%, which is marginally less than its projection published in *Monetary Bulletin* in May this year. Analysts forecast average year-on-year inflation of 2.1% between 2002 and 2003 but the Bank slightly less. The Bank also forecasts lower year-on-year inflation between 2003 and 2004, at 1.9%, compared with just over 2½% by the analysts.

As usual, analysts were also asked about the outlook for other key economic aggregates. Their growth forecasts are broadly in line with that of the Bank, which expects ¼% more growth for both 2003 and 2004.

On average, the respondents expect little change in the exchange rate of the króna for the next two years. However, they apparently assume that the króna will strengthen rather more in the long term than in their previous forecasts. The considerable discrepancy between the highest and lowest values should be pointed out. Analysts forecast an exchange rate index value in the range 115 to 125 two years ahead. As in their January and April forecasts, they consider that the lowering of Central Bank interest rates has come to an end. They forecast that the policy interest rate will be 6.3% a year ahead and 7.1% after two years.

Analysts expect a similar equity market price trend to the last survey. Expectations vary widely, however, as indicated by the wide range between the highest and lowest values. Views on the outlook for housing prices also differ, but they forecast rather larger increases than they expected in both January and April, undoubtedly bearing in mind price developments in recent months.

Overview of forecasts by financial market analysts[1]

	2003			*2004*		
	Average	*Highest*	*Lowest*	*Average*	*Highest*	*Lowest*
Inflation (within year)	2.3	2.7	2.0	2.7	3.1	2.0
Inflation (year-on-year)	2.1	2.3	2.0	2.6	2.9	2.0
GDP growth	2.4	2.6	2.0	3.3	3.7	3.0
	One year ahead			*Two years ahead*		
The effective exchange rate index of foreign currencies vis-à-vis króna (Dec. 31, 1991=100)	121.3	123.5	120.0	119.7	125.0	115.0
Central Bank policy interest rate	6.3	6.8	5.8	7.1	7.4	6.8
Nominal long-term interest rate[2]	6.9	7.5	6.4	7.3	7.8	6.6
Real long-term interest rate[3]	4.3	4.8	4.0	4.4	5.1	3.8
ICEX-15 share price index (12-month change)	6.1	7.0	4.5	11.4	20.0	5.0
Housing prices (12-month change)	6.4	10.0	3.0	6.8	12.0	3.0

1. The table shows percentage changes, except for interest rates (percentages) and the exchange rate index for foreign currencies (index points). Participants in the survey were the research departments of Economic Consulting and Forecasting, Íslandsbanki, Kaupþing Búnaðarbanki, Landsbanki and SPRON (Reykjavík and Environs Savings Bank). 2. Based on yield in market makers' bids on non-indexed T-notes (RIKB 07 0209). 3. Based on yield in market makers' bids on indexed housing bonds (IBH 41 0315). *Source*: Central Bank of Iceland.

within the tolerance band of the target one year hence, but the assessment is virtually unchanged on a two-year projection. The probability of deflation, using the quarterly values on which the forecast is based, peaks one year ahead at just below 10%.

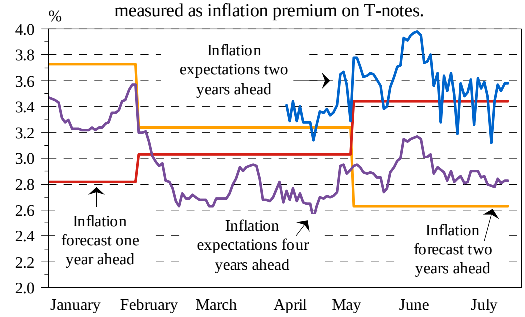
III Monetary policy

Business and household financial conditions have on the whole tended to move in the direction of easing since the last *Monetary Bulletin* was published in May. Bond rates have fallen and the króna has depreciated. However, the monetary policy stance, as reflected in the Central Bank's policy rate in real terms, has changed little and the interest rate differential with abroad has widened, in part due to lower international interest rates. It should nonetheless be borne in mind that there is no unequivocal measure of the policy rate in real terms, which depends on the criteria used to measure inflation expectations, cf. Chart 12.

Chart 12

Policy interest rate in real terms in 2003

Measured against different deflators. Expectations measured as inflation premium on T-notes.



Source: Central Bank of Iceland.

