M O N E T A R Y B U L L E T I N

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Contents

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Icelandic letters: ð/Ð (pronounced like *th* in English *this*)
þ/Þ (pronounced like *th* in English *think*)

In Monetary Bulletin, *ð* is transliterated as *d* and *þ* as *th* in personal names, for consistency with international references, but otherwise the Icelandic letters are retained.

Symbols:

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

Introduction

The Board of Governors of the Central Bank of Iceland have decided to raise the Bank's policy interest rate by 0.5 percentage points on September 21. This is the fourth in a series of interest rate increases that the Bank considers necessary in response to soaring demand growth and to counter the impact that large-scale investments in the coming years will have on the economy and inflation outlook. In all, the Bank has raised its policy rate by 1.45 percentage points since May this year, and it will stand at 6.75% after the rise that has now been decided. This issue of *Monetary Bulletin* discusses how economic developments have unfolded and the circumstances underlying the Board of Governors' decision. It also includes an in-depth analysis of financial stability.

The economic outlook demands a tighter monetary stance

In *Monetary Bulletin* 2004/2, which was published at the beginning of June, the Central Bank presented its macroeconomic and inflation forecast which showed that inflation would accelerate, and move close to the upper tolerance limit of the inflation target, in the second half of this year and into 2005. The main forces driving inflation were identified as growing demand, the weakening of the króna and higher fuel prices. Since the forecast was published, developments have unfolded broadly in line with the assumptions on which it was based. As usual the forecast was based on technical assumptions of an unchanged policy interest rate and unchanged exchange rate over the forecasting period. In the period since the forecast was made, the króna has been on average just over 1% stronger than originally assumed. Changes in the exchange rate have therefore had little impact on the longer-term price outlook. The Central Bank has also raised its policy rate since the forecast was made.

Although inflation has approached the upper tolerance limit of the target earlier than was widely expected, the probability that it will exceed the limit as early as this year has also diminished. The crucial consideration is that the inflation outlook two years ahead appears to be broadly the same as it was at the beginning of June. However, there appears to be a risk of higher inflation in 2006 than was forecast in June, in light of the outlook for a rise in import prices which exceeds what was implied in the forecast. Domestic demand growth this year is also heading higher than in the macroeconomic forecast on which the inflation forecast was based. Demand growth over the next two years now appears more likely to exceed the June forecast. The impact of new price-indexed mortgage loans offered by the banks is still difficult to assess, but they are likely to stimulate demand.

One of the most intensive investment periods in Iceland's history lies ahead. The monetary stance will need to be very tight for its duration. It should also be taken into account that the impact of these investments will be felt beyond the horizon of the inflation forecast. Although the horizon of the Bank's forecast is roughly two years and monetary policy decisions are generally targeted at this timeframe, it must be taken into account that the risk of price instability may be at its highest towards the end of the investment phase, over the period 2006 to 2008. As usual, the price outlook is very much dependent on the króna remaining strong while investment activity is at its peak, thereby countering the inflationary impact of the widening output gap. Much also depends as to whether price assumptions on which wage settlements have been based hold good.

Seasonally adjusted unemployment has increased somewhat in recent months and employment decreased year-on-year in the first half of 2004. The extensive use of foreign labour for construction of the power station in east Iceland has also softened the project's impact on domestic wages. Nonetheless, it

would be rash to infer that there is enough excess capacity in the labour market to preclude the risk of wage drift when the investments gain momentum and projects are launched closer to the Greater Reykjavík Area, the heart of the Icelandic labour market. Subsequent bottlenecks in the labour market could prompt wage drift in certain sectors which would extend to other parts of the labour force. Furthermore, new data show a sizeable increase in the number of vacancies, especially in and around Reykjavík.

Considerable uncertainty surrounds the macroeconomic impact of the investment projects, including their effect on the exchange rate, although their scale is broadly known. Monetary policy decisions need to take this uncertainty into account, along with the fact that monetary policy cannot be used to fine-tune demand in the economy at any given stage of the investments. As pointed out in previous editions of *Monetary Bulletin,* the Central Bank does not see much risk stemming from a temporarily tighter monetary stance than is directly warranted by price developments and demand growth. Too lax a stance for most of the investment period, on the other hand, could have serious consequences. If an excessive output gap at the start of the investment phase causes inflation to climb once construction activity enters full swing, an even tighter stance may be required later, leading to a hard landing and problems for the financial system.

After the Central Bank produced its last forecast in May, the policy interest rate was raised by 0.75 percentage points in all, i.e. 0.25 percentage points at the beginning of June and 0.5 percentage points a month later. The Bank had already raised the policy rate by 0.2 percentage points in May. The policy rate hikes can be seen as the Bank's first steps in its efforts to ensure that the investment projects, which will intensify over the next two years, do not undermine price stability. By raising its policy rate, the Bank also responded to higher-than-expected demand growth and accelerating inflation. Although inflation was partly of external origin, beyond the control of the Central Bank, rapid demand growth also clearly contributed to it.

