

Higher inflation over the next four quarters, but the outlook two years ahead is broadly unchanged

Clear signs of accelerating domestic demand have emerged since the Central Bank published its macroeconomic and inflation forecast in March. National accounts estimates for 2003 which were published shortly after that forecast indicate a higher rate of growth than previously forecast, and early signals regarding the growth of private consumption and investment in the first months of this year give no hint of a slowdown. In the past two months this pattern has also been reflected in higher inflation, although it has also been affected by a surge in prices of oil and other commodities in world markets. At the same time, financial conditions of businesses and households have improved due to lower interest rates. The expansion of the Norðurál aluminium smelter, the effects of which were incorporated into the March forecast, has been given a definite go-ahead. The macroeconomic and inflation forecast presented here reflects these developments. The output gap will turn positive sooner than was previously expected and will probably be sizeable towards the end of this year. Furthermore, the króna has depreciated slightly since the March forecast. Brisker demand, the weaker currency and higher fuel prices have created less favourable inflation prospects one year ahead. Over a two-year horizon, the prospect that inflation will be slightly above target at the end of the forecast period is broadly unchanged. This outlook gives grounds for a further tightening of the monetary stance.

I Economic developments

Over the past two or three months, clear signals have emerged that the rate of domestic demand growth is gaining momentum, even to the point where macroeconomic imbalances are starting to appear. In the past two months this has also been reflected in more rapid inflation, which at the beginning of May exceeded the target for the first time since December last year and has not been higher since August 2002. Buoyant demand is not the only driver of inflation. Some of the rise in the CPI in recent months has been imported, in particular through higher petrol prices and a weakening of the króna. The increase in goods prices, however, is moderate.

In particular, growing demand has been reflected in rising housing prices in the past few months after a lull of half a year. This has been one of the main drivers of inflation recently. Higher disposable income, a favourable employment situation and improving financial conditions have fuelled demand for housing and put pressure on housing prices with a corresponding increase in construction activity, which appears to be flourishing.

Indicators of private consumption point to a rate of growth during the first months of 2004 which is broadly in line with that in 2003. Private consumption should be lifted by recent wage settlements with large sections of the labour force, which coupled with improved conditions in most parts of the labour market will underpin higher real wages in the near future. The same applies to rising asset prices for both real estate and equities. Statistics Iceland's labour market

1. This article uses data available on May 19, 2004.

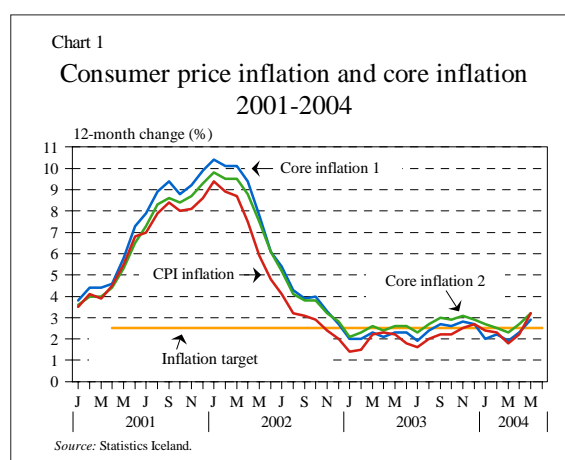
survey reveals that employment has not increased by the equivalent of the reduction in unemployment, but there are indications that many businesses aim to recruit staff in the near future. Gross fixed capital formation of businesses (excluding the metals sector) is probably on the increase as well, although the data sources are not as reliable. The crucial factor is that hydropower construction is now well under way, as reflected in various data.

Demand has grown rapidly so far in spite of fairly weak external conditions which also played a part in the wider current account deficit last year. The fisheries sector has been hit by lower prices for marine products and higher oil prices. Fish catches have picked up recently and both volume and prices are expected to improve this year. The sluggish economic recovery in Europe could delay such a development. However, the slow recovery and exceptionally low interest rates that it has fostered have helped to create favourable financial conditions for Iceland's indebted economy. This situation has contributed to the hefty lending growth that has characterised the past year, but likewise entails a macroeconomic risk if global interest rates rise faster than is currently assumed.

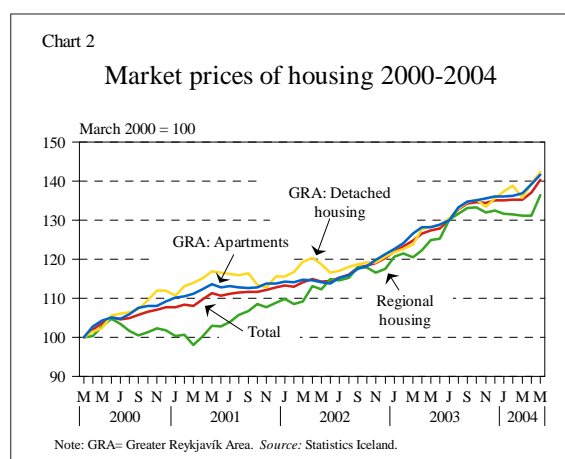
Price developments

After slowing down during the first quarter to 1.8% in March, inflation picked up sharply in April and reached 3.2% in the beginning of May. Core index 1, which excludes various volatile items and is one of the two measures of underlying inflation, also recorded a rate of 3.2%. Measured by Core index 2, which furthermore excludes changes in prices of public services, inflation was somewhat lower, at 2.9%. On a longer horizon it is justifiable to ignore the impact of rises in prices of public services. These have gradually been moving into line with private services after increasing by less over the period from 1999 to spring 2002. All things being equal, these increases can be expected to slow down when the adjustment process is completed.

Roughly 1% of the rise in the CPI over the past twelve months derives from its housing component. From the middle of last year the 12-month rate of increase in the housing component slowed down, from almost 11% in August 2003 to 6.7% in March



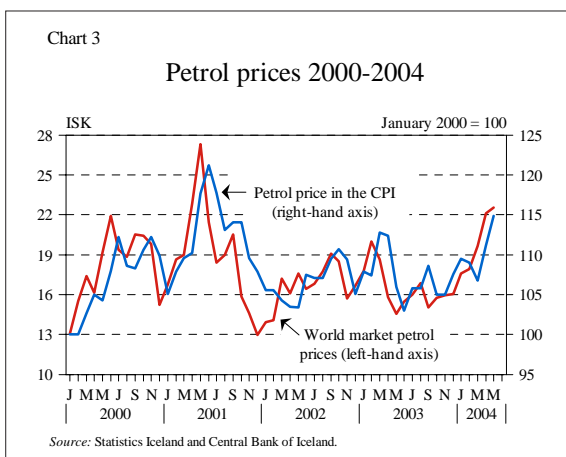
this year. It picked up again in April, however, following sizeable rises in residential housing prices in the Greater Reykjavik Area in February and March. In May, market prices of housing increased by 2.3% and the 12-month rate exceeded 10%. Regional housing prices went down from mid-2003 to April, but in May the monthly rise far outstripped the Greater Reykjavik Area at 4%. Excluding the housing component, consumer prices rose by 2.2%, which is substantial given that they had increased by 1% or less since December 2002 and only 0.7% over the twelve months to March.



Goods price inflation still moderate

In spite of considerable increases over the past three months, the year-on-year rise in prices of imported goods was only 1½% in May; a period of declining prices occurred around the middle of last year.

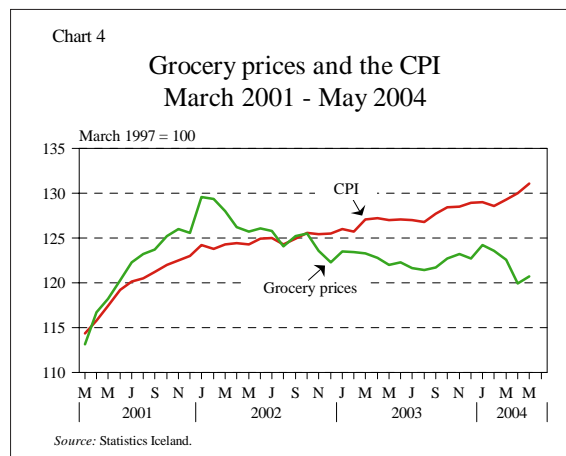
Domestic goods prices have risen by broadly the same amount. In general terms, the past year has been characterised by stable goods prices, as the exchange rate of the króna has been fairly stable. Exchange rate movements are transmitted relatively quickly to some components of the CPI, but to others with a considerable lag. Modest, short-lived movements in the exchange rate, as witnessed over the past year, have relatively little effect. The króna has weakened since February, which probably contributed to higher goods prices in May. Petrol prices are highly sensitive to exchange rate movements and changes in world market prices. Tougher competition in the domestic petrol market in recent months, however, may have affected price developments. In April and May petrol went up by 7½%, the twin result of higher world prices and the weaker króna.



Grocery prices almost 7% lower than at the beginning of 2002

Higher consumer prices affect the real wages of different consumer groups in different ways, depending on the categories involved. Only a small group of consumers is engaged in buying housing in any given month. So the great majority of consumers do not experience the rise in the housing component of the CPI directly, except through changes in CPI-indexed debts, although the opportunity cost of owner-occupied housing increases as well. Consumers can also time their purchases of durables on the basis of price developments. This applies less to various daily necessities. Grocery price changes can therefore strongly influence household perceptions of inflation

on a day-to-day basis. For more than two years, the development of grocery prices has been very favourable for consumers. Despite rising in May, they were still 1% lower year-on-year and almost 7% lower than at the beginning of 2002.

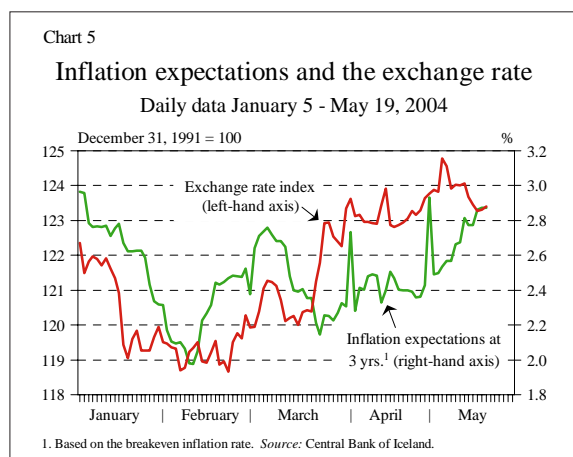


Inflation expectations at or above the target

On average, the breakeven inflation rate (defined as the spread between non-indexed and indexed three-year Treasury bonds) has been virtually equal to the inflation target since the beginning of this year: marginally higher in January, lower in February and on target in March and April. The rate has fluctuated between 2-3%, and was highest at the beginning of the year but lowest roughly a month later. It is natural to link the largest fluctuation, at the beginning of the year, to the movement in the exchange rate. By the beginning of May the depreciation of the króna had edged inflation expectations up compared with the second half of March, although the change cannot be termed significant. The inference is that market participants regard the weakening of the króna as temporary and expect a tight monetary policy to ensure broadly the same inflation developments as assumed before. There is no indication that the decision to go ahead with the Norðurál aluminium smelter expansion has had a significant impact on inflation expectations, which have probably taken it into account for some while.

In a survey of business sentiment conducted over the period February 16 to March 9 among the largest companies in Iceland (in terms of turnover), executives expected a marginally higher rate of inflation

than the breakeven inflation rate on bonds, at 2.8%, while the public expected a rate of 3.3%, according to a Gallup survey made from April 28 to May 12. The difference between these three sets of expectations remains broadly unchanged. The CPI for May was published on the last day of the Gallup survey and happened almost to match household expectations at 3.2%. However, it is likely that inflation expectations were raised by media coverage of higher inflation following the publication of the CPI for May.



External conditions

The global economic recovery has been gaining pace in recent months. In the second half of last year, global economic growth reached its highest rate since 1999, although this is partly explained by the temporary impact of tax reductions in the US and rebounding activity in Asia following the contraction caused by the SARS epidemic. Global growth this year and in 2005 is generally expected to surpass previous forecasts. The IMF, for example, forecasts a 4½% increase in global output in 2004 and 2005, which is half a percentage point more than it projected in September last year. A drawback from Iceland's point of view, however, is that the recovery is still fairly sluggish in its principal export market region, Europe, and is generally forecast to remain muted this year and in 2005. Various imbalances are also still present in the global economy. No significant reduction has occurred in the US current account deficit and there is a corresponding surplus elsewhere in the world, despite a considerable weakening of the

dollar. Output growth in the US must be seen in the context of the very loose fiscal stance and the lowest short-term interest rates for half a century. Neither situation is sustainable in the long run and the challenge faced by the US authorities in the medium term is to tighten its policies without stifling the recovery.

Inflation is on the low side in much of the world, although talk of the risk of disinflation in the US and Europe has ceased. Underlying inflation has been climbing in the US in recent months but is still low in historical terms, and short-term interest rates can be expected to inch upwards later in the year. Markets expect a slow rise in interest rates, as the Federal Reserve has hinted. A number of central banks have begun raising their policy rates, for example the Bank of England, but such a measure is probably further off in the euro area. In fact, influential bodies such as OECD argue for lower interest rates in the euro area.

Higher foreign interest rates will have a sizeable impact on Iceland's indebted economy and dilute the benefits of the economic recovery among its trading partner countries. However, there is little sign that the effect will be felt this year, because the possibility of higher short-term rates in euros, which have the greatest weight in Iceland's external debt, still seems quite remote. Further ahead, a stronger effect can be expected, as discussed in Box 1.

Iceland's main economic sector – fisheries – has not yet benefited from the recovery in Europe. Last year, poor pelagic catches were compounded by lower prices of marine exports and the strengthening of the króna. The total value of the fish catch decreased by 13% in króna terms in 2003, but was marginally higher at constant prices. Plentiful fishing harvests in March and April have boosted catch value at constant prices by 6.4%. So far this year, export prices in foreign currency terms have been just over 6% lower year-on-year. At least part of the fall in prices may be attributed to sluggish private consumption growth in the European Economic Area. Nonetheless, most market participants foresee an end soon to the trend of weakening prices that began in July last year. In Q1/2004, export value of marine products increased by 4% in króna terms and by 4.5% at constant exchange rates.

It is worth noting that, while marine export prices have fallen, global prices of both metals and agricultural commodities have been climbing at the same

Box 1 The economic impact in Iceland of changes in foreign interest rates

Roughly three-quarters of Iceland's net debt is classified as long-term, although the average maturity is not particularly long. Furthermore, a large proportion of long-term debt carries variable interest rates, which closely reflect changes in short-term rates. Currently this leaves the economy more exposed to changes in short-term interest rates than could otherwise be expected. For each percentage point that foreign interest rates rise, Iceland's long-term debt service increases by roughly 0.7% of GDP. Because 86% of Iceland's long-term borrowing carried variable rates at the end of last year – combined with the significant shortening of their maturity, which requires roughly two-thirds of the outstanding stock to be recapitalised over the next three years – the impact of a rise in short-term rates will be transmitted relatively quickly to the debt service burden.¹ Average interest rates on Iceland's foreign borrowing reached a historical low last year at 3.1%. Fixed-interest loans carried an average interest rate of 6% and variable-rate loans 2.6%. So it is not surprising that the bulk of Iceland's foreign debt is currently on variable-interest terms. However, this entails the risk that rates will rise rapidly when the monetary stance is tightened again in main currency areas. If the US and Europe switch from their present loose monetary stance to a tight policy, Iceland's debt service burden could more than double.