The premises for the last interest rate decision are broadly unchanged

The Central Bank last changed its policy rate on February 10, lowering it by 0.5 percentage points to 5.3%, where it has remained since. This decision was based on a forecast for 2% inflation two years ahead, i.e. until Q4/2004. Both that forecast and the one presented in this *Monetary Bulletin* were conditional on the same exchange rate index value of 124. However, somewhat less output growth this year and in 2004 was assumed in the earlier forecast, and slightly higher unemployment.[4] The excess capacity in 2002 and this year has now been revised upwards, cf. the above macroeconomic and inflation forecasts. As a result of this and other changes in assumptions, inflation is now forecast at 2.3% in Q4/2004, i.e. very close to the target and closer than was assumed in February. This reinforces the view that the premises for the interest rate decision in February were broadly speaking correct and have not changed. However, inflation is now predicted to exceed the target marginally on a two-year projection, i.e. until Q2/2005, when a fairly strong impact from aluminium-related investments will start to be felt in the goods and labour markets.

Monetary policy is complicated by inflation being very low in the near future but above the target in the longer run

Twelve-month inflation until July measured only 1.6%, which is some way below the target. Part of the explanation lies in unusually early retail clearance sales, without which the rate would have been 1.9%. Measures of core inflation are, however, closer to the inflation target. According to the forecast presented above, inflation will be around or below 2% until the second half of next year, then gradually trend upwards towards the target. Furthermore, in the Bank's view the risk spectrum is negative rather than positive one year ahead, for reasons including sluggish growth and very low inflation among many trading partner countries. Thus inflation in the near future could conceivably be even lower than assumed in the forecast, and there is a 10% probability of temporary deflation in Iceland during the first months of next year. The likelihood of a true deflationary episode is small, although it cannot be ruled out completely. This is discussed in more detail in Appendix 1, which uses a methodology devised by the IMF to evaluate deflation vulnerability and compares Iceland with the countries covered in a recent report from the Fund. Iceland is ranked on this index among the countries where the risk of deflation is considered low to min-

4. In comparing the current growth and inflation forecasts with those from February it should be borne in mind that the February forecasts were based on a higher Central Bank policy rate, i.e. 5.8% instead of 5.3% now.

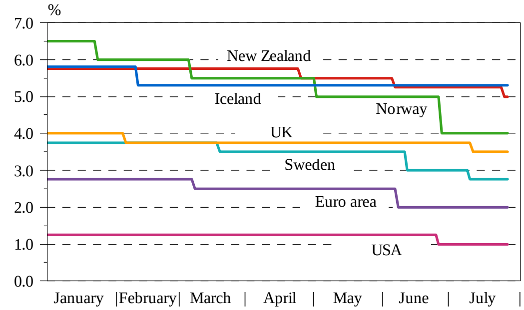
imal. Besides a number of reservations that need to be made about such a measurement, it should be kept in mind that these measures fail to take into account the pending surge in demand in Iceland in the next few years which substantiality reduces its deflation vulnerability. In all likelihood, the risk of deflation in Iceland is therefore even less than its vulnerability index score would suggest.

Given all this, it can be argued that the Central Bank policy rate should not be raised at present, even though the inflation forecast two years ahead is slightly above the target. Admittedly the main rule of thumb in inflation targeting is to change interest rates in pace with the inflation forecast two years ahead and take less account of shorter-term outlook due to the lag in transmission of policy rate changes to inflation. However, the risk spectrum and initial position also need to be borne in mind. While there is generally considered to be fairly little risk of deflation in countries like the USA, the current low rate of inflation creates scope for insuring against that risk by keeping interest rates rather lower than the most probable forecast warrants. In a sense the same applies in Iceland, even though pending investments in the aluminium and hydropower sectors leave it less vulnerable to deflation than the USA.

Explaining the formulation of monetary policy is complicated by the current low rate of inflation, which could even fall further in the near future. The fact that a lower inflation rate and expectations imply higher real interest rates than otherwise could appear to justify a cut in the policy rate. Notwithstanding that monetary policy should always be forward-looking, recent developments must weigh heavily in assessments of future prospects when there is a high level of uncertainty. Future gains are certain in the form of higher fishing quotas and the aluminium-related investments in East Iceland, and monetary policy at the moment reflects this scenario. Unforeseen domestic demand and inflation shocks could easily occur, of course, but monetary policy cannot respond to such events until they have materialised. It should be pointed out that when inflation soared above the tolerance limit in 2001, short-term interest rates did not follow completely. A case can be argued for a comparable response now that inflation could temporarily fall some way below the target and even close to the lower tolerance limit.