To some extent the increase in the policy rate now can be regarded as a response to growing inflation expectations, which had reduced it in real terms since the hike in June, and other changes affecting financial conditions. Since the policy rate was again raised in July, developments in the housing market have brought about a considerable reduction in mortgage interest rates. As a result of these developments, the financial conditions of households are probably easier now than when the Central Bank began raising its policy rate. Nor is it absolutely certain that the financial conditions of financial companies or other businesses are significantly tighter. Developments in the financial markets have therefore counteracted the Central Bank's measures in recent months. The Central Bank has to respond to this development, given that construction work on power stations and aluminium smelters will surge over the next few months. In part, the current policy rate increase aims to counter the easing of financial conditions that has been brought about by developments in recent months. However, this increase is not the Central Bank's final step in its measures to tighten the monetary stance sufficiently to keep inflation as close as possible to target in the coming years. Further interest rate rises may therefore be expected in the months to come, unless economic developments diverge quite substantially from the path suggested by economic indicators.

Fiscal policy and public sector finances in general will play a crucial role over the next few years. A tighter fiscal stance can reduce the probability that a very tight monetary stance will be needed, which could squeeze the competitive position of businesses and cause problems for them. If fiscal policy imposes an excessive burden on monetary policy, in the worst-case scenario this could undermine financial stability.

The financial system is fairly resilient in the face of macroeconomic imbalances

Financial stability over the coming years will be largely determined by how successfully the economy can be guided through the pending wave of large-scale investments. It is important to prevent the economy from overheating, with an accompanying upturn in inflation. Insofar as the economy is now entering this massive investment phase with rather higher inflation, a wider current account deficit and a more positive output gap than was assumed in the last financial stability report in March, the risks have increased somewhat.

Besides the intensifying investment projects, two factors warrant particular consideration. One is rapid lending growth and the growing indebtedness of both households and businesses, and the other is high asset prices. The risk accompanying this development is discussed in the financial stability report in this issue of *Monetary Bulletin*. International experience shows that, in combination, these two factors can pose risks to financial stability. Lending growth, largely funded from abroad, is still far more rapid than is compatible with stability in the long run. Although both household and business balance sheets have become more exposed to volatility in asset prices and exchange rates in recent years, their position seems strong at present. The planned extension of financing for homebuyers by the public Housing Financing Fund could raise household debt, and so could the commercial banks' and savings banks' recent offers of long-term mortgage loans at lower interest rates. Among businesses, debt continues to climb – part of it now driven by leveraged buyouts – but strong EBITDA boosts their resilience. The main concerns involve households' and businesses' ability to withstand major economic shocks, although these are unlikely over the next few years.

The position of financial companies was considered fairly solid in the last report made in March, and that assessment remains unchanged. Profitability of commercial banks and savings banks was on the whole robust in the first six months of this year and their capital ratios were relatively strong. Favourable price developments in domestic securities markets and position-taking are the main drivers of their profitability. Expansion abroad has broadened the banks' revenue base, but the bulk of their profits is still domestic in origin. Icelandic commercial banks have been determinedly expanding abroad in recent years. Internationalisation of banking has resulted in a raft of changes in the Central Bank's work and closer cooperation with participants in Iceland and abroad, although much clearly remains to be done in this respect. The Icelandic financial system has expanded its horizons and is becoming increasingly international in character and more dynamic.

The banks' large-scale foreign financing has been noted by domestic and international analysts of the Icelandic financial system. The Central Bank has urged the banks to pay careful attention to their funding and credit ratings. An important point was reached when the banks began lengthening the maturities of their foreign-denominated funding late last year, and for more than a year now their short-term borrowing has not increased. It is also reassuring to note that the banks' credit ratings have been upgraded over the past two years. In collaboration with the Financial Supervisory Authority (FME), the Central Bank held talks this summer with experts from the largest commercial banks on foreign currency liquidity management. An agreement was reached on the principles that contribute to sound practices for foreign currency liquidity management, and the FME will presumably issue guidelines to this effect.

In domestic securities markets, a number of changes have been made in trading and settlement implementation, and the efficiency of the markets has been put to the test over the past six months. Broadly speaking, the markets can be said to have passed that test. The same applies to payment system operations. Through the reforms made to the Icelandic payment systems in recent years, the Bank considers that significant progress has been made in limiting legal, default, liquidity and settlement risks. As far as the next steps are concerned, the Central Bank identifies both the opportunity and the need for careful consideration of operational risk in payment systems.