Nonetheless, economic developments among main trading partners suggest a slow increase in short-term rates this year. The changed currency composition of Iceland's long-term debt also reduces the likelihood of a swift rise over the next four quarters. The weight of the US dollar has diminished significantly over the past two years, while the euro weight has increased correspondingly. Roughly two-thirds of Iceland's foreign debt at the end of 2003 was denominated in euros, but less than one-fifth in US dollars. As it happens, part of the explanation for the higher euro weight last year lies in its appreciation against the dollar, which in the early 1990s accounted for roughly half of Iceland's foreign debt. The euro also assumed a much heavier

weight in short-term borrowing. Given its economic situation, the euro area seems unlikely to witness a rise in short-term interest rates this year – a reduction cannot even be ruled out entirely. By next year, however, short-term rates are more likely to have begun to climb towards a neutral stance. If the economic recovery remains smooth, there is a possibility that they will turn neutral as early as 2006. However, international forecasts generally assume slower rate hikes.

Although most indications point to gradual changes at first, the Icelandic economy will probably need to make a sizeable adjustment over the next two to five years in order to accommodate higher foreign interest rates. Interest rates on Iceland's overall foreign debt have averaged close to 6% over the past decade. If the recent low rates rise back to this average there will be widespread economic consequences. Net external debt at the end of 2003 was broadly equal to GDP. A return of variable-rate borrowing to the average position, i.e. a rise of 3 percentage points, would raise the net debt service burden, balance on income deficit and current account deficit by the equivalent of almost 3% of GDP. Other things being equal, this extra deficit would need to be funded by further borrowing, which would amplify the impact in the absence of other responses. Nonetheless, such a development would be unlikely to persist for many years. International research shows that a wide current account deficit is normally a short-lived phenomenon and soon forces an

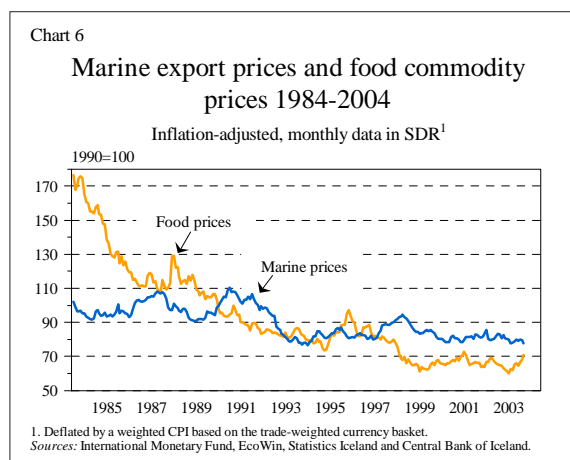
1. Borrowers have been switching from variable to fixed interest rates to some extent in recent weeks and perhaps months.



adjustment that reverses the deficit.² Higher short-term interest rates would weaken the króna, other things being equal. A currency depreciation inherently helps to close a current account deficit through a variety of channels. To achieve the objective of price stability,

2. See, for example, Edwards, Sebastian: *Thirty Years of Current Account Imbalances, Current Account Reversals and Sudden Stops*, NEBR Working Paper 10276, February 2004.

domestic interest rates would also need to go up. Eventually, higher foreign and domestic rates would dampen domestic demand, reduce imports and drive the economy towards external balance. The necessary landing could be fairly hard if it were to go hand-in-hand with an adjustment following the major wave of investment that the economy will experience over the next three years.



time. One explanation for this divergence may be that marine products are confined to specific market regions in Europe, America and the Far East where stringent quality demands are made, but the strongest price increases have been confined to homogeneous commodities such as grain and metals which are undergoing a surge in demand from Asia, especially from China.² If the European economy firms up and real wages begin to rally, marine product prices could also head upwards in main market countries. As Chart 6 shows, there is little correlation between marine export prices and world market food commodity prices.

2. Soya meal, in fact, is in price competition with fish meal to some extent. Notwithstanding growing demand, for example from China, prices of soya meal have not risen as much as for other grain commodities, because production has also been stepped up sharply in other countries such as Brazil.

Oil prices reach fourteen-year high

Although domestic energy sources play an important role in the Icelandic economy, it is also sensitive to oil price volatility. For example, fuel is a major cost item for the fishing fleet and petrol has significant weight in household expenditure, as in other countries. In recent weeks, oil prices have been at a fourteen-year high. The hikes have come as a surprise, because it was generally believed that increased supply from Iraq would push prices down. Such hopes have been dashed by the ongoing conflicts there. OPEC's production quotas are hardly to blame for higher prices, since its members are thought to be producing at almost full capacity. Saudi Arabia has announced, however, that it will propose a quota increase at a meeting on June 3 if prices remain high. The main reason for soaring oil prices seems to be strong demand, to which no end is in sight.

Output and demand

In mid-March, Statistics Iceland published the national accounts for 2003, which showed output expanding faster than had been expected by most forecasters, including the Central Bank. Output growth in the final quarter of last year was at its highest since Q1/2001. Gross fixed capital formation continued to accelerate, increasing by almost one-third year-on-year. Private consumption grew at broadly the same pace as earlier in the year, while the slowdown in public consumption growth continued. External trade made a significantly negative contribution to output growth, as it also did in the second and third quarters.

Over the year as a whole, GDP increased by 4%, or 1¼ percentage points more than the Central Bank's estimate made shortly before the national accounts

Table 1 National accounts in the year 2003

<i>Volume change on previous year (%)</i>	<i>Q1</i>	<i>Q2</i>	<i>Q3</i>	<i>Q4</i>	<i>2003</i>	<i>Forecast for 2003¹</i>
Gross domestic product	4.6	3.3	3.3	4.9	4.0	2¾
National expenditure	3.0	9.7	9.0	10.2	8.1	6¾
Private consumption	6.3	6.7	6.1	6.4	6.4	6
Public consumption	3.2	3.9	2.9	2.2	3.0	3
Gross fixed capital formation	-6.7	21.8	27.7	32.7	19.0	12½
Exports of goods and services	5.0	-5.1	1.4	-3.9	-0.7	¼
Imports of goods and services	0.6	10.6	15.7	10.9	9.7	10½
<i>% of GDP</i>						
Goods and service balance	1.8	-5.5	-3.8	-5.6	-3.4	.
Current account balance ²	-1.3	-8.7	-6.0	-6.0	-5.5	-5½

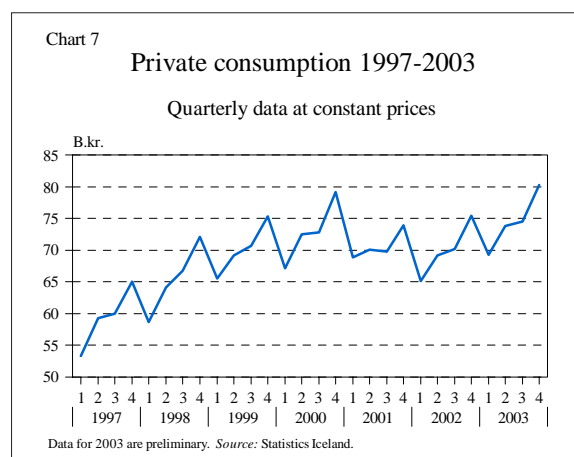
1. Central Bank forecast in March 2004. 2. Excluding net current transfer. Sources: Statistics Iceland, Central Bank of Iceland.

were released. Both private consumption and gross fixed capital formation increased well in excess of the Bank's estimates, but public consumption growth was as expected. Slower export growth and faster import growth offset the increase in national expenditure. No major revisions were made to the national accounts for 2002. It is interesting to note that although Statistics Iceland's estimate for output growth in 2003 was considerably higher than the Central Bank's, the nominal value of GDP according to the national accounts was lower than the Bank had estimated (806.4 b.kr. as against 811.9 b.kr.). Conceivable reasons are discussed in Appendix 2.

Private consumption growth above the Bank's forecast

Private consumption in Q4/2003 was 6.4% higher year-on-year, close to the average rate for the whole year. Growth was roughly half a percentage point higher than the Central Bank forecast for the whole year. The main explanation for the divergence is that, according to the national accounts, the price deflator for private consumption increased by less than the Central Bank had estimated (see Appendix 2).

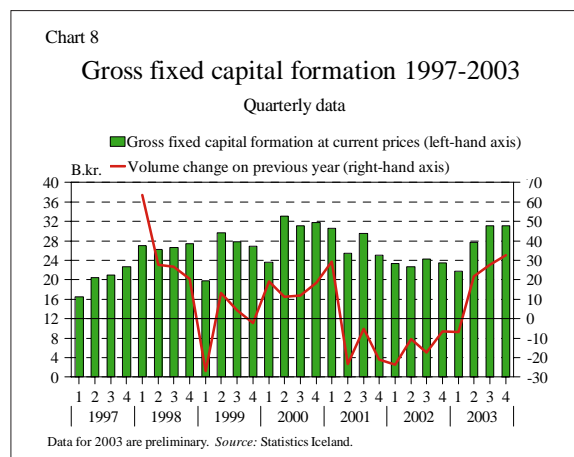
Public consumption growth slowed down in the final quarter compared with earlier in the year, in addition to which the estimate for the first three quarters was revised downwards by almost 1%. This was the second downward revision of public consumption figures for the year.



Much higher-than-expected growth of gross fixed capital formation in 2003

According to the national accounts, gross fixed capital formation in the last quarter of 2003 increased by 33% year-on-year. The Q4/2003 data confirmed that investment growth picked up speed during the year and estimates for the first three quarters were revised upwards by almost 3 percentage points on average. Over the whole year, gross fixed capital formation increased by 19%, or 6½ percentage points more than the Central Bank forecast. Business investment rose by 24%, which was 5½ percentage points above the Bank's forecast. A contraction was noted in the fisheries sector, but substantial increases were recorded in metals indus-

tries, construction, utilities, the hotel and catering sector and telecommunications. Investment in residential housing is estimated to have increased by 13.3% – compared with the Bank’s figure of 6%, which itself had already been raised in the revised forecast in March.



Current account deficit equal to 5½% of GDP

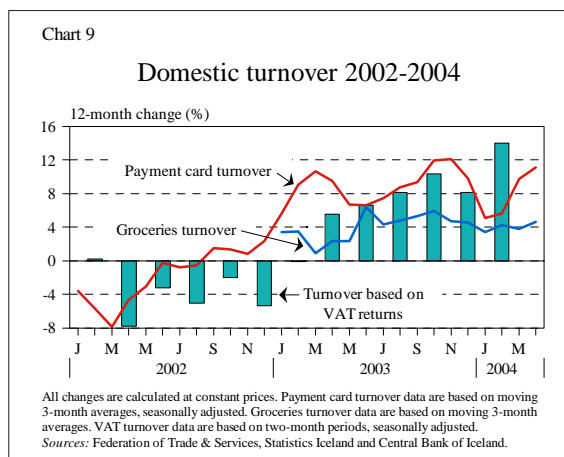
The current account deficit in 2003 was equal to 5½% of GDP, as the Central Bank had forecast. Its roots lie in the combined effect of rapid import growth, driven by higher demand, a contraction in exports caused by poorer fish catches than in 2002, and falling prices for marine exports. In 2003 the terms of trade deteriorated by the equivalent of 0.9% of the previous year’s GDP. National income therefore grew by considerably less than GDP, lagging 2.6% behind.

Rapid demand growth so far this year

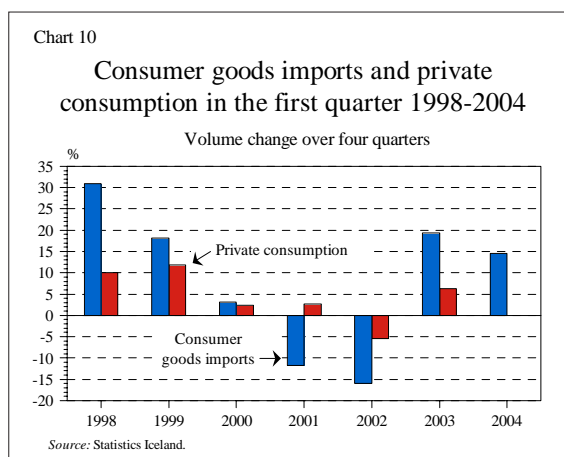
Domestic demand still appears to be buoyant. Turnover and import statistics indicate that private consumption expanded year-on-year at broadly the same rate as last year. In the first four months of 2004 groceries turnover increased by 4% in real terms year-on-year and payment card turnover by 7% at constant prices.³ Turnover according to VAT returns in the first two months of this year was 9% up year-on-year in real terms. Of this figure, turnover in

3. Some reservations are needed when interpreting payment card turnover changes, both because corporate turnover is not specified in the figures and because payment cards have been gaining ground on other payment media such as cheques.

domestic sectors rose by 14%, the biggest increase in real terms since 2000. Growth measured highest in wholesaling, services, hotels and catering, and construction and contracting.



Gallup’s consumer confidence index reached its second-highest value ever in March (surpassed only in the general election month of May 2003), but slipped back in April and May. Consumer assessments of the employment situation have moved within a relatively narrow range since early in 2002, and have not matched the lasting upbeat assessment of the economic situation. In March, more consumers were planning large-scale expenditures within the coming six months (e.g. on foreign travel or car or housing purchases) than at any time in the three-year history of these surveys.



Cement sales have soared in recent months. In the first quarter, cement sales were two-thirds up year-on-year. Sales to the Kárahnjúkar power station have increased substantially and accounted for an estimated 40% of total cement consumption in Q1.

Imports surged in the first months of this year

One of the clearest indicators of growing domestic demand is the surge in imports. Year-on-year growth of consumer goods and investment goods imports in the first quarter was broadly in line with last year's average rate of growth, at 15% and 14% respectively. Excluding ships and aircraft, imports of investment goods increased by 37%, which is also in pace with last year's growth. Imports of intermediary goods in Q1, on the other hand, ran one-quarter higher than last year, when they were virtually stagnant. While part of this increase is explained by hefty imports of intermediary goods for the aluminium industry, which are a volatile item, the main factor at work was a surge in imports of other unspecified intermediary goods, which are probably connected with power sector investments to some extent.