Chart 13

Central Bank policy rates in selected countries
January 1 - July 25 2003



Source: EcoWin.

It may be asked whether an inflation rate which has been well below target for more than a year suggests that the monetary policy stance was overly tight last year. An important factor in this context is that one main reason for the current low inflation rate is the appreciation of the króna that took place towards the end of 2002 and for much of this year, which is partly explained by expectations about aluminium industry investments. This appreciation was not assumed when interest rate decisions were made last year. In addition, global inflation is lower than was generally expected. However, this position means that the weakening of the króna since May lies well within the inflation target framework and a further deprecation could even be accommodated without jeopardising the inflation target.

It is important to realise that although monetary policy is obliged to aim as closely as possible for 2½% inflation in the future, it will never actually achieve this goal completely. Inflation forecasts, for example, are generally based on specific assumptions about global inflation and the exchange rate of the króna. These are prone to large and sudden fluctuations during the forecasting period, when it is generally too late and not even appropriate to fine-tune the inflation rate with excessively volatile interest rates. Indeed, the guiding principle behind forward-looking monetary policy is to give more weight to long-term than to short-term considerations.

Impact of international policy rate cuts

Since the publication of the last *Monetary Bulletin* in May, central bank policy rates have been cut in many inflation-targeting countries as well as the USA and euro area. Thus Norway's Norges Bank lowered its policy rate by one percentage point towards the end of June and rates were cut by 0.25 percentage points in Sweden, the UK and Canada in July. Among many of Iceland's trading partner countries, policy rate cuts are generally a consequence of lower-than-expected output growth and very low inflation. As a result, the policy rate is relatively higher in Iceland and the interest rate differential with abroad has widened. However, a policy rate on Iceland's range is by no means unheard-of in other inflation-targeting countries. Thus New Zealand's official cash rate and Poland's open market rate were 5¼% until July 24, which is similar to Iceland, while rates were much higher in inflation-targeting countries where inflation is currently higher, such as Brazil, Israel and South Africa.

International interest rate cuts do not prompt changes in Iceland except insofar as they alter the inflation outlook. Two factors operate there in opposite directions. On the one hand, the interest rate differential widens, which other things being equal temporarily contributes to a stronger króna and lower rate of inflation. On the other hand, it reduces financing costs of domestic agents who have access to funding from abroad, thereby spurring activity and eventually forcing up inflation. After Iceland moved on to an inflation target and floating exchange rate, there is no longer any automatic link between its interest rate changes and those in trading partner countries.

Greater understanding of the cause of the stronger exchange rate and the economic policy challenge posed by aluminium industry investments[5]

Although the króna has weakened from its peak in May, it is still some way above the exchange rate that prevailed from spring 2002 until the end of October that year. The level then was considered close to what was widely assumed to be the equilibrium exchange rate and was acceptable for export and import-competing industries. Initially an excessively tight monetary stance was widely blamed for the appreciation of the króna that began in the closing weeks of 2002 and continued almost without respite until May this year. However, that explanation did not hold, because all the Central Bank's changes in its monetary policy in recent months have been to ease it, which other things being equal serves to weaken the exchange rate. Thus interest rates were cut, the banks' minimum reserve requirement was lowered and the Central Bank substantially stepped up its purchases of foreign currency in regular transactions in the interbank foreign exchange market.

On closer scrutiny it seems that the appreciation can be attributed to three closely related factors, namely greater confidence in economic growth and stability, expectations in connection with the aluminium industry investments, and exposures taken by international investors in Iceland's foreign exchange market. Decisions on aluminium industry investments play a key role here since they improved the economic outlook, bolstered the exchange rate and made the króna more attractive for position-taking by foreign investors. Although the appreciation is obviously unfortunate for current export and import-competing industries, together with the current low inflation and excess capacity in the economy it has paved the way for the aluminium industry investments without stretching the economy's resources as drastically as had been foreseen, so that the expected future interest rate rises will be smaller than otherwise.