Financial stability has two aspects. One is the risks that the financial system faces, and the other is its resilience. Risk is always present, although it can be contained to a certain degree. Insofar as risk cannot be avoided, tasks for promoting financial stability must focus on strengthening the resilience of the system, i.e. promoting an efficient and safe financial system, as the Central Bank of Iceland Act says. It was foreseeable that macroeconomic imbalances would increase alongside the large-scale investments for the aluminium industry that have now been launched and will continue over the next few years. The risks posed to the financial system have grown accordingly. It is gratifying to note that the resilience of financial companies and markets has been increased at the same time and can be considered fairly strong at present.

Economic and monetary developments and prospects[1]

Inflation outlook similar to June forecast, but the risk of higher inflation in 2006 has increased

This issue of Monetary Bulletin *does not include a macroeconomic and inflation forecast. In January, the Central Bank announced that comprehensive macroeconomic and inflation forecasts will be published twice a year, instead of on a quarterly basis, in the June and December issues of* Monetary Bulletin. *Nonetheless, the Bank reviews its forecasts at least four times a year. A review of the forecasts that the Bank published in the beginning of June does not give grounds for expecting a substantial divergence from the forecast. Inflation had approached the upper tolerance limit of the target (4%) somewhat earlier than had been expected, but broadly speaking developments have unfolded in line with the inflation forecast. The exchange rate of the króna has not changed much but is slightly stronger than when the forecast was made, which will counteract inflation in the short run. The long-term outlook for import price developments has worsened, however, which other things being equal increases the upside risk to the June forecast for inflation in the second half of 2005 and in 2006. Since the Bank produced its macroeconomic forecast in June, the national accounts for the first two quarters have been published. These show that domestic demand growth is set to be as much as, or higher than, forecast in June. The higher policy interest rate ought to lean against private consumption growth, but lower interest rates on mortgage loans and other changes in the housing finance market are likely to outweigh this. When investments in the power and aluminium sectors gather momentum in the autumn and into next year, private consumption growth will accelerate even more, other things being equal. And while labour market data suggest some excess supply, it is uncertain to what extent this reserve source of labour can be tapped when construction of the power plant and smelter peak and their impact has extended to most sectors of the economy. Although the rises in the policy rate in June, and especially in July, implied a slight tightening of the monetary stance, this has not managed to change the financial conditions of households and business sectors significantly, and as far as households are concerned, financial conditions have clearly eased.*

I Economic developments

The upturn in inflation that began in April peaked in June, close to the upper tolerance limit of the inflation target. Afterwards, inflation dipped back, as it happens partly due to the impact of changes in the housing loan system. Some of the increase in inflation is explained by higher import prices, which are largely caused by soaring fuel prices. In this respect, higher inflation is less of a cause for concern. Excluding the effect of changes in the housing loan system, the temporary impact of higher fuel prices, and to some extent increases in the price of public

1. This article uses data available on September 15, 2004.

services, the underlying inflation rate is just under 3%. However, a sizeable share of inflation can be attributed to robust domestic demand, which so far has mainly been reflected in rises in the housing component of the consumer price index (CPI), while the strong króna has held back goods prices from rising. Higher inflation prompted some rise in inflation expectations, especially among households.

There are no signs of a slowdown in domestic demand growth. Both private consumption and investment surged in the first half of 2004. The latest statistics indicate ongoing strong growth in the third quarter. Investment in hydropower and aluminium projects will also increase in the next few months. The labour market has shown some inertia in adjusting to rapid demand growth. The situation is characterised by labour shortages in some sectors and excess labour in others, and seasonally adjusted unemployment has risen since the spring.

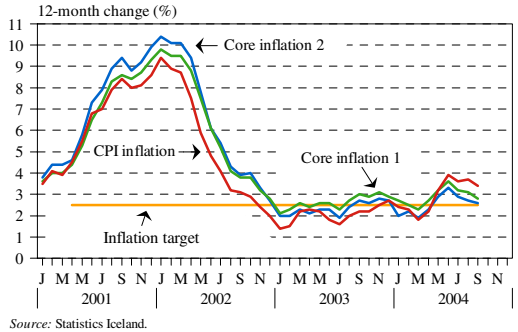
Price developments

Inflation climbed at the beginning of summer and approached the upper tolerance limit of the target

Inflation began climbing in the spring and peaked at 3.9% in June. It has fallen since and measured 3.4% in September. To some extent the surge in inflation this summer can be traced to volatile factors. Nonetheless, underlying inflation has followed a similar path. Statistics Iceland publishes two indicators of underlying inflation. The rise in Core index 1 (the CPI excluding agricultural products, vegetables, fruit and fuel) reached a high of 3.6%, and measured 2.8% at the beginning of September. Measured by Core index 2, which furthermore excludes changes in prices of public services, inflation has been somewhat lower, and stood at 2.6% in September. Inflation in recent months has been driven by both demand and cost pressures. Demand pressures have been felt in the housing market in particular, but cost pressures mostly in fuel prices and, to a lesser extent, services.