Higher asset prices support demand

Higher asset prices continue to support domestic demand. Iceland Stock Exchange's ICEX-15 index has risen by almost one-quarter since the beginning of the year, on the back of a 56% increase over 2003. Housing prices in the Greater Reykjavík Area have also climbed in the past two months after half a year of stagnation. In part, higher housing prices are

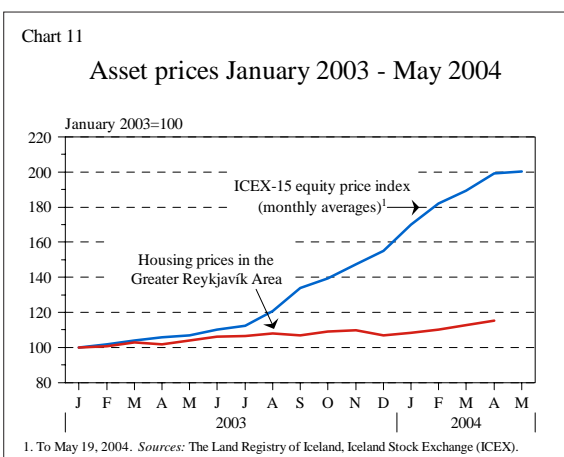
linked to lower yields on housing bonds in recent months. (see Appendix 1). The yield on housing bonds dropped in March and April, and in the latter month was roughly half a percentage point lower than in January. In the past few weeks some of this decrease has been slightly reversed, however. Bank interest rates have also gone down and new types of mortgage are now offered to homebuyers. Furthermore, the wage settlements between several major labour unions and the Confederation of Employers can be expected to have dispelled uncertainties and are likely to stimulate the asset markets.

Exports picked up in March

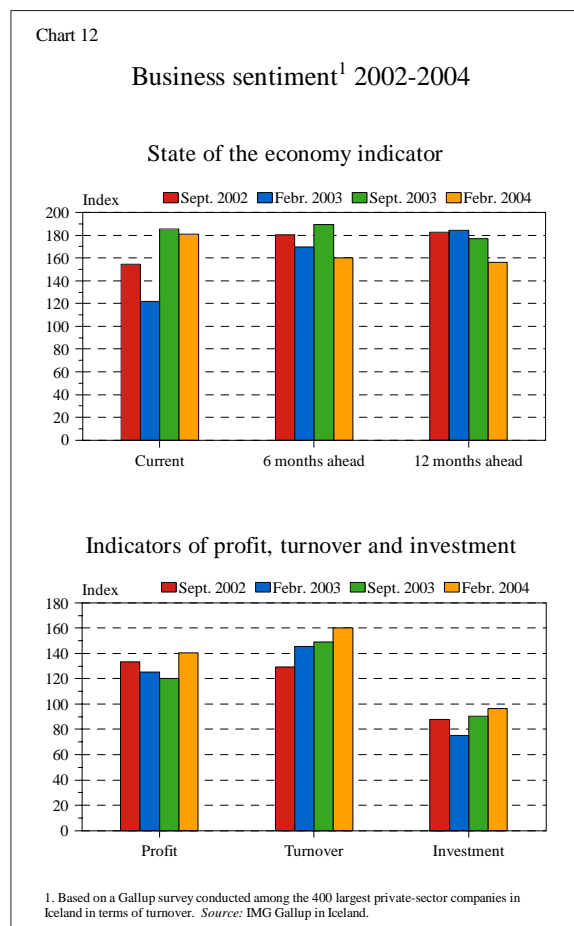
As described above, exports were depressed in 2003 and actually contracted slightly overall. After a weak start to the year, merchandise exports bounced back in March. Marine exports rallied after catches picked up in February and March. In volume terms, general exports increased by 9% year-on-year in the first quarter, with marine exports up 11% although prices for them were 6½% lower. Aluminium exports shrank by 15% compared with Q1/2003, but this fluctuation can be seen as an aberration reflecting a spike in the corresponding period a year before – annual aluminium production is fairly stable although exports may fluctuate in the short run. It is premature to infer what the development in the opening months heralds for the year as a whole, because the first quarter is frequently unrepresentative of the rest of the year. Although the merchandise account was in broad balance over the first quarter (which is usually a favourable period), it had deteriorated by roughly 6 b.kr. year-on-year.

Indications of growing business activity and investment

Strong growth in imports of investment goods is normally a reliable indicator of business investment. At present, however, it is difficult to read any pattern for general investment from these figures, since imports that are directly and indirectly connected with investments in aluminium and hydropower projects are not specified. Last year's surge in investment in other sectors came as a surprise. The investment index, based on a Gallup survey for the Central Bank and Ministry of Finance and sampling the largest companies in Iceland in terms of turnover, went down at the begin-



ning of 2003. In the same period this year, however, the index rose significantly year-on-year. Experience shows that such a change needs to be viewed with caution. Businesses in general seem optimistic about their own turnover and profits for this year, but less upbeat about economic developments.



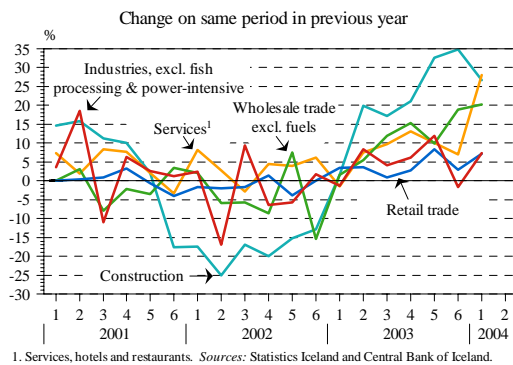
Data based on VAT returns show soaring growth in the construction industry. Turnover in construction and contracting in the first two months of the year increased 27% year-on-year, reflecting intense activity in the power sector and a boom in housebuilding.

Residential investment still buoyant

Financial and other economic conditions are favourable for the residential housing market. Employment is broadly stable and the job situation is improving, real wages have risen, inflation has stayed

Chart 13

VAT turnover volume by sector 2001-2004

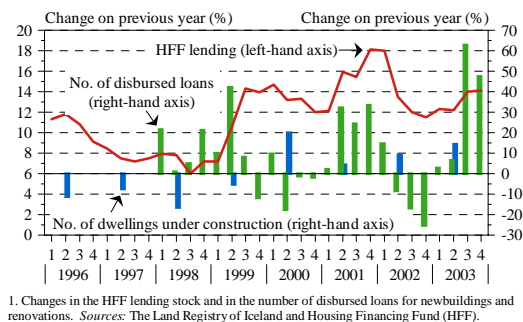


modest so far and interest rates are at their lowest for years. Expectations are also running high that a boom will take off when large-scale industrial investments get under way over the next three years. Housing prices were flat in the second half of last year but in recent months have resumed the upward path that they have followed for the past seven years, and are now at a historical high in real terms relative to general price developments.

Despite the economic upturn and rising housing prices over the period 1998-2000, residential investment remained sluggish then. This changed in 2003. Residential investment increased by 13% that year, far in excess of forecasts. There are many signs that rapid growth will be sustained for the time being. Groundwork had begun last year for roughly 13% more dwellings than in 2002 and the number under

Chart 14

HFF lending¹ (quarterly data) and dwellings under construction (annual data) 1996-2003



construction increased on much the same scale, which will be reflected in residential investment data for 2004. These figures are broadly in line with lending growth by the Housing Financing Fund over the past year.

Profitability of listed companies generally healthy in Q1

At the time of writing, not all companies listed on Iceland Stock Exchange have published their profit figures for the first quarter. Available interim statements, however, indicate that profitability was as strong as last year, or stronger. Of particular note is the higher profitability year-on-year reported by fisheries sector companies. Profit after tax was down, however, due to the smaller effect of exchange rate movements on their liabilities. Cash generated by operating activities increased in Q1 and almost doubled year-on-year. Equity ratios have also strengthened.

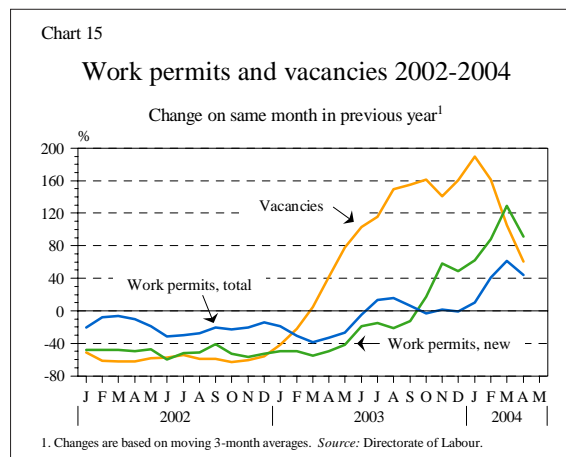
Labour market

Labour market indicators suggest that labour demand is picking up, although not on the scale implied by falling unemployment and other signs. Statistics Iceland's labour market survey suggests that employment has not risen in pace with the decrease in unemployment. The number of employed in Q1/2004 increased by only 500 (0.3%) year-on-year, while 1,300 fewer persons were unemployed. Roughly 800 persons have therefore withdrawn from the labour market; the participation rate (i.e. the proportion of the population of working age who are either employed, or unemployed but seeking work) dropped accordingly from 80.1% to 79.2%. Average hours worked were unchanged year-on-year at 40.9, but basic working hours were 0.3 hours shorter. Hence labour volume (the product of hours worked and number employed) contracted by 1.8%.⁴ Interestingly, the survey showed a greater contraction in labour volume in regional Iceland than the Greater Reykjavik Area, in spite of more jobs related to power station construction in east Iceland.

4. See Appendix 2 on the different measures used in Statistics Iceland's labour market survey.

Registered unemployment has declined fairly steadily since August 2003, from a seasonally adjusted 3.5% to 2.9% this April. However, the rate of decrease appears to be slowing recently compared with last year. There is some discrepancy between registered employment in data from the Directorate of Labour, which was 3.6% in Q1/2004, and the 3.1% figure produced by Statistics Iceland's labour market survey. This is largely the result of their divergent definitions of unemployment and labour force, as discussed in Box 2.

An increase in vacancies registered with employment agencies is often one of the first signs of an upswing in the labour market. As Chart 15 shows, vacancies began to increase in spring 2003, several months before unemployment headed downwards. Vacancies are still increasing briskly year-on-year and could be heading for a record at the seasonal peak. The increase in vacancies is probably not solely an indication that economic activity is picking up. To some extent it may lie in a growing tendency among employers to advertise vacancies in advance if they do not expect to be able to fill them with domestic labour, in order to secure work permits more quickly afterwards.



The surge in vacancies in northwest Iceland in spring and summer 2003, for example, is largely explained by the need for abattoir workers in the autumn (Chart 16). Vacancies for power station construction work in east Iceland also account for more than half of the regional increase in vacancies in August and September last year. On the other hand,

Box 2 Labour market statistics: a discrepancy or a question of definitions?

Two kinds of measurements of unemployment and other labour market aggregates are used in Iceland, based on either Statistics Iceland's labour market surveys or figures compiled by the Directorate of Labour. As defined by Statistics Iceland, persons are classified as unemployed who are seeking work and can start work within two weeks.¹ The Directorate of Labour, on the other hand, reports those who are registered as unemployed with an employment agency. As Table 1 shows, fewer males were registered as unemployed than fell within the Statistics Iceland definition, while the opposite applied to females. One proposed explanation has been that males have less tendency to register as unemployed,

while females with young children are commonly not classified as unemployed in the terms used by Statistics Iceland, since they cannot start work within two weeks despite being registered as unemployed, the only requirement for which is to "be prepared to accept employment in all ordinary types of jobs".²

Divergent definitions of "labour force" also create different denominators for the unemployment rate. In Statistics Iceland's labour market surveys, people are classified as employed if they worked one hour or more in the reference week (the labour force comprises both employed and unemployed), while the Directorate of Labour follows Ministry of Finance estimates for man-years in the labour market. Thus Statistics Iceland applies a considerably higher denominator than the Directorate of Labour, as the table shows. The discrepancy is greater among females, who more commonly work part-time.

Thirdly, unemployment is counted in different ways. Statistics Iceland includes all individuals fulfilling its definition of being unemployed, irrespective of whether they previously worked full-time or part-time. The Directorate of Labour, on the other hand, calculates days of unemployment from the number of unemployed persons relative to the percentage of a full-time position that they previously worked.³ One day of unemployment by two individuals in half-day jobs is calculated as one day of unemployment. In other words, it measures the number of whole days of unemployment during the month, and not the number of unemployed individuals (irrespective of working hours), as Statistics Iceland does. The difference in measured unemployment between the Directorate of Labour figures and Statistics Iceland's labour market surveys has been in the range 0.1 to 1.6 percentage points, and not always in the same direction. It is more

Table 1 Two definitions of unemployment

In Q1/2004

<i>Unemployed (no.)</i>	<i>SI¹</i>	<i>DL²</i>
Males.....	2,800	2,615
Females.....	2,000	2,443
Total.....	4,800	5,059
	<i>(labour force)</i>	<i>(man-years)</i>
<i>In the labour market</i>		
Males.....	82,300	80,745
Females.....	74,800	59,421
Total.....	157,100	140,166
<i>Unemployment rate (%)³</i>		
Males.....	3.4	3.2
Females.....	2.7	4.1
Total.....	3.1	3.6

1. Statistics according to Statistics Iceland's labour market surveys (SI). 2. Figures from the Directorate of Labour (DL). 3. Expressed as a proportion of the labour force in SI but as a proportion of total man-years in DL.

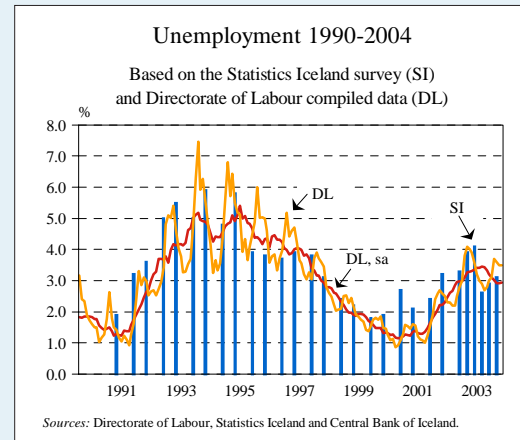
Sources: Statistics Iceland, Directorate of Labour.

- The current definition used in the Labour market survey is: "Persons are classified as unemployed who were not employed during the reference week, are able to start work within two weeks from when the survey was conducted and furthermore fulfil one of the following conditions:
 - Have been seeking employment for the previous four weeks including the reference week.
 - Have found a job that begins after that period, but within no later than three months.
 - Await being called to work."

2. Unemployment Insurance Act no. 12/1997, Article 2.

3. The Directorate of Labour's definition is as follows: "The number of days of unemployment is the total number of working days of the individuals registered as unemployed during the month (one working day equals eight hours). All days of the month are included except Saturdays and Sundays, less the time that the individual has worked in the month based on an eight-hour day or the equivalent. Other holidays than Saturdays and Sundays are counted as working days".

common for Statistics Iceland to report higher unemployment figures than the Directorate of Labour when joblessness is on the increase, and vice versa when it is diminishing. A conceivable explanation for this discrepancy is that the labour market surveys cover individuals who lose their jobs during a period of contraction before they register as unemployed. When the job situation improves, it may likewise cover individuals who have found work but not been removed from the register, perhaps because they have not yet commenced their new jobs. Furthermore, the Directorate of Labour figures may underestimate the labour force during an upswing and overestimate it in a downswing, due to the tendency to withdraw from the labour market when the economy contracts and return to it when the outlook improves.



more vacancies were created in the Great Reykjavik Area in August when students left the labour market while there was still a need for summer relief workers.