Construction work for the aluminium industry will raise the real exchange rate by spurring demand for several years, which will push up prices and wages relative to trading partner countries. Monetary policy cannot alter this except in the short run since its impact on aggregates such as output growth and real exchange rate rarely lasts for more than 1-2 years, after which it mainly only affects inflation and the nominal exchange rate. This development will disrupt existing export and import-competing industries and could mean that they will take some time to recover when the construction phase is over and the real exchange rate settles back to a lower level. Thus

5. The strengthening of the exchange rate and economic policy challenges are discussed in more detail in a speech given by Már Gudmundsson, Chief Economist of the Central Bank of Iceland, at a meeting organised by the Icelandic Federation of Industry on June 24 this year, which is published in this *Monetary Bulletin* and on the Bank's website.

it is important to find ways to dampen the rise in the real exchange rate without jeopardising the inflation target. It is now generally acknowledged that this will mainly involve a tight fiscal stance, a restrictive public sector investment policy while aluminium industry facilities are being developed, and stepped-up import of foreign labour, especially in areas where bottlenecks are likely to form during the construction phase. If no such measures are taken, monetary policy will come under more strain with a corresponding rise in interest rates and the exchange rate. This means that export and import-competing industries would bear more of the brunt of measures to counteract the aluminium industry investments than consumption, domestic industries and the public sector. It is important to avoid such a development.

Fiscal and housing loan policies will have a significant effect on monetary policy

In light of the above, an adequately tight fiscal stance over the next few years is vital. One assumption in the Bank's forecast presented above is that growth of public consumption this year and in 2004 will be below the historical average. It also assumes that the substantial step-up in public sector investment this year, including job creation schemes by expediting construction projects, will contract sharply again next year. In fact, this year's increase in public sector investment has been revised downwards since the last forecast, based on current levels and the Bank's view that the scope of these projects could create bottlenecks in precisely the segments of the labour market which will come under strain from aluminium industry investments, such as skilled earthmoving workers. No changes are assumed on the revenue side that could disrupt the Treasury balance. For the public sector as a whole, i.e. central and local government, revenues as a percentage of GDP and the overall balance are expected to remain relatively stable.

If this does not hold and the Treasury balance is upset by discretionary measures on the revenue or expenditure side, the current forecasts will have to be revised accordingly and the monetary policy response will be different from the most likely stance at present. Interest rates would need to rise earlier and by more than otherwise, which would be highly unsuitable in the present situation by contributing to a higher exchange rate and thereby squeezing export and import-competing industries even further. On a longer-term view, the Government needs to present a plan looking several years ahead for measures to counteract the impact of the aluminium industry investments. Importantly, the Ministry of Finance has announced that it is working on such a plan which will presumably be presented this autumn at the latest, alongside the Budget. The contents and credibility of this plan will be a major determinant of the timing and scale of interest rate increases in Iceland in the medium term. The stronger counteraction that central and local government can provide to the aluminium industry investments, the less interest rates will need to rise. In this context, it is important to avoid tax cuts in the next few years unless they are fully offset by cuts in government spending or rises in other taxation.

In its policy statement this spring, the new Government announced that the mortgage ceiling of the Housing Financing Fund for ordinary housing will be raised in stages during its term of office to as much as 90% of the value of the property. At present it is not known how this policy will be implemented. However, it is crucial to bear in mind that, in the current circumstances, changes of this kind can have a similar effect on the exchange rate and monetary policy to an easing of the fiscal stance, especially if the maximum loan amount is raised substantially alongside the higher mortgage ratio, as has been suggested. This could pose a risk of stimulating household demand for both housing and private consumption, thereby fuelling inflation. Monetary policy would then need to respond with higher interest rates than otherwise, causing the exchange rate to appreciate. In the present scenario it would not improve the situation if non-residents were to finance housing transactions indirectly by stepping up their purchases of housing bonds, although this would admittedly keep bond market interest rates from rising as a result of these changes. Unless foreign bond investments were fully hedged against exchange rate changes, the króna would strengthen even further, which would be unfortunate in the current circumstances. An additional risk would be that foreign investors might divest housing bonds from their portfolios if they were prompted to reappraise the investment risk in Iceland following a temporary economic contraction when construction projects for the aluminium industry come to an end. Insofar as their investments are unhedged against foreign exchange risk, this would amplify the downward pressure on the króna which might be present then in the downturn at the end of the aluminium industry investments, and force up interest rates in direct contradiction to the movement of the business cycle. Such a development could conceivably also create financial instability in addition to the problems of demand management. Thus it is crucial to make an in-depth examination of the macroeconomic impact of these plans before they are launched.