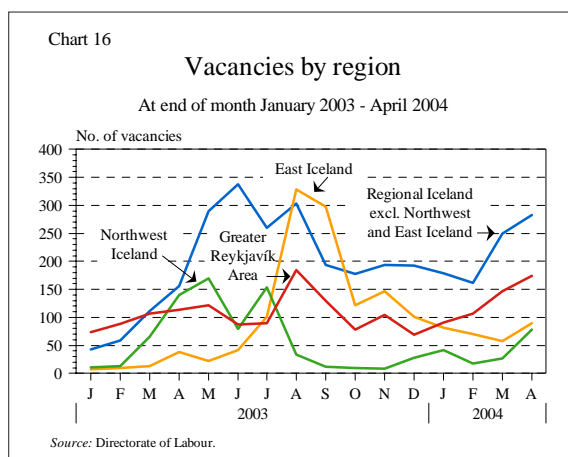
More than twice as many work permits were issued in the first quarter of this year compared with Q1/2003. The proportional increase in first-time work permits was even greater. Average vacancies more than doubled over the same period.

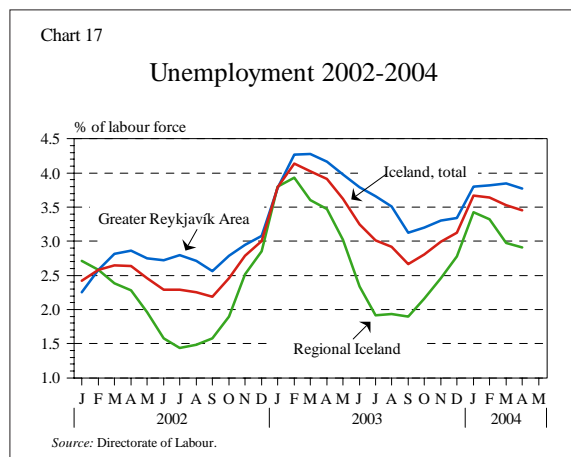
Notwithstanding massive investment in the power sector in east Iceland, the job outlook seems to have improved most in the Greater Reykjavik Area, judging from the Gallup survey of business sentiment, after higher unemployment there last year than in the regions. Over the first four months of this year,

vacancies increased faster year-on-year in and around the capital but remained broadly unchanged elsewhere.

The fisheries sector appears to have been squeezed over the past year, according to the Gallup survey in February and March (see below). This is at odds with the interim reports of listed companies mentioned above, which may be explained by improved catches and more favourable exchange rate developments after the survey was made. Furthermore, the results of listed fisheries companies are probably better than those of the sector as a whole. Of individual sectors, fisheries companies expressed the need to reduce their labour force most, by 1.9%. The transport and travel sector, however, expects to take on 6.3% more employees. Overall, companies want to recruit 1.3% more employees over the year. Regional companies expect to continue to lay off staff this year, cutting back by 1.3%, while businesses in the Greater Reykjavik Area want to hire 2.1% more. A survey conducted for the Federation of Icelandic Industries produced a similar outcome. More companies expect to recruit employees than lay them off.

These findings have been confirmed in interviews with employment agencies, employers and unions. The apparent pattern is for subdued job growth in the regions apart from east Iceland, where there is a shortage of craftsmen and construction workers outside the hydropower construction site. Demand for





craftsmen is strong in Reykjavík, where residential construction is at the highest level for years. Some contractors are quite probably hoarding labour as a hedge for the beginning of construction work on the Norðurál smelter expansion and related power facilities. The employment situation in southwest Iceland is depressed and shows no sign of changing in the near future.

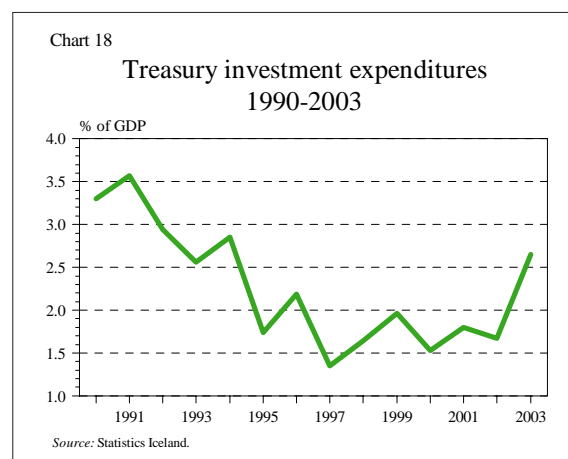
Public sector finances

Public sector finances in 2003 were characterised by large increases in Treasury expenditure and revenues, which as a proportion of GDP rose by just over 2½% and just under 2½% respectively. The expansion in expenditure is expected to be more than reversed this year, but revenues will decrease by less, turning the deficit equivalent to 1½% of GDP in 2003 to a minor surplus in 2004.

Provisional figures from Statistics Iceland reveal that the public sector deficit in 2003 amounted to 11 b.kr., or 1.4% of GDP, compared with a deficit of 1.1% of GDP in 2002. At the beginning of this year, the Ministry of Finance forecast a deficit in 2003 of 2% of GDP. Treasury revenues are now estimated to have risen by almost 9% year-on-year, rather more than assumed in the supplementary budget as passed by parliament. Expenditures increased more, by just over 10%. The local government financial result appears to have been better than expected, while central government finances were broadly in line with forecasts. Local government revenues were originally forecast to grow by 6%, but provisional estimates

now put this figure at 5.2%. Their expenditures were 3% higher. The lion's share of the improvement is accounted for by lower investment outlays. Estimated public consumption growth in 2003 was 3% in volume terms, as against a forecast of 4%. Public sector investment growth is currently put at 12%, compared with the 10½% ministry forecast at the beginning of the year.

According to the budget for 2004, Treasury revenues excluding privatisation proceeds will increase 4½% year-on-year, while expenditures will go down by 1%. Given the estimated 3% rise in the price level, this entails a sizeable drop in expenditure in real terms, largely accounted for on the investment side. Investment outlays were equivalent to 2.6% of GDP in 2003, the highest proportion since the contraction period of 1992-1995.



The projected increase in revenues is relatively modest considering the macroeconomic outlook, especially given that tax revenues rose in 2003. In 2004, the Treasury balance is estimated at 5½ b.kr., equivalent to ½% of GDP. Although small relative to output growth, this surplus will suffice to bring down net Treasury debt from 18½% to 17½% of GDP. The debt ratio has been almost halved in the space of ten years.

Due to changes in state accounting systems, data for public sector finances this year are unusually late and not fully comparable with previous years' data, especially on the expenditure side. Treasury tax revenues were 12% higher in January and February than in the corresponding months of 2003, and figures

should be more or less comparable. Expenditures after adjustment for the known impact of changes in accounting principles are down by more than 4%, although this figure is probably underestimated. If the current outlook remains unchanged, the Treasury surplus will be greater than forecast above, but it is still too early in the year to draw any firm conclusions.

This year, municipal revenues are expected to rise by 5-7% and expenditures by 4-5%, which marginally exceeds the increase in public consumption prices but less than the rise in wages. If forecasts hold good, the local government deficit will end up in the range of only 1-3 b.kr., equivalent to 0.1-0.4% of GDP. Based on output growth forecasts, net local government debt will remain unchanged at its current historical peak of 6.6% of GDP.

The welfare system is effectively a section of the Treasury, although it is entered separately in the national accounts. It has generally produced a surplus, i.e. revenues earmarked for the welfare system, in particular national insurance contributions, have exceeded outlays. This pattern is forecast to reverse this year. Thus the estimated public sector surplus is lower on an accruals basis than the combined central and local government balance, by just over 1 b.kr. Although the discrepancy is negligible, the position is not as strong as output growth could have warranted.

Financial conditions

An analysis of financial stability was published in March in *Monetary Bulletin* 2004/1. Its finding was that, for businesses, financial conditions in Iceland were rather more favourable at the beginning of March than in October 2003. Interest rates had edged downwards and equity prices risen. However, it was pointed out that the stronger króna had squeezed the export and traded goods sectors. Financial conditions for households were also deemed to have improved, due to interest rate and equity price trends as well as the appreciation of the króna, while for financial institutions they were broadly unchanged.

By and large, financial conditions probably continued to develop in the direction they have been moving since the autumn. No major changes have occurred over the 2½ months since these conclusions

were published. The Central Bank raised its policy interest rate on May 11, but inflation and inflation expectations have also edged upwards since March. Accordingly, the policy rate was lower in real terms in May than in March and April, but virtually unchanged against the averages over a longer period. (see Table 2).

The króna has weakened since March. Financial conditions for businesses have eased slightly as a result, since the higher export prices that the depreciation delivers in króna terms are thought to outweigh the increase in debt service. Recent exchange rate developments have been favourable for the export and traded goods sectors, but correspondingly negative for the financial conditions of importers and households.

For households, lower housing bond yields over the period have been a more important factor. Yields have been fairly volatile and dropped sharply in April, but have recently been broadly the same as when financial conditions were last assessed in March. In May the average housing bond yield was 0.1 percentage point lower than in March, and lending rates of commercial banks and savings banks have continued to inch downwards.

Equity prices have gone up since March, helping the financial conditions of companies that raise capital on the stock exchange. The extent of the improvement varies from one sector to the next, however. Households that own equities also experience a positive wealth effect from these rises.

Lending growth

The rapid growth in lending over the past year is partly explained by highly favourable financial conditions, especially for borrowing abroad. It has also been linked to corporate takeovers in Iceland, in which case it does not necessarily herald more investment and other activity. At the end of April, domestic lending by deposit money banks (DMBs) had grown by 23.5% year-on-year, or 21.6% after adjustment for the impact of exchange rate and price changes on the stock of loans indexed in these terms. Foreign lending and marketable securities increased by more, namely by 159% over the 12 months to April 2004.

It has previously been pointed out that part of the credit growth can be traced to financing by the domestic banking system for leveraged buyouts of

Table 2 Changes in financial conditions since the March 2004 forecast

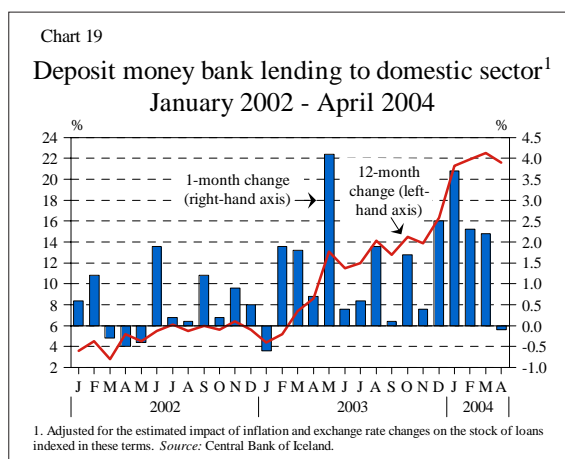
	4 weeks to March 10	4 weeks to May 19	Sectoral impact ¹			
			House- holds	Export and traded goods	Financial undertakings	Other business
Policy interest rate in real terms ²	2.5	2.6	-	-	-	-
CPI-indexed domestic interest rates (yield on 40-year housing bonds)	4.5	4.2	+	.	+/-	.
Average non-indexed domestic bank rates.....	11.5	11.3	+	+	.	+
Average CPI-indexed domestic bank rates	8.2	8.0	+	+	.	+
Foreign short-term interest rates ^{3,4}	1.6	1.7	-	-	-	-
Foreign long-term interest rates (10-year T-bonds) ³	4.0	4.4	-	-	-	-
Exchange rate index	119.9	123.7	+	-	+/-	+/-
Equity prices ⁵	2,505.8	2,695.9	+	+	+	+

1. '+' indicates more favourable financial conditions, '-' less favourable, '+/-' ambiguous and '.' not applicable. 2. Deflated by 3-year breakeven inflation rate. 3. Weighted with euro 2/3 and US dollar 1/3. 4. 3-month T-bills. 5. ICEX-15 index.

Icelandic companies and related restructuring projects both in Iceland and abroad. There are signs that Icelandic banks have been increasing their share in domestic corporate financing, especially in lending denominated in foreign currency. Increased intermediation of foreign credit is reflected in hefty growth in foreign liabilities of DMBs, an increase of 347 b.kr., or 75%, in the space of twelve months. If the above explanation is correct, the credit system as a whole ought to show less lending growth than the banks, but first-quarter lending figures will not be released until later in June. Insofar as such lending is not connected with new investment it does not necessarily signal the most common pattern, namely growth in domestic demand followed by inflation. Nonetheless, an indirect impact may be transmitted via asset prices and the wealth effect. Lending growth will have a limited effect only if the proceeds from corporate takeovers are deployed abroad rather than on domestic goods and services. Whether this will be the case is still unclear. Be that as it may, increased lending always carries an inherent financial risk.

Various statistical trends support the interpretation presented above. Firstly, DMB lending to households has grown less than lending to businesses over the twelve months to April 2004, at 16%. This has been offset by a considerable increase in lending by the Housing Financing Fund. Secondly, lending developments at individual banks are consistent with this interpretation. Thirdly, figures for April indicate

that the rate of growth is gradually slowing down: domestic lending (excluding the impact of exchange rate and price movements) remained unchanged during the month compared with an increase of more than 2% in March. While it is premature to ascertain that the change is permanent, if these signals have been read correctly lending growth should slow down as soon as the present round of boardroom battles comes to an end.



II Macroeconomic and inflation forecast

According to the Central Bank's new macroeconomic forecast for 2004 to 2006, the outlook is for robust output growth over the next few years, driven by heavy investment and buoyant private consumption. As early as this year the economy will come under strain which will intensify, all things being equal, later on. Inflationary pressures will therefore build up. Higher inflation is more likely in the short term than in the longer run, for reasons including high oil prices. While oil price developments are fairly uncertain at present, the forecast assumes that this year's hikes will more or less be reversed in 2005. Uncertainty also surrounds near-term developments of housing prices, changes in which will have a considerable bearing on inflation. A hefty current account deficit will be run up for the next three years, partly attributable to aluminium-related investments. The part of the deficit originating with these projects will unwind when they come to an end, but rough estimates indicate that around half the current account deficit over the next two years can be directly attributed to imports for investment in these projects and their multiplier effect.

As usual, the forecast assumes that the exchange rate and policy interest rate remain unchanged over the forecast horizon. Both assumptions have changed since the last forecast in March. The exchange rate index is now set at 124, its value on May 12, which represents a depreciation of just over 3% from the March forecast, when a value of 120 was assumed (based on the exchange rate on February 27). A weaker króna stimulates demand for domestic factors of production, and temporarily drives up inflation through higher prices of imported goods and services in króna terms.

The Central Bank's policy interest rate was raised by 0.2 percentage points on May 11 this year and currently stands at 5.5%. A higher policy rate counteracts the expansionary and inflationary impact of a weaker exchange rate and dampens domestic demand and inflation in the longer term. The forecast also incorporates the Ministry of Finance's assumption on changes in Treasury expenditures, along with the tax cuts equal to 2½% of GDP in equal steps over the period 2005-7 which were announced in the government's most recent medium-term scenario.

Outlook for demand and output

Sharp rise in fuel prices this year

Marine export growth this year is broadly unchanged from the March forecast, at 6½% compared with 7% then, but for 2005 has been revised upwards to 3½% from 2%. Aluminium prices are still expected to be substantially higher this year than last year. A sizeable increase is also expected in 2005, while a drop was forecast in March. Prices of goods and services exports are now considered more likely to increase in 2004, although the forecast rise is only one-quarter of a percentage point. The most significant change in assumptions concerns fuel prices denominated in foreign currency. Fuel prices are expected to increase by 17½% year-on-year in 2004; the March forecast assumed they would go down by 5%.⁵ These hikes will unwind to a large degree next year, by an expected 16%, and by a further 8% in 2006. All told, these changes imply that the terms of trade will deteriorate by just under 2% this year, then improve by just over 1% next year.

Robust growth of private consumption and investment will continue

Most indicators point to robust growth of private consumption this year. The forecast for private consumption growth this year has been revised upwards by half a percentage point to 5½%. The greatest revision to the macroeconomic forecast for 2004 is on the investment side. In March, housing investment was forecast to increase by 4½% from last year. Now the outlook is for housing investment to swell by 12% year-on-year from 2003 to 2004. Some indicators even suggest a higher growth rate. The forecast for industrial investment has also been revised upwards. Excluding power-intensive projects, ships and aircraft, industrial investment is now forecast to increase by 7½%, and gross fixed capital formation by 17%, up from the 13% forecast in March. National expenditure will therefore grow by 7% in 2004, over one percentage point more than forecast in March.

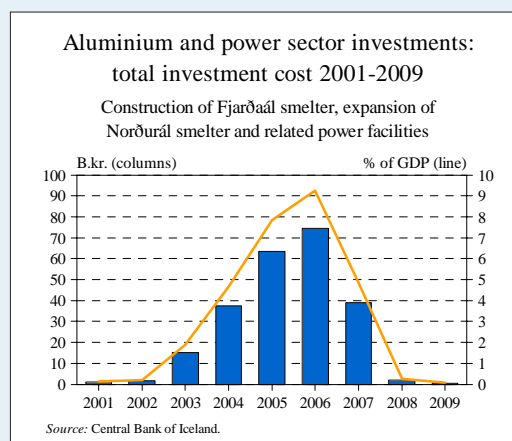
The upward revision of forecast gross fixed capital formation and private consumption is accom-

5. In all cases, prices in foreign currencies are calculated using the weighted currency basket. In US dollar terms, fuel prices have increased by even more.

Box 3 Aluminium and power sector investments¹

Large-scale construction work will get under way this year on the Kárahnjúkar hydropower station in east Iceland and geothermal power stations at Reykjanes and Hellisheiði in southwest Iceland. Estimated investment will amount to 27 b.kr. and well over 1,000 people will be employed at the height of activity during the year. Work will also begin on the expansion to the Norðurál smelter (southwest Iceland) and construction of the Alcoa (Fjarðaál) smelter in Reyðarfjörður, east Iceland. This year's investment cost for the smelters is estimated at almost 11 b.kr. Combined investments on power facilities and smelters will peak in the following two years, for an estimated 63 b.kr. in 2005 and 75 b.kr. in 2006. The total cost of the Fjarðaál smelter and Norðurál expansion, together with power facilities to supply them, is thus expected to reach 138 b.kr. in all in 2005-2006. Total investment cost has been revised upwards since the last *Monetary Bulletin* was published in March. Cost estimates have changed, and so have assumptions about the exchange rate and price level. Most of the additional 15 b.kr. cost is in connection with Fjarðaál, and there has also been some rescheduling between the years. Construction activity on smelters and related power facilities will peak in 2006, when the investment costs are estimated at the equivalent of more than 9% of GDP (based on GDP in 2003). Some 43% of total costs are expected to be

domestic and 57% in the form of imported goods and services. All the projects are labour-intensive, requiring around 8,000 man-years. Labour use will peak in 2005 at 2,600 man-years, which is equivalent to 1.7% of the total labour supply (2003 as the base year), and require a further 2,100 man-years in 2006 (1.3% of total labour supply). The majority of the labour force (53%) is expected to be foreign, and a much larger proportion of imported labour will be employed at Kárahnjúkar than on the Hellisheiði and Reykjanes geothermal projects and on smelter construction.



Total investment cost and labour use of power station and aluminium smelter investments 2002-2009

	Weight	2002	2003	2004	2005	2006	2007	2008	2009	Total
Total investment cost (m.kr.) ..	.	1,739	15,195	37,577	63,345	74,585	3,901	2,052	540	235,154
Domestic.....	43%	804	6,776	1,653	27,636	30,863	15,991	903	238	100,233
Foreign	57%	935	8,419	21,048	35,709	43,722	23,019	1,149	303	134,921
Man-years .....	.	84	706	1,634	2,593	2,121	600	32	23	7,835
Domestic labour	47%	78	275	712	1,298	936	255	30	22	3,649
Foreign labour	53%	6	431	922	1,296	1,184	345	2	1	4,187

Source: Central Bank of Iceland.

1. Based on data from the project developers.

Table 3 Main assumptions of the Central Bank macroeconomic and inflation forecast

	Current forecast			Change from previous forecast ¹	
	2004	2005	2006	2004	2005
<i>Policy rate and exchange rate²</i>					
Central Bank policy interest rate (%).....	5.4	5.5	5.5	0.1	0.2
Foreign exchange index ³	123.0	124.0	124.0	2.5	3.3
<i>External conditions (% change from a year before, except for interest rates)</i>					
Marine production for export	6½	3½	2	-½	1½
Prices of marine products ⁴	-3½	2	2	-	-
Aluminium prices ⁴	11¾	5	3	1	8
General import prices ⁴	-½	1¾	2	-	-
Fuel prices ⁴	17½	-16¼	-8	22½	-5¼
Prices of exported goods and services ⁴	¼	2¼	1¾	2¼	1
Terms of trade for goods and services.....	-1¾	1¼	¼	-2	1
Foreign short-term interest rates (%).....	2½	3½	4	-	-

1. '-' indicates no change. 2. Annual averages, assuming unchanged interest rates and exchange rate from the day of forecast 3. Percentage-point change in index from previous forecast. 4. Measured in foreign currency.

panied by a rise in imports, amounting to almost 12% this year. This year's GDP growth is forecast at 4¼%, which is three-quarters of a percentage point above the March forecast.

After the Central Bank published its forecast in March, Statistics Iceland released its provisional national accounts for 2003. These reveal that output growth in 2003 reached 4%, compared with 2¾% in the Bank's March forecast. It is now assumed that the negative output gap that developed in 2002 had virtually closed by the end of last year. Robust growth will continue this year. Thus the output gap estimate for this year has been revised upwards from ¼% to ¾%, the equivalent of ½% of GDP.

Pressures will build up in the economy over the next few years

Over the next few years, investment in the aluminium and power sectors looks set to gain momentum. Total investment will amount to 38 b.kr. this year, 63 b.kr. next year and 75 b.kr. in 2006. Rapid growth of private consumption is forecast over the same period, amounting to more than 6% in 2005 and more than 5% in 2006. Strong pressure is therefore foreseeable on the demand side over the period. The output gap will turn slightly positive in 2004 and widen over the following two years, to 1½% in 2005 and more than

2% in 2006, according to the forecast. It should be pointed out that estimates of the current and near-term output gap are subject to even more uncertainty than forecasts for various other aggregates.

Buoyant demand in the goods and services markets will bring down unemployment. Typically, unemployment lags behind the business cycle. Thus there is nothing unusual about unemployment peaking last year while the output gap reached a trough in 2002. According to the current forecast, unemployment will average 3% this year and drop to 2% in

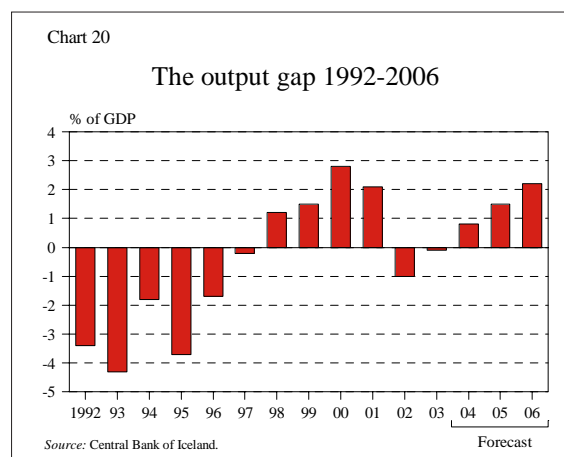


Table 4 Central Bank macroeconomic forecast

	<i>Billion krónur at current prices</i>			<i>Volume change on previous year (%)¹</i>			<i>Change since previous forecast (percentage points)¹</i>	
	2004	2005	2006	2004	2005	2006	2004	2005
<i>GDP and its main components</i>								
Private consumption	487.7	535.2	579.9	5½	6¼	5¼	½	¼
Public consumption	222.9	238.1	254.3	½	2	2	-¼	-
Gross fixed capital formation.....	211.2	253.8	281.8	17	15¾	6½	4	6¾
Industries	130.1	169.5	189.5	30¼	24¾	7¼	4¼	11¼
Excl. power-intensive projects, ships and aircraft	79.4	88.3	98.5	7½	6½	7	5	4
Residential housing	52.3	56.7	61.0	12	4	3	7½	-
Public investment	28.9	27.6	31.4	-17	-8½	9	-1	-5
National expenditure	921.9	1,027.2	1,116.1	7	7¾	5	1¼	2
Exports of goods and services	297.6	318.8	343.6	5	4	6	1	-½
Imports of goods and services	353.2	401.0	435.4	11¾	11½	7	2¼	3½
Gross domestic product	866.3	945.0	1,024.3	4¼	4¼	4½	¾	¼
				<i>% of GDP</i>			<i>Change since previous forecast (percentage points)¹</i>	
Current account balance .....	.	.	.	-8¾	-11½	-12	-1¼	-3¾
Gross national saving .....	.	.	.	15½	15½	15½	-	-½
Net external debt ² .....	.	.	.	103¾	108¾	113	.	.
International investment position ² .....	.	.	.	-71½	-78½	-85½	.	.
Output gap ³ .....	.	.	.	¾	1½	2¼	½	-
				<i>%</i>			<i>Change since previous forecast (percentage points)¹</i>	
<i>Main labour market aggregates</i>								
Private sector wages, % change between annual averages.....				5	5½	5½	-	-
Labour productivity, % change between annual averages				2½	2	1½	½	½
Unemployment, % of labour force				3	2½	2	-	¼

1. ‘-’ indicates no change. 2. Net external debt and GDP are calculated at comparable SDR exchange rates. 3. As a proportion of production capacity in the economy.

2006, below what is widely held to be the equilibrium or natural rate of unemployment for Iceland. If this happens, there is a risk of mounting wage drift in that year.

The current account deficit widens sharply

Large-scale imports will result not only from investments in the aluminium industry, but also be driven by private consumption and other investment. Import growth will surge by almost 12% both this year and next year, then ease to 7% in 2006. Export growth will be much slower, although still close to

the average rate, in the range 4-6% p.a. over the forecast horizon. Consequently, the deficit on goods and services will increase. The current account deficit will widen by even more, since foreign interest rates can be expected to rise over the period, adding to the debt service burden and the deficit on income. All things being equal, a large current account deficit is forecast, equivalent to up to 12% of GDP for the next two years. On average, around one-third of the current account deficit over that period can be directly attributed to imports in connection with aluminium investments, or 27% this

year, 33% in 2005 and 33% in 2006. This proportion is lower than forecast in March due to revisions of other factors that impact the deficit, including higher debt service caused by foreign interest rate rises. Aluminium investments will also deliver an indirect stimulus to private consumption and output growth. Estimations indicate that, had the aluminium projects not gone ahead, the current account deficit over the next two years would have been equivalent to 6% of GDP. Although this figure provides some indication it should not be taken at face value, for example because of the great uncertainty about how much weaker the króna would have been in the absence of these projects.

The wide current account deficit will be accompanied by higher foreign debt and a downturn in the external position. Net foreign debt (i.e. foreign borrowing less claims on foreign borrowers), which was equivalent to just under 101% of GDP in 2003, will rise to 113% in 2006, according to the forecast. The net external position, which also incorporates direct and portfolio investments – including foreign equities and mutual fund units held by pension funds and other domestic investors – will deteriorate from a negative position equivalent to 67% of GDP last year to more than 85% in 2006. It is important to remember that the forecast for the current account deficit and debt position is based on the exchange rate and Central Bank policy interest rate remaining unchanged. If the development outlined above unfolds, however, the policy rate will be raised considerably, which will dampen domestic demand and reduce the current account deficit over time. The forecast underlines that a tighter stance will be needed in the medium term to rein back in the current account deficit and inflation.

Inflation outlook

Imported inflation will rise in the short run, but inflation in the longer term will be domestic

Major changes have taken place in underlying inflation conditions since the March forecast. The main factor at work is substantially higher fuel prices in world markets, which have prompted an upward revision of imported inflation this year. In 2005, however, imported inflation will develop broadly in line with the previous assumptions, since forwards prices

used in the forecast still reveal that the oil price hikes are expected to be reversed to a large extent.

This surge in imported inflation will drive up domestic inflation in the short run. The effect will be compounded by the recent depreciation of the króna and larger output gap this year and in 2003. Offsetting this, relative unit labour costs will rise by somewhat less until next year, following the revision of productivity developments for the period 2003-2005. Relative unit labour cost increases will nonetheless remain some way above the inflation target for the next two years. According to the current forecast, inflation will initially be and large be driven from abroad, while on a longer horizon the inflationary pressures will be of domestic origin, as in the March forecast.

The inflation outlook has become less favourable one year ahead, but on a longer horizon is broadly in line with the March forecast

The short-term inflation outlook has changed radically since the March forecast. There, inflation was expected to remain below the 2½% target towards the middle of next year, and just under 2% one year ahead. Given the major changes in assumptions described above, the inflation outlook has been revised upwards to around the upper tolerance limit of the target in the second half of 2004. One year ahead, inflation is now forecast at 4%.

However, the inflation rate will slow back down soon after the impact of the weaker króna and higher oil prices wears off. So the scenario two years ahead is broadly in line with recent forecasts. In March, for example, inflation was forecast at 2.9% two years ahead, but is now expected to be 2.6%. Thus the outlook is for inflation above the target across the forecast horizon, but noticeably highest in the near term. As before, inflation is likely to go on rising on an even longer horizon and exceed 3% again by mid-2006, if the monetary stance remains unchanged.

Uncertain inflation developments in the near future ...