No grounds for altering interest rates

The overall conclusion from the inflation forecast and analysis presented above is that there are no grounds for altering interest rates at the moment. The most likely outlook, presented in the last edition of *Monetary Bulletin* in May, is still that interest rates will remain unchanged for the time being, then rise as the peak of aluminium-related investments approaches. However, the point at which it may be necessary to raise interest rates could be further away than was foreseen then, due to very low inflation recently for reasons including low global inflation, and because of greater estimated slack in the economy. As always, the outcome will depend on future developments and in particular on the fiscal and housing finance policies to be announced in the near future. In light of the present low rate of inflation, however, it cannot be ruled out that negative shocks to domestic demand and to imported inflation might call for a temporary reduction in interest rates from their present level. This could occur, for example, if proposed investments in connection with the Norðurál smelter expansion do not go ahead, if domestic demand driven from other sources than aluminium industry investments turns out much weaker than is currently expected, or if deflationary pressures continue to build up in the global economy. Although not the most likely scenario at present, such an outcome cannot be ruled out. Given the assumptions on which the inflation forecast is based, interest rates will remain unchanged in the near future. Monetary policy will be reassessed no later than when the fiscal and/or housing finance policies are made public.

Appendix 1 Index of deflation vulnerability

In recent years, economists have been increasingly focusing on deflation[1] and the consequent risk it could pose of a general economic contraction. Some regard deflation as the main cause of the persistent recent economic difficulties in Japan, where along with other parts of Asia there has been considerable downward pressure on prices. Various signs of a trend in the same direction are also being discerned in some Western countries. Massive declines in equity markets, significant excess capacity and widening output gaps and a disappointing pace of economic recovery are all causes of concern about price developments ahead.

This spring the IMF published a report on global deflation today.[2] The study attempts to evaluate the causes and consequences of deflation, the conjunctural risks in individual economies and the best policy options if danger signs emerge in them.

Three complementary approaches were used in the framework for assessing deflation risks. Firstly, it computed an index of deflation vulnerability based on a set of indicators for each of thirty-five economies included in the survey – accounting for over 90 percent of global GDP. Secondly, an expectations-augmented Phillips curve provided an estimate of the size of the deflationary shock (increase in output gap and unemployment gap) that would be required for the onset of deflation in the G-7 countries.[3] Thirdly, a case study examined China's role in transmitting deflationary impulse.

The index of deflation vulnerability reflected developments in aggregate prices, output, credit and monetary aggregates and the equity markets, on the basis of specific assumptions which were regarded as indicators of a general economic contraction. A total of 11 measurements were compiled, using binary indicators with a value of 1 reflecting possible deflationary pressure from that source, but otherwise a value of 0. The following factors were measured:

1. Whether annual inflation, measured as a change in the CPI, was less than 0.5%.
2. Whether annual inflation, measured as a change in the GDP deflator, was less than 0.5%.
3. Whether annual inflation, measured as a change in the core CPI, was less than 0.5%.
4. Whether the output gap had widened by more than 2 percentage points over the past 4 quarters.
5. Whether the current output gap was more than -2%.
6. Whether real GDP growth over the past three years was less than the annual average growth over the preceding decade.
7. Whether the broad measure of the stock market over the past three years had fallen by more than 30%.
8. Whether the real effective exchange rate had appreciated by more than 4% over the past four quarters.
9. Whether private, nominal credit growth was less than nominal GDP growth over the past four quarters.
10. Whether cumulative private, nominal credit growth over the past three years was less than 10%.
11. Whether broad money (M3) growth on a y/y basis grew slower than base money by two percentage points (or less) over the past eight quarters.

Scores were aggregated and renormalised to one to yield the index value for each country.[4] Two sets of indices were computed: one in which all 11 values had an equal weight, and another in which the financial and credit indicators were weighted according to their relative importance in the economy.

Iceland was not included in the 35 countries covered by the IMF study. However, the Central Bank of Iceland's Economics Department has calculated an

1. Deflation is defined as a persistent decline in the general level of prices, i.e. the opposite of inflation, which is defined as a persistent rise in the general level of prices. The concept is explained in more detail in Box 3 on p. 27 in *Monetary Bulletin* 2003/1.

2. "Deflation: Determinants, Risks, and Policy Options – Findings of an Interdepartmental Task Force" – http://www.imf.org/external/pubs/ft/def/2003/eng/043003.htm

3. i.e. Canada, France, Germany Italy, Japan, the UK and the USA.