As pointed out above, higher oil prices and the weakening of the króna have caused a temporary surge in inflation. In the near term, inflation developments will depend to some extent on whether these trends are reversed. Furthermore, some uncertainty surrounds housing price developments and how long

Table 5 Central Bank inflation forecast

%	Percentage change on previous quarter	Annualised quarterly change	Change on same quarter of previous year
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	0.3	1.1	2.1
2003:4	1.0	4.1	2.5
2004:1	0.3	1.3	2.1
2004:2	1.7	6.8	3.3
2004:3	1.0	4.0	4.0
2004:4	0.8	3.0	3.8
2005:1	0.7	2.7	4.1
2005:2	0.9	3.5	3.3
2005:3	0.7	2.7	3.0
2005:4	0.4	1.4	2.6
2006:1	0.7	2.7	2.6
2006:2	1.0	4.0	2.7

Figures indicate changes between quarterly averages of the consumer price index.

%	Change, year-on-year	Change within year
2001	6.7	9.4
2002	4.8	1.4
2003	2.1	2.4
2004	3.3	3.9
2005	3.2	2.5
2006	2.9	3.2

Shaded areas indicate forecast.

excess capacity will remain in the labour market. For all these factors, however, it is impossible to state the direction in which the uncertainty lies.

... but more upside risk on a longer horizon

On a longer horizon, there are more indications that inflationary pressures are underestimated than overestimated. For example, there is probably more risk of a too loose fiscal stance than a too restrictive one. Uncertainty about government plans for changes to housing finance arrangements point in the same direction. Another factor is whether a surge in infla-

tion in the near term could trigger a review of wage agreements. Finally, the inflation forecast assumes that recent oil price hikes will largely be reversed next year, although this is quite uncertain due to strong demand in the global economy and unrest in major oil-producing countries. Counteracting these uncertainties, the króna might regain its former strength as investment currency inflows move closer to their peak, which would ease inflationary pressures in the second half of the forecast period.

The balance of risk is symmetric in the short term but to the upside over a longer horizon

The conclusion is that the upside and downside risks to the inflation forecast for 2005 are broadly symmetric. On a longer horizon, however, the risk of inflationary pressures is on the upside. The balance of risk is roughly the same as for the forecast made in November 2003.

As before, estimates of forecast uncertainty based on historical forecast errors are 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 21 presents the estimated confidence intervals for the next two years. The entire shaded area shows the 90% confidence interval; the two darkest ranges show the corresponding 75% confidence interval and the darkest range shows the 50% confidence interval. The uncertainty increases over the horizon of the forecast, as reflected in the widening of the confidence intervals.⁶

Since the last formal risk analysis was produced, for the forecast published in November 2003, the probability that inflation one year ahead will be within the target has decreased significantly. Two years ahead, the probability is slightly greater. Similarly, there is less probability that inflation will remain within the tolerance limits in 2005, but a greater probability over a longer horizon.

6. 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.

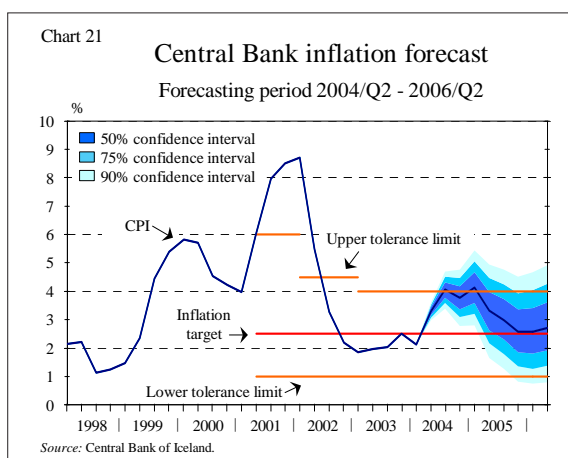


Table 6 Probability ranges for inflation over the next two years

Quarter	Inflation				
	under 1%	in the range 1% - 2½%	under 2½%	in the range 2½% - 4%	over 4%
2004:2	< 1	< 1	< 1	> 99	< 1
2005:1	< 1	2	2	42	56
2006:1	8	37	44	42	14

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

Box 4 Financial market analysts' assessments of the economic outlook

The accompanying table shows the forecasts of financial market analysts around the middle of May. Participants in the survey were the research departments of Íslandsbanki, KB banki and Landsbanki, and Economic Consulting and Forecasting.

Analysts forecast 2.9% inflation over 2004, which is a higher rate than in the last survey conducted in late

February, but below the 3.9% rate in the Bank's current forecast. Opinions are divided about inflation in 2005, but on average the analysts forecast a rate of 2.9%, which is broadly in line with the Bank's latest forecast of 2.5%. In terms of average year-on-year price changes, analysts are fairly unanimous that the rate will be close to or above the inflation target. The Bank fore-

Overview of forecasts by financial market analysts¹

	2004			2005		
	Average	Lowest	Highest	Average	Lowest	Highest
Inflation (within year)	2.9	2.5	3.3	2.9	2.3	3.2
Inflation (year-on-year)	2.8	2.6	2.9	2.9	2.6	3.0
GDP growth	3.9	3.7	4.3	4.7	4.2	5.0
	One year ahead			Two years ahead		
Effective exchange rate of foreign currencies vis-à-vis the króna (Dec. 31, 1991=100)	124	122	128	124	120	133
Central Bank policy interest rate	6.6	6.2	7.0	7.4	7.0	7.5
Nominal long-term interest rate ²	7.8	7.5	8.0	7.9	7.3	8.5
Real long-term interest rate ³	3.8	3.4	4.0	3.9	3.3	4.5
ICEX-15 share price index (12-month change)	4.3	0.0	10.0	13.8	10.0	20.0
Housing prices (12-month change)	5.3	4.0	7.0	8.0	0.0	12.0

1. The table shows percentage changes between periods, except for interest rates (percentages) and the exchange rate index for foreign currencies (index points). Participants in the survey were the research departments of Íslandsbanki, KB banki and Landsbanki, and Economic Consulting and Forecasting.
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 authority bonds (IBN 38 0101). Source: Central Bank of Iceland.

casts somewhat higher inflation year-on-year, at just above 3% in both 2004 and 2005. In comparing these figures it should be borne in mind that the Bank's forecast is based on an unchanged policy interest rate while analysts assume that it will be raised, which other things being equal will lead to lower inflation. The policy interest rate will of course rise over the forecast horizon, making the Bank's forecast less likely to hold.

Analysts have broadly the same outlook for growth. They forecast marginally less growth (3.9% on average) for 2004 than the Bank, which since March has revised its forecast upwards by three-quarters of a percentage point to 4¼%. For 2005, the financial analysts forecast growth of almost 5% and the Bank 4½%.

On average, respondents expect little change in the exchange rate of the króna twelve months ahead, forecasting an index value of 124. This represents a minor weakening from their previous forecasts in February, reflecting exchange rate developments since that time.

Two years ahead, they expect the króna to remain unchanged on average, but differ about whether a minor weakening or strengthening will take place, forecasting index values ranging from a high of 133 to a low of 120.

Analysts are unanimous in expecting the Central Bank to continue to raise its policy interest rate. They all forecast a policy rate in the range 7-7.5% two years ahead, but disagree about how quickly the Central Bank will announce its hikes. One year ahead their forecast range is much wider, from 6.2% to 7%.

Equity prices are expected to rise by an average of just over 4% over the coming twelve months, but forecasts differ, ranging from zero to 10%. All forecasters expect equity price increases of 10-20% on a two-year horizon. Likewise, they all forecast that real estate prices will continue to climb over the next twelve months, but disagree about the scenario two years ahead.

III Monetary policy

Interest rates have fallen in real terms despite the recent policy rate hike

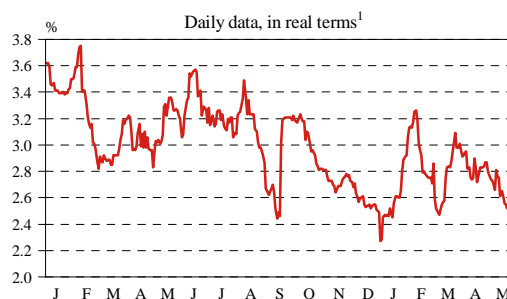
The Central Bank of Iceland raised its policy interest rate by 0.2 percentage points to 5.5% with an announcement on May 6. This marked the beginning of a period of tighter monetary policy that the Bank had said for some time was pending in response to mounting domestic demand and the prospect that inflation would move above target later in the forecast horizon. Critical assumptions in the March inflation forecast, such as the Norðurál aluminium smelter expansion and robust domestic demand growth, had been confirmed by then and the inflation outlook for the next few months had been darkened by the depreciation of the króna and by falling long-term interest rates, which drove up the housing price component of the CPI. Higher global oil prices also looked set to drive inflation above the rate forecast in March, but the initial impact of this factor is ignored in monetary policy formulation.

The rise in the CPI in May turned out to be more than expected, but the breakeven inflation rate on Treasury bonds indicates higher inflation expectations before the release of the index in May. Al-

though the breakeven inflation rate has decreased since then, real interest rates deflated by the three-year breakeven rate were still lower in mid-May than in the middle of March when the last inflation forecast was published (see Chart 22). This indicates that the policy rate needs to be raised further. In addition, the overall financial conditions of businesses and households are likely to have improved since earlier this year, because long-term interest rates have gone down, the króna has depreciated and equity prices

Chart 22

Central Bank policy interest rate January 3, 2003 - May 19, 2004



1. Based on the breakeven inflation rate. Source: Central Bank of Iceland.

have been on the increase. Higher real estate prices also fuel domestic demand growth.

Inflation forecast calls for further interest rate rises

Other things being equal, the macroeconomic and inflation forecast published here calls for further rises in interest rates in the near future. The output gap is now forecast to turn positive sooner than was previously assumed, in line with higher-than-expected growth of output and domestic demand recently. Next year's inflation outlook has also worsened substantially, as a result of the weaker króna and higher oil and commodity prices in global markets. According to the forecast, inflation will be close to the upper tolerance limits of the target in the second half of 2005, all things being equal. Naturally this outlook is uncertain and could improve significantly in the event of, for example, an unexpectedly large drop in oil prices, an appreciation of the króna or a fall in housing prices. While such a development cannot be ruled out, any or all of these factors could turn in the opposite direction. It should also be borne in mind that the development of the exchange rate and housing prices in the near term depends, among other things, on the monetary stance. As a rule there is a negative short-term correlation between interest rates and housing prices. Compounding this, a rise in short-term interest rates, and the temporarily higher long-term rates accompanying it would, all things being equal, cause a drop in the value of the CPI housing component, as described in Appendix 1 on measurements of real estate prices in Iceland. The reason is that the interest rates used to calculate the cash price of transacted real estate are more volatile than those used to calculate interest costs on housing, (see Appendix 1).

Further ahead, inflation will slow down somewhat, other things being equal, but still remain almost half a percentage point above the target in Q3/2005 and marginally above it in the first half of 2006 – assuming that the monetary stance remains unchanged. Likewise, the long-term balance of risk for the inflation forecast is to the upside. All in all, there are grounds for tightening the monetary stance over the next few months.

Lower long-term interest rates are desirable in the long run but could require a tightening of the monetary stance in the short term

In the first half of May, CPI-indexed long-term interest rates were 0.4-0.5 percentage points lower than in January. Part of this reduction can be attributed to the adjustment of Icelandic long-term rates to foreign rates which has been going on for several years. Systemic reforms which will make price-indexed housing authority bonds more liquid will help this trend along, by lowering the liquidity risk premium. On a longer view this is a positive development, reflecting closer integration of the Icelandic and global economy and financial markets, and will boost output growth, at least for a while. However, it also poses a risk stemming from the volatility of cross-border capital movements, and this calls for greater vigilance and increases the importance of credible economic policies which promote stability. Also, a reduction in long-term interest rates delivers a stimulus to demand, at least temporarily, which could be inappropriate if demand is already excessive or is rapidly heading in that direction. This could require a monetary policy response.

An evaluation of the potential scale of this impact is useful. On the basis of the Central Bank's macroeconomic model, if a 0.4-0.5 percentage-point reduction in long-term interest rates is not reversed over the forecast period, it could raise output growth over the following two years by 0.3-0.4 percentage points and inflation by 0.4-0.5 percentage points. Calculations also indicate that, in order to cancel out this impact, the policy rate would need to be more than half a percentage point higher than otherwise over the period.

Soaring demand and a wide current account deficit over the next two years call for more vigilant economic policies

According to the current macroeconomic forecast, national expenditure will grow significantly faster than output growth this year and in 2005. Imports will soar as a result, by almost 11% annually. Furthermore, the balance on income will deteriorate due to increased external debt and higher foreign interest rates. In consequence, the current account deficit will widen to 11-12% in both 2005 and 2006. It must be remembered, however, that the forecast assumes an

unchanged exchange rate and policy interest rate, which of course will never be the case. All things being equal, a rise in interest rates will temporarily strengthen the króna, thereby compounding the current account deficit, but the impact on domestic demand will gradually carry more weight, causing the current account deficit to narrow again. A crucial factor of course is that since much of the deficit can be directly or indirectly attributed to investments in the aluminium industry, it will shrink when the programme is completed and aluminium exports commence. Nonetheless, this outlook gives full grounds for a vigilant approach to economic policy. A strong currency and widening current account deficit will keep inflation temporarily in check, leaving a risk that the full force of hidden inflation pressures will be felt when the króna depreciates and the current

account deficit is reversed. Greater external indebtedness also poses a risk to the economy. The inflation target obliges the Central Bank to focus primarily on monetary policy formulation. Strain on monetary policy leads to higher interest rates and a stronger currency than would otherwise be the case, squeezes the export and traded goods sectors and widens the current account deficit in the short run. So a tighter fiscal stance than assumed in this forecast would be needed in 2005 and 2006. The forecast is based on announcements of tax cuts amounting to the equivalent of 2½% of GDP in total in equal steps over the period 2005 to 2007, and budgeted expenditures. Macroeconomic conditions, on the other hand, require a tightening rather than an easing of the fiscal stance. Tax reductions therefore require cuts in public sector expenditure.

Appendix 1 Housing price indices – measurement methodologies

In recent months the housing component of the CPI has risen by far more than most other components of the index. Over the twelve months to May 2004, the “housing, heating and electricity” component increased by 7.8%. Excluding housing, the CPI rose by 2.2% over the same period, and the entire index by 3.2%. The items that explain the lion’s share of this surge in housing costs are “paid rent”, which rose by 7.2%, and “owner-equivalent rent”, which went up by 9.6%. What makes the latter item important is its weight in the CPI – more than 10%.

Changes in the price of “paid rent” are based on direct checks of changes in the rents that tenants pay for the use of housing. “Owner-equivalent rent” is an imputed measure of the housing costs incurred by the more than 80% of Icelanders who live in owner-occupied dwellings. It therefore needs to incorporate not only changes in market prices of housing, but also other factors affecting the cost of owner-occupancy, e.g. financing costs and depreciation. This appendix attempts to explain how owner-equivalent rent is calculated.¹

Purchase price of housing

Copies of all sales deeds for residential housing are submitted to the Land Registry. Deeds state the purchase price of the housing together with provisions on the liabilities undertaken by the buyer. These liabilities take four forms:

1. The buyer makes a cash payment on signing the deed of sale. If the buyer has taken a loan from a pension fund or a bank for the cash down-payment, it is classified here. So are supplementary loans from the Housing Financing Fund, which are not disbursed with a swappable mortgage bond but paid out in cash.²

2. The buyer commits to make payments at one or more dates in the near future, rarely more than one year ahead.
3. The buyer transfers bonds to the seller. These are generally housing bonds. When the buyer takes a loan from the Housing Financing Fund, the Fund issues the seller with housing bonds in return.
4. The buyer assumes the seller’s financial obligations in connection with the property.

According to the deed of sale, the purchase price is equivalent to the total nominal value of payments according to items 1 and 2 above, the nominal value of the housing bonds received by the seller under item 3 and the total current value of the principal of the financial obligations taken over by the buyer according to item 4.

For a realistic picture of the cost of owner-occupied housing, it is not enough to consider merely the buying price. The cost also depends on the scheduling of payments under item 2, the discount on housing bonds paid according to item 3 and the interest terms of the obligations taken over by the buyer under item 4. To produce a realistic evaluation of the cost of owner-occupied housing, the Land Registry revalues all payments according to the deed of sale at present discounted value.

Cash price of housing

Since payments under item 1 are made in cash, they do not need to be revalued at present discounted value. The Land Registry uses overdraft interest rates to calculate the present discounted value of payments according to item 2. Currently, the first two items account for an average of 40% of the total value of a property.

The Land Registry uses the market yield on housing bonds plus a premium of 0.35% when it calculates the present discounted value of payments according to items 3 and 4. Its calculations are based

1. Calculation of the housing component of the CPI was discussed in *Monetary Bulletin* 2003/4, in Box 1 on pp. 6-7 and Box 5, pp. 39-40.

2. The same will apply to all other Housing Financing Fund loans after July 1 this year, when the Fund’s new financing arrangements take effect. New loans will then be treated as down-payments to seal sales contracts, since after that date the Fund will pay for mortgage bonds with cash, rather than swapping them for housing bonds. Hence, after

July 1 only liabilities that are taken over will be valued at present discounted value.

on the inflation-adjusted value of payments in connection with these obligations and the real yield on housing bonds. An effort is made to prevent calculations from being distorted by short-term fluctuations in yields. The premium of 0.35% is the same as the spread between real interest rates on Housing Financing Fund mortgage bonds (5.1%) and on housing bonds (4.75%). The yield as per items 3 and 4 is reviewed monthly.

One exception is made to this principle. When loans that are taken over have a low priority of lien and the loan-to-value ratio exceeds the level that the Housing Financing Fund allows in its lending to ordinary homebuyers, the interest charged by banks for such loans at the time the transaction takes place is used for discounting.

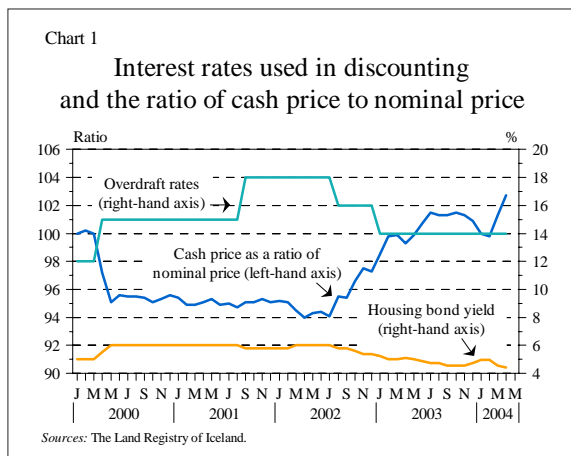


Chart 1 shows how the ratio of cash price and purchase price of housing were affected by changes in the interest rates that the Land Registry uses to discount payments.³

From January 2000 to January 2001, contractual purchase prices rose by 16.7%. At the same time, overdraft interest rates increased from 12% to 15% and housing bond yields from 5% to 6%. These increases raised cash prices by 11.4% over the period, which is significantly less than the rise in purchase prices. From the peak in interest rates in March

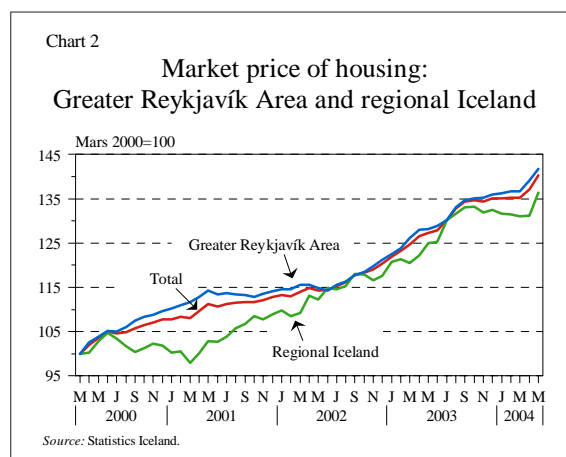
3. The chart uses data from the Land Registry. There may be a difference in the relative weights of the various housing categories compared with Statistics Iceland's methodology, but presumably only a slight one.

2002, purchase prices increased by 14.6% until April 2004 but the cash price by 24.6%. Statistics Iceland bases its calculations of "owner-equivalent rent" on the cash price of housing. This difference of 10 percentage points between the increases in the cash price of housing and in purchase price corresponds to a 1 percentage-point rise in the CPI over the period. When housing bond yields went down from 4.95% in January 2004 to 4.40% in April, this caused cash prices to rise by 6.6% but contractual purchase prices by 3.8%.

Relative weights and other factors

The Land Registry calculates the cash price per square metre for several categories of residential housing. Deeds of sale are classified according to whether the housing is in the Greater Reykjavik Area or in the regions, and whether it is detached or multiresidential (i.e. an apartment). Each category is divided into four subcategories by size. The average price per square metre is then calculated for each subcategory.

Statistics Iceland uses the Land Registry's data for average price per square metre in its calculations of owner-equivalent rent. Some lag is inevitable in processing of data from deeds of sale: one month for prices in the Greater Reykjavik Area and two months for regional prices. To reduce the probability that differences in the characteristics of the housing sold will influence the estimate of the price, three-month averages are used. Thus the housing price in the Greater Reykjavik Area used for calculating the May CPI was the average price of housing sold in the period January to March.



Statistics Iceland weights the average price in each category by the number of transactions in the respective category over a three-year period. Recently the following weights were used: Detached housing in the Greater Reykjavík Area 13%, apartments in the Greater Reykjavík Area 59%, detached housing in regional Iceland 15% and apartments in regional Iceland 13%.

Chart 2 shows the development of cash prices for housing by location, from March 2000 to May 2004.

Housing price developments diverge sharply depending upon location. Over the four-year period examined here, however, the difference seems more pronounced in the short term than the long run.

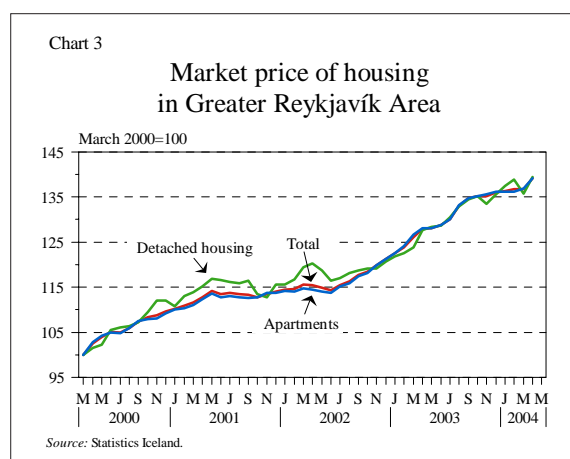


Chart 3 shows the development of cash prices for housing in the Greater Reykjavík Area, broken down into detached housing and apartments, also over the period March 2000 to May 2004.

Chart 3 does not reveal any significant divergence between price developments for detached housing and apartments, except in the very short run. The main difference seems to be that detached housing prices develop more unevenly. To some extent this probably reflects the diversity of detached housing, which poses a risk that changes in the composition of properties sold in any given period will influence the average price per square metre. This is especially likely when calculations are based on relatively few properties.

Calculation of owner-equivalent rent

Estimations of the annual user cost of housing require assumptions to be made about the lifetime of the asset (and thereby annual depreciation) and interest expenses on account of capital deployed in it. Statistics Iceland assumes that housing has a lifetime of 67 years (with depreciation of 1.5% per year) and the value of the plot of land remains unchanged. For the sake of simplification, the combined value of the housing and plot of land are treated like an asset with a lifetime of 80 years (depreciated by 1.25% per year). Interest cost on owner-occupied housing is calculated in two ways: using real rates of interest on collateral loans, and 3% real interest on the part of the value of the housing which is classified as owner's equity.⁴ The former alter in line with the terms of the loans specified in the housing sale agreement. Real interest on owner's equity is based on the long-term yield used in calculations of the pension funds' solvency. This yield changes very seldom. Recently, owners' equity has accounted for just over half the value of housing, and average real interest rates have been just over 5%.

Assuming a cash price of owner-occupied housing (S), its lifetime ($n = 80$) and real interest (r), owner-equivalent rent is equal to the payment needed to pay off an annuity loan in the amount S , bearing r real interest, over n years. The following equation produces the annual payment (L) of such a loan: $L = r \cdot S [1 - (1 + r)^{-n}]^{-1}$. This formula can be approximated by $L = r \cdot S$ when $n=80$ and r is not a very low figure, e.g. $r > 2.5\%$.

The impact of interest rate changes

The above discussion shows that interest rates have a range of effects on owner-equivalent rent. They influence both the cash price (S) and real interest rates on collateral loans (r). However, there are instances where interest rates formally impact only one of the two aggregates. A reduction in overdraft rates, for example, causes S to rise but leaves r unchanged, thereby increasing the value of owner-equivalent

4. Other countries which follow this method for estimating owner-occupancy cost use nominal interest rates instead of the real rates used by Statistics Iceland. These countries are Finland, Sweden, Ireland, the UK and Canada. Long-term lending is generally at nominal rates in these countries, but is indexed on loans in virtually all cases in Iceland.

rent. A change in the market yield on housing bonds also affects S without directly altering r , raising owner-equivalent rent as well. On the other hand, if real interest rates on Housing Financing Fund mortgage bonds decrease without driving down housing bond yields or other market rates, r would decrease too. S would also go down by the equivalent of the payments on these loans. Such a reduction in interest rates would therefore produce a lower value for owner-equivalent rent.

Although movements in interest rates and yields in the market are independent of each other in the short run, in an active financial market they can be expected to have a close long-term correlation. A long-term correlation presumably exists between bond yields, pension fund loans, mortgage rates charged by banks and other credit undertakings, and short-term interest such as overdraft rates. A broad change in interest rates is therefore conceivable without causing any shift in the relative values of individual investment options. Such a change in the interest rate of all loans leaves S unaffected because the interest rates that the borrower has to pay change in tandem with those used in discounting. The part of r that is determined by housing loan rates will change, while the interest on homeowners' equity will not. A rise in real interest (r) from 4% to 4.5% (i.e. a rise in real interest on housing loans from 5% to 6% while interest on the owner's equity is fixed at 3%) will lead to a 14% rise in owner-equivalent rent.

This example assumes that all interest rates would change consistently apart from owner's equity, i.e. all rates on all lending for housing purchases (both new and in the secondary market) would change in the same way as yields in the bond market. Of course such an assumption is unrealistic except in the very long term. Although pension fund loans and bank

loans carry variable interest rates, these generally do not alter as quickly as bond market yields. Furthermore, a large proportion of loans carry fixed rates, such as those from the Housing Financing Fund. This leaves the interest rates that determine r , and also S to some extent, much stickier than those used to discount the value of housing sales agreements. Presumably this difference is the main driver of the impact that interest rates have on owner-equivalent rent in the CPI.

It should be pointed out that under the planned change in Housing Financing Fund lending arrangements, scheduled to take effect on July 1 this year, interest rates on new housing loans will reflect yields on the bonds that the Fund issues to finance them, plus a fixed premium, but will remain fixed for the maturity of the loans. Thus interest rates on new housing loans will change in pace with market yields on these bonds, which will presumably continue to be used to discount the value of deeds of sale. Older Housing Financing Fund loans, on the other hand, will remain fixed as before, with the result that the part of r that is determined by real interest rates on housing loans will continue to be much stickier than bond market yields, although to a slightly less extent.

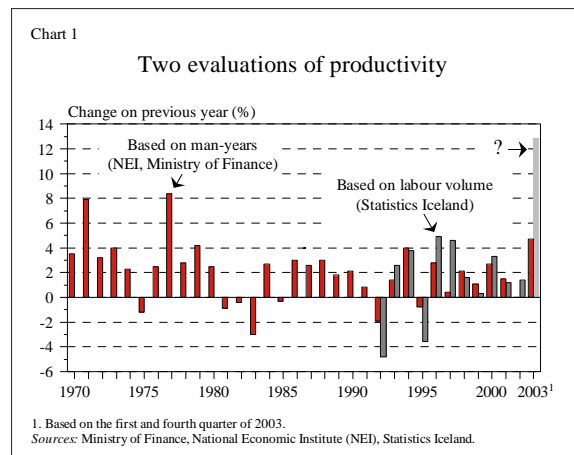
In conclusion, it should be underlined that the above discussion of the impact of interest rates assumes that housing purchase prices are independent of yields on housing bonds and other market interest rates. This assumption is supported by the empirical observation that nominal prices are sticky in many cases. However, there are also grounds for assuming that domestic interest rate levels affect housing prices. All things being equal, high interest rates should dampen demand for housing and bring down the purchase price.

Appendix 2 Was there a productivity miracle in 2003?

Output growth in 2003 measured 4%, according to the national accounts. The high rate of growth was a surprise, especially in view of declining rather than increasing labour use during the year. This robust growth and developments in the labour market imply a leap in labour productivity. In fact, above-average productivity growth is not abnormal at the beginning of an upswing. After weathering a contraction, businesses generally have considerable excess production capacity that enables them to step up production without recruiting labour. It is expensive to lay off employees to meet a short-lived slump in demand and to recruit when a recovery gets under way. Hence, it may be more cost-efficient to retain employees and reduce their working hours. In some cases a minimum staff level cannot be avoided. For example, shops need staff present even when business is slack for part of the day.

Although productivity growth at the start of an upswing may be natural for these reasons, a surge on last year's apparent scale should be viewed with caution. Measurements of both the denominator and numerator of the ratio known as labour productivity (production/labour force) are subject to considerable uncertainty. Soaring productivity may be the result of either overestimating output growth or underestimating labour use growth, or both. Chart 1 plots two measures of productivity (based on estimates by the National Economic Institute and later by the Ministry of Finance) applying two different measures of labour use, man-years worked over the period 1970-2003, and a measure of labour volume based on Statistics Iceland's labour market surveys from 1992-2003. It should be pointed out at the outset that figures for labour use in 2003 are not strictly comparable with those for previous years (see later). Apart from 2002, productivity trends move in the same direction regardless of which of the two evaluation methodologies is used. On the basis of labour market surveys of the number of employed in April and November 2002 and the first and last quarters of 2003, i.e. the periods that offer the best comparison year-on-year, productivity grew by almost 13% in 2003. No prior examples of productivity growth on such a scale are found

using the man-year data from the National Economic Institute and Ministry of Finance.