4. For example, a country for which all the measurements were defined as reflecting deflation would have an index value of 11/11 = 1, etc.

Index of Deflation Risk (Equal Weight)

Risk/	*Minimal*	*Low*	*Moderate*	*High*
Index	*< 0.2*	*$0.2 \le x \le 0.3$*	*$0.3 \le x \le 0.5$*	*> 0.5*
	Australia	Austria	Belgium	Hong Kong SAR
	Canada	Brazil	Finland	Japan
	Chile	China	Germany	Taiwan Province of China
	Denmark	Iceland	Norway	
	France	India	Poland	
	Greece	Italy	Portugal	
	Ireland	Korea	Singapore	
	New Zealand	Malaysia	Sweden	
	Russia	Mexico	Switzerland	
	Spain	Netherlands	Thailand	
	United Kingdom	South Africa		
	United States			

Index of Deflation Risk (Weighted)

Risk/	*Minimal*	*Low*	*Moderate*	*High*
Index	*< 0.2*	*$0.2 \le x \le 0.3$*	*$0.3 \le x \le 0.5$*	*> 0.5*
	Australia	Austria	Belgium	Germany
	Chile	Brazil	Finland	Hong Kong SAR
	Denmark	Canada	Norway	Japan
	Iceland	China	Portugal	Taiwan Province of China
	Malaysia	France	Singapore	
	New Zealand	Greece	Sweden	
	Russia	India	Switzerland	
	South Africa	Ireland		
	Spain	Italy		
		Korea		
		Mexico		
		Netherlands		
		Poland		
		Thailand		
		United Kingdom		
		United States		

Sources: International Monetary Fund and Central Bank of Iceland.

index of deflation vulnerability for Iceland using the same methodology as in the IMF report. According to these measurements, Iceland has an unweighted index score of 0.27 and a weighted score of 0.19, i.e. a low to minimal deflation vulnerability.[5] Indicators reflecting excess capacity in the Icelandic economy on the basis of these measurements were the following: (i) the GDP deflator decreased by 2.1% between Q1/2002 and Q1/2003; (ii) real GDP growth over the past three years was less than the annual average growth over the preceding decade, and (iii) the real effective exchange rate of the króna appreciated by much more than 4% between over the four quarters to Q1/2003.

According to the IMF analysis, several countries are apparently quite vulnerable to deflation at present. The unweighted evaluation yields a high risk measurement, i.e. an index score of more than 0.5, only for countries which are currently tackling deflation. The weighted risk evaluation, on the other hand, which incorporates financial market scope, indicates

5. Based on the latest available data in each category.

that Germany is also in this group. While most forecasts suggest that inflation in Germany will be in the region of 1¼% in 2003, which is a similar figure to previous years, there is nonetheless some probability of deflation emerging in the medium term, although it is thought fairly unlikely to become persistent. In Japan in particular, but also in Hong Kong and Taiwan, sustained deflation is apparently a considerable threat. Built-in expectations of falling future prices must be regarded as a strong contributing factor there.

Although deflation has already been discerned in China, the risk of an economic contraction there is low. The reason is that the indicators used are fairly demand-driven, i.e. they focus mainly on diminishing demand, while deflation in China has largely been driven by increased supply in excess of demand growth.

The United States does not appear very vulnerable to deflation according to the IMF evaluation, despite various indications of economic weakness at present. In the IMF's view, the expected narrowing in the output gap, relief provided by a recent depreciation of the US dollar, the resilience in the financial sector, the availability of policy stimulus, and the explicit willingness of policy makers to take preemptory action, will serve to dampen downward pressures on prices in the US in the coming term.

As far as Iceland is concerned, with aluminium industry investments planned for the next few years, the outlook is for ongoing rises in aggregate prices. Nonetheless, a general contraction, for example in Japan and Germany, could deliver shocks to individual sectors such as fisheries and tourism.

While the index of deflation vulnerability provides certain indications about the current economic position of the surveyed countries, its findings must still be taken with some reservations. For example, it is not entirely certain that the same measurements necessarily represent a uniform trend in all economies. Thus lower real GDP growth over the past three years than over the preceding decade could arguably in some cases reflect better balance in the economy rather than simple excess capacity. Likewise, lower nominal credit growth than nominal GDP growth over the past four quarters might not necessarily reflect excess capacity. A fall in private sector debt could just as easily indicate a more prudential outlook which would enhance financial stability and eventually result in lower lending losses by banks.

On the whole there is little sign that deflation will become a global problem in the years to come. There does not seem to be much risk of a deflationary impulse being transmitted from China, where the current situation is regarded as short-lived. Although deflation has already taken hold in Japan, Hong Kong and Taiwan, there is thought to be a minimal risk of sustained deflation elsewhere. However, the strong correspondence between national cyclical swings does pose some probability of a conjunctural drop in prices and an economic contraction in various countries.

Source:

International Monetary Fund (2003). *Deflation: Determinants, Risks, and Policy Options* – Findings of an Interdepartmental Task Force.

http://www.imf.org/external/pubs/ft/def/2003/eng/043003.htm

Appendix 2 Comparison of inflation-targeting countries' inflation reports

A crucial precondition for a successful monetary policy is that it should be transparent and credible. This reinforces confidence that the policy is implemented as sensibly as possible and based on in-depth and competent economic analysis and credible economic forecasting. One of the most effective ways that a central bank can build up confidence in its ability to attain its target is to publish the analysis on which its decisions are based, so that the general public, government authorities and other experts can judge its credibility and the bank's capability for forecasting inflation and other key economic variables.

For this reason, inflation-targeting central banks have devoted much effort to publishing inflation reports presenting their in-depth assessment of the current economic situation, a medium-term economic forecast and the uncertainties connected with it, and the rationale for monetary decisions based on this analysis.

A comparative study of inflation reports from 20 countries which are on a formal inflation target, by Andrea Fracasso, Hans Genberg and Charles Wyplosz, has recently been published by the International Center for Monetary and Banking Studies in Geneva.[1] Compiled on the initiative of the Central Bank of Norway (Norges Bank), this report was published in cooperation between ICMB of Geneva and CEPR of London.[2]

The study evaluates a broad range of factors that the authors consider necessary in order for central banks to achieve the above goals in publishing their inflation reports. One report per country was evaluated (generally the last report for 2002) by five graduate students in economics. Thus the sample is obviously small and a more reliable evaluation would have been obtained if more people with broader backgrounds had read the reports, and if more reports had been assessed from each bank. Nonetheless, the results are interesting and are valuable to the Central Bank of Iceland in its efforts to enhance even further the publication of its inflation report, *Monetary Bulletin*.[3] The following is a summary of the main findings of the study.

Main findings

Broadly speaking, most of the twenty reports are found to be of high quality and to be quite ambitious about disseminating as much information as possible on their view of the economic outlook and monetary policy responses to it. A fairly strong correlation seems to exist between different criteria for the quality of reports, i.e. a central bank that does well on one dimension tends to do well on most others. Likewise, there is a statistically significant relation between the quality of the inflation report and the predictability of monetary policy, i.e. the better the inflation report, the more transparent the monetary policy.[4]

The readers were asked to evaluate various aspects of the credibility of the analytic framework and the accessibility and thoroughness of information about banks' assumptions, policies and interpretations, the detail and thoroughness of their economic forecasts and how clearly the forecast assumptions were explained. Finally, they made an overall assessment of how convincing the reports were, how well they reflected each bank's expertise, and their completeness, readability and information content.

The Bank of England emerged as a clear leader in terms of inflation report quality. On virtually every

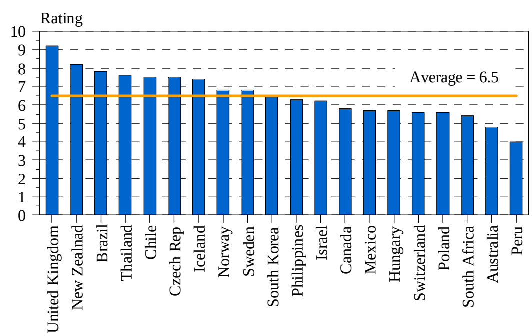
1. The 21st country, Columbia, was not included in the survey due to lack of data.
2. Andrea Fracasso, Hans Genberg and Charles Wyplosz, "How Do Central Banks Write?", *Geneva Report on the World Economy, Special Report 2,* International Center for Monetary and Banking Studies (ICMB) Geneva, May 2003. The study is available from the Norges Bank website: www.norges-bank.no/pengepolitikk/konferanser/2003/fracasso.pdf.
3. The definition of *Monetary Bulletin* as the Central Bank of Iceland's inflation report effectively applies to the Introduction, the chapter on Economic and monetary developments and prospects and, where appropriate, the chapter on Financial markets and Central Bank measures (plus the data appendix). Other inflation-targeting countries publish a separate inflation report as well as a quarterly report on monetary policy and other central banking activities. In Iceland, these are combined into a single publication.
4. It is generally assumed that the effectiveness of monetary policy depends on how easy market participants find it to forecast the central bank's actions, i.e. how predictable its monetary policy responses are. The reason is that the transmission of monetary policy shocks to, for example, long-term interest rates operates through market participants' expectations, making it increasingly effective, the more transparent and credible that it is.