These measurements are subject to a range of uncertainties. The following discussion will attempt to shed light on these uncertainties from two angles. Firstly, by contemplating whether GDP growth last year might be substantially overestimated, and secondly, by highlighting the large uncertainty surrounding labour volume measurements.

Is growth overestimated?

GDP statistics are generally revised quite significantly in the first year after their publication and may not be finalised for several years. Iceland is not the only country to face the problem of fairly large revisions from first provisional estimates to final figures; initial GDP figures from Germany and Japan, for example, have been considered untrustworthy. The reliability of recent data showing robust growth in output and productivity in the US has also been questioned, prompted by exceptionally wide discrepancies between growth of industrial output and GDP, by the unusually large mismatch between the expenditure and income side of the national accounts, and by the paradox of a jobless recovery. One conceivable reason for overestimated GDP growth in the US is that the scope of outsourcing has been underestimated. Productivity growth may also be overestimated dur-

ing recoveries due to underestimated illegal immigration of labour (especially across the border from Mexico) when the economy picks up.

Output growth and year-on-year price changes

It is interesting to examine the breakdown of Iceland's GDP growth into price and volume components last year. Statistics Iceland estimates year-on-year GDP growth of 4.0% between 2002 and 2003, measured at fixed prices. At the same time, the GDP deflator decreased by 0.4%. If the data are correct, this was the first year-on-year decrease in the GDP deflator since 1947. By far the largest single component of domestic production is private consumption, with a weight of 55%. Statistics Iceland estimates that private consumption grew by 6.4%, measured at fixed prices, and private consumption prices by 0.5%. The change in the private consumption deflator invites comparison with the CPI, which rose by 2.0% year-on-year from 2002 to 2003, or by 1.5 percentage points more. As Table 1 shows, changes in the private consumption deflator and CPI are often out of line, but a difference of 1.5 percentage points is on the high side, especially considering the very low inflation rate. This might be simply a matter of different methodologies. The private consumption deflator is weighted with the contemporaneous composition of consumption, while the CPI uses historical weights. An appreciation of the exchange rate, as was experienced last year, in tandem with an increase in the share of imported goods, could explain the discrepancy.

Prices indices are only used to deflate certain sub-components, for example to derive estimates of volume on the basis of changes in turnover. If the year-on-year rise in the private consumption deflator from 2002 to 2003 is underestimated, the change in private consumption volume has probably been overestimated at the same time, and therefore output growth as well.

Table 1 shows the difference between changes in private consumption prices and the CPI. It also shows changes in the import-weighted exchange rate index. A clear correlation is visible between changes in the exchange rate and the difference between the two price indices. The correlation is also obvious from the year-or-year change in quarterly data, but this disappears almost entirely between consecutive quarters.

Table 1 Private consumption prices and the exchange rate

<i>Changes from previous year (%)</i>	<i>CPI</i>	<i>Private consumption deflator</i>	<i>Difference</i>	<i>Exchange rate index (import-weighted)</i>	<i>GDP deflator</i>
1998	1.7	0.9	-0.8	-1.9	4.9
1999	3.4	2.6	-0.9	-0.2	2.8
2000	5.0	4.4	-0.6	-0.7	2.9
2001	6.7	8.1	1.4	19.4	9.4
2002	4.8	3.7	-1.1	-2.4	5.3
2003	2.1	0.5	-1.5	-5.0	-0.4

Sources: Statistics Iceland and Central Bank of Iceland.

No judgement will be made here as to whether or not output growth, and thereby productivity growth, is overestimated in the national accounts. Certain aspects of the data indicate that the appreciation of the króna might have driven up measured output growth and vice versa; Iceland also faces a similar problem to other countries in measurements of imported services. A clearer picture should emerge with the next revision of the national accounts.

Is labour use in 2003 underestimated?

Let us now turn to the alternative possibility, that actual labour use was greater than in the measurements above. Great uncertainty surrounds these measurements, especially in the case of 2003. This applies to both criteria. The methodology used in estimating man-years has not been adequately described. Changes in the implementation of Statistics Iceland's labour market surveys last year have made comparisons with previous years less reliable than usual.

Over the period 1991-2002, Statistics Iceland conducted labour market surveys twice a year, in April and November. As of January 1, 2003 continuous surveying was introduced, i.e. the survey was spread evenly over the year and the results published on a quarterly basis. The two survey formats were not allowed to overlap in 2003, which would have been necessary in order to produce comparable data, with the result that the time series was broken. Since most labour market aggregates are subject to seasonal changes, a survey that is limited to two periods of two weeks a year, in April and November, can scarcely be compared with one conducted over the whole year.

An examination of the findings for hours worked or number of employed in 2003 shows a sizeable difference between the winter and summer quarters. The rise during Q2 and Q3 is largely explained by increased participation by students over the period May to August, as Table 2 shows. Although April is in Q2, labour participation then is more in line with the winter pattern than the summer. Thus the most natural approach is to compare the findings of previous labour market surveys with data from Q1 and Q4/2003.

Table 2 Hours worked and number of employed per quarter in 2003

<i>Total</i>	<i>Q1</i>	<i>Q2</i>	<i>Q3</i>	<i>Q4</i>
Hours worked in reference week	40.9	41.9	42.9	41.5
No. employed	151,800	159,800	162,900	153,200
<i>Of which aged 16-24</i>				
Hours worked	31.3	36.9	39.7	31.4
No. employed	22,300	26,200	29,100	22,300

Source: Statistics Iceland.

Despite the limited comparability of the old and new labour market survey data, the change is so sharp that a contraction in labour volume in 2003 seems likely. Although unemployment in Q1/2004 was down year-on-year according to the latest Statistics Iceland survey (the first for some while that enables such comparisons), labour volume hardly increased at

all. It seems almost certain that labour use contracted last year, when unemployment grew by almost 1% on average.¹ The extent is difficult to ascertain, however. A rough comparison of labour market surveys for 2002 and 2003, with all the reservations outlined above, could suggest that labour volume contracted between 4% and almost 8%, depending upon the definition of labour use.²

Such a large contraction is difficult to believe in light of the rate of output growth during the year, even if the lower of the two figures is applied. Other possible sources of underestimated labour use can be identified. It has been pointed out that the actual number of foreign workers employed at the Kárahnjúkar power station site is not known for certain, but could be in the region of 1,000. Since the labour market survey sample is taken from the national register, it would probably hardly cover this group, if at all. If so, labour volume may have shrunk by less than the poorly comparable surveys might lead one to conclude. Nonetheless, the number involved does not seem large enough to alter the finding that a contraction did in fact take place.

The conclusion from all the above is that much remains unclear about the productivity trend in 2003. Productivity probably increased by considerably more than during an average year, but there is reason to be sceptical that the surge was as large as calculations based on a rough comparison of labour market statistics would suggest.

1. The labour market surveys produce two kinds of evaluation of hours worked: by those who were present for work during the reference week, and by those who were present for or temporarily absent from work then. Similarly, data for the number of persons employed state the number who were at work during the reference week and the number in employment, i.e. either at work or temporarily absent. There are many possible explanations for temporary absence from formal employment, e.g. the weather, slack periods or the seasonal nature of the work. To prevent such fluctuations from distorting the comparison of labour use in 2002 and 2003, it is more appropriate to calculate labour volume on the basis of persons at work during the reference week.
2. Admittedly, it is not uncommon for labour market surveys to record rising unemployment even when employment begins to climb, because people who have withdrawn from the labour market during a period of contraction, and have stopped seeking work, begin looking again. Given the development in Q1/2004, however, this seems unlikely to have occurred last year.

Appendix 3 Forecast errors in Central Bank of Iceland inflation forecasts

The inflation forecast and analysis of economic prospects are one of the most important factors in the Central Bank's monetary decision-making process. Monetary policy actions can take up to one year to be transmitted with any real effect and up to two years before their impact is felt in full. Thus it is vital for the Bank to have the clearest possible view of the inflation trend and economic developments over that period.

Since the adoption of inflation targeting in March 2001, the Central Bank has published an inflation forecast two years ahead in Monetary Bulletin. Confidence intervals have been included with the forecast, since the great uncertainty surrounding economic developments would make a simple point forecast misleading. Confidence intervals take into account various uncertainties that could lead to substantial deviations from the point forecast. Among them are the global economic situation, exchange rate developments and various domestic aggregates. In evaluating inflation prospects two years ahead and possible monetary policy responses to it, the Central Bank also considers the risk profile of the forecast no less than the point forecast itself.

The inflation forecast is represented graphically in the form of a three-coloured fan chart. The darkest area of the fan chart is in the centre, where there is a 50% probability that inflation will fall in this range. It fans out into two lighter areas on either side show-

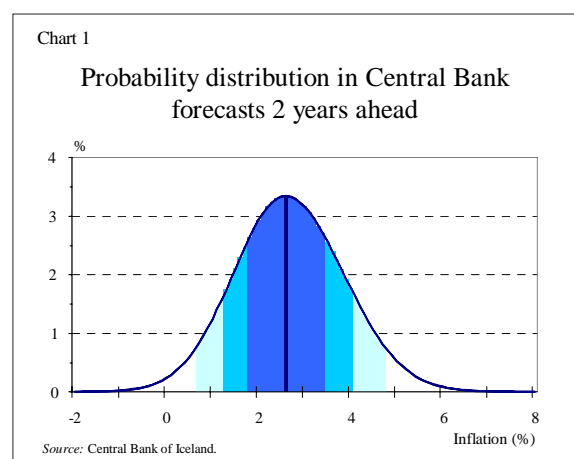
ing the 70% and 90% confidence interval respectively. The probability that inflation will fall outside the coloured range is 10%. Chart 1 shows the probability distribution for inflation on a two-year horizon, according to the Bank's latest forecast.

Table 1 Distribution of measured inflation based on inflation forecast confidence intervals

	No. of measurements	Within confidence interval		
		50%	75%	90%
Four quarters ahead	9	4	7	8
Eight quarters ahead	5	4	5	5

The Central Bank publishes a survey of its inflation forecasting errors once a year, most recently in *Monetary Bulletin* 2003/1. An analysis of the distribution of actual inflation across the confidence intervals has been made for the first time. Table 1 shows the proximity of the Central Bank's forecasts to measured inflation after inflation targeting was adopted in 2001. Nine forecasts four quarters ahead can therefore now be compared with measured inflation over the same period. Of these, four fell within the 50% confidence interval, seven within the 75% interval and eight within the 90% interval. One forecast fell outside the 90% confidence interval, produced just before the sharp depreciation in that year began. Distribution of forecasting errors therefore closely matches the given probability distribution. Only five forecasts over a horizon of eight quarters can be tested. Four turned out to fall within the 50% confidence interval and all five within 75%.

It would be rash to draw sweeping conclusions from so few data points. Nonetheless, the eight-quarter forecasts have been relatively close to the centre of the confidence interval. All forecasts are based on the assumption of an unchanged policy interest rate over the horizon. If a forecast indicates that inflation will deviate substantially from the target, the Bank is obliged to take measures to steer it back as close as possible. The rate of inflation was much higher than the Central Bank forecast in the initial period after



the inflation target was adopted, in particular because the exchange rate developed along completely different lines from the standard assumption that it would remain unchanged – in the event, the króna depreciated. However, a tightening of the monetary stance squeezed domestic demand and led to an appreciation of the króna, and inflation was fairly soon reined in.

Table 2 Central Bank forecasting errors following the adoption of inflation targeting

%	No. of measurements	Bias	RMSE
Four quarters ahead	9	0.13	1.46
Eight quarters ahead	5	0.60	0.67

The bias has been considerably smaller in forecasts four quarters ahead than over a longer horizon. Both the relatively small bias compared with longer forecasts, and the high root mean square error (RMSE), are caused by initial under-forecasting after the inflation target was adopted and over-forecasting in 2002 when inflation was brought to heel much earlier than the Bank had expected; these over- and undershoots cancel each other out. The RMSE in forecasts one year ahead is similar after the target was adopted (1.46) to that in forecasts from 1994 (1.63).

Chart 2 compares the Bank's forecasting errors with the average exchange rate over the forecasting period. There appears to be a fairly clear correlation

between changes in the exchange rate and forecasting errors. After it moved onto an inflation target, the Bank has published inflation forecasts with a two-year horizon. The horizon has been completed for the first five forecasts and their errors are compared with the change in average exchange rate over the same period. These forecasts are plotted on the chart with red squares. Blue diamonds show the errors in forecasts one year ahead and the corresponding change in the average exchange rate. In most of the forecasts, the error is fairly close to zero. Large errors are revealed in the forecasts from late in 2000 and in 2001, reflecting the sharp depreciation of the króna immediately after the monetary framework was changed. Two forecasts (Q4/1998 and Q1/1999) stand out for having large errors even though the exchange rate remained virtually unchanged over their horizon. At the time that these forecasts were produced, the Central Bank was developing inflation forecasting models to take fuller account of the macroeconomic impact of demand pressures, which were running high then but were beyond the scope of existing models. The new models were first run shortly afterwards and have been used ever since, with upgrading as needed. Apart from these two forecasts, the largest forecasting errors have occurred in periods of marked exchange rate volatility, which as the chart shows account for the greatest part of the deviation.

Table 3 shows the bias and RMSE in the Bank's forecasts since 1994. Both the bias and the RMSE rise in pace with the length of the forecast horizon, which is natural since the uncertainty increases further ahead. There are no indications of systematic under- or over-forecasting of inflation over this period.

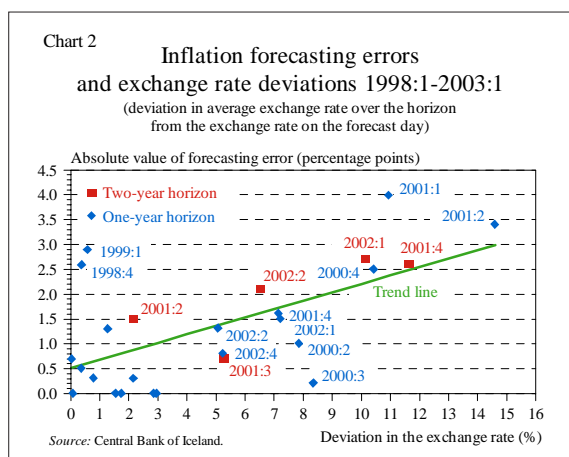


Table 3 Central Bank inflation forecasting errors

1994:1-2003:1	Forecast horizon			
	Q1	Q2	Q3	Q4
Bias	0.00	-0.07	-0.09	-0.19
RMSE	0.39	0.85	1.32	1.63