dimension its report scored highest in the survey. It is pleasing to see how well the Central Bank of Iceland's *Monetary Bulletin* was rated in this comparison, especially with regard to the quality and credibility of its analysis and its detail and completeness. In the readers' view, the main shortcomings were a lack of information about when and by whom monetary policy decisions are made, the views of individual decision-makers and disagreements among them. The comparison suggests that, on the whole, the Central Bank of Iceland's inflation report is rather well presented, with a professional and credible analysis. Nonetheless, it also indicates scope for improvement, and as such is of great value to the Central Bank.

In terms of convincingness, the analysis presented in *Monetary Bulletin* is rated at 7.8 out of 10. The average score in this category is 6.4 and *Monetary Bulletin* ranks third after the reports from Bank of England and New Zealand Reserve Bank. It also scored well for reflecting the Central Bank's expertise. With a rating of 7.0 in this category, *Monetary Bulletin* shared 7th-9th place with the Hungarian and Norwegian reports, while the average score was 6.3. For completeness it received a rating of 7.2 (the same as the reports from Chile and the Czech Republic) compared with the average of 5.9. *Monetary Bulletin* scored relatively lowest for its writing style with 7.4, slightly below the average. The Bank of England inflation report again heads that category with a score of 10, while *Monetary Bulletin* is placed only eleventh, leaving clear scope for improvement. Finally, the information provided in *Monetary Bulletin* is considered fairly thorough. On this point *Monetary Bulletin* scored 7.6 as against the average of 6.5, and it is ranked 6th-7th with the report from the Bank of Thailand.

The overall score of *Monetary Bulletin* is 7.4, placing it sixth in the survey. The Bank of England inflation report heads the list with an average score of 9.2, followed some way behind by the report from the New Zealand Reserve Bank with 8.2. A cluster of reports come immediately afterwards: The report from Brazil with 7.8, the Thai report with 7.6, the reports from Chile and the Czech National Bank with 7.5, and finally *Monetary Bulletin*. Given the reported standard deviation for the assessment, however, the difference between these five reports is hardly statistically significant. Rated some way down are the next reports, from Norway's Norges Bank and Sweden's Riksbank with an average score of 6.8. The average for the sample is 6.5, as shown in the chart below (Figure 3.3 in the ICMB report).

Overall assessment (1=bad 10=good)



Source: "How Do Central Banks Write?" see footnote 2.

Among other findings, the readers rated the information presented in *Monetary Bulletin* highly in terms of quality and quantity. Overall, information was neither excessive nor insufficient, and considered easy to find. For example, *Monetary Bulletin* ranked second of the sample for arguments for future decisions. It was also close to the top for clarity of assumptions made at time of decision, apart from its treatment of foreign financial conditions. The report also scored well for transparency of underlying forecast assumptions.

One evaluation focused on explanation of the policy decision-making process and *Monetary Bulletin* scored well on this point too, except for reporting of discussions and disagreements by decision-makers, as mentioned above. This is because the Central Bank of Iceland is the only inflation-targeting central bank which does not hold scheduled meetings to fix interest rates. Many central banks also make the minutes of their monetary policy committee meetings public in order to increase transparency even further. The Central Bank of Iceland has been examining such a procedure for some time.

A final criterion was the quality of the executive summary (which in the case of *Monetary Bulletin* is the Introduction). Readers found the Introduction to be a comprehensive summary of the main issues of the analysis, conveying the rationale of policy decisions and being generally convincing. Once again, however, it was the lack of coverage of objections among policy-makers that brought down the overall rating for this category. On the whole, however, the executive summary was rated second-best among the sample, after the Bank of England inflation report.