Chart 1

Consumer price inflation and core inflation
January 2001 - September 2004



Source: Statistics Iceland.

Housing price inflation still running high, but marginally lower than in June

The housing component of the CPI accounts for almost one-third of the rise in the index over the past twelve months, or 0.9%. After slowing down in the second half of 2003, housing price inflation picked up in the spring and market prices of housing rose rapidly in the summer. Housing price rises have slowed down again, but this is partly caused by changes to the housing loan system in July which had a negative impact on the housing component, bringing the index overall down by 0.17% (see Box 1).

Major changes in the housing market recently may have spurred price increases. Easier access to credit and lower interest rates stimulate demand. The rise in the Housing Financing Fund's (HFF) maximum loan amounts at the beginning of the year gave more access to cheaper finance than was available from the commercial banks, which have had a low profile in the residential mortgage market until recently. The commercial banks responded to this competition by making foreign currency-linked mortgages available to homebuyers at lower real rates of interest than were offered by the HFF. It should be borne in mind that these were variable-interest loans based on foreign short-term rates, which have been close to a historical low. In July the HFF introduced a new system of mortgage bonds and this change soon brought down interest rates on the new bonds (known as Housing Financing Fund bonds) to ¾ of a percentage point lower than under the old housing bond system. Towards the end of August, the commercial banks began offering their customers mortgages on similar terms to the HFF. Since no maximum amount is imposed on these loans, they are particularly useful to homeowners who seek to buy larger properties or refinance out-

Box 1 The impact on the CPI of changes in the housing finance market

At the beginning of June the Housing Financing Fund (HFF) changed its lending system so that homebuyers are now granted cash loans at fixed interest instead of housing bond loans. The new loans are financed with bond issues. Interest rates offered to homebuyers are the same as the HFF's yield on the sale of the bonds, plus a premium currently set at 0.6%. The following is an analysis of the impact of these systemic changes on methodologies for measuring the CPI.

Monetary Bulletin 2004/2[1] included a detailed account of the way that housing costs are measured in the CPI. It described how the market price and lifetime of sold housing are calculated, together with the opportunity cost of owner-occupancy. The following discussion is confined to the changes resulting from the new HFF loan framework and their impact on measurement of the CPI.

Statistics Iceland receives data from the Land Registry on cash prices in housing sales, which it calculates in the same way as before the loan system was changed. Since mortgage loans from the HFF are now paid out in cash rather than with housing bonds, they no longer need to be revalued at present discounted value.

The opportunity cost of owner-occupied housing is calculated by Statistics Iceland 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 (see further Appendix 1 in *Monetary Bulletin* 2004/2). In July, interest rates on new HFF loans were 0.3 percentage points lower than under the old system. The impact of this change was treated in the same way as previous changes in HFF interest rates. By reducing interest on HFF loans, as recorded in deeds of sale, by 0.3 percentage points, the CPI for July measured 0.17 percentage points lower than otherwise.

Statistics Iceland does not consider it desirable to incorporate all short-term movements in long-term interest rates into its calculations of the housing component of the CPI, since it is only rates on new borrowing that change. Accordingly, it adopted a new methodology for evaluating real interest rates on new loans when the CPI was calculated for August. The reference used now is the average real interest rate over the preceding five years. Initially, however, instead of covering a full five years, the average will be calculated from March 2000, when data from deeds of sale for housing outside the Greater Reykjavík Area were first included in calculations of the housing component of the CPI. From February 2005, a full five years (60 months) will have elapsed since this systemic change and the reference will be average interest rates over the past 60 months in each instance. At the same time, the weight of owner's equity in the housing component was reduced slightly to below one-half, and the weight of the seller's debt taken over by the buyer was increased by a corresponding amount. The higher interest rate caused by the change in weight between equity and debts taken over was not allowed to raise the value of the "owner-equivalent rent" subcomponent.

In August, interest rates on HFF loans went down by a further 0.3 percentage points. Since the reference was the monthly average since March 2000, HFF interest rates actually rose in the CPI calculation between July and August, but dropped marginally between June and August. The change between June and August is in line with Statistics Iceland's new methodology, while the change between July and August is not. The owner-equivalent rent component rose by 0.9% between July and August, driven up by higher market prices of housing.

Statistics Iceland has not stated how the commercial banks' newly announced housing loans will be treated in the CPI.

1. Housing price indices – measurement methodologies, Appendix 1 to Economic and Monetary Development and Prospects, pp. 29-32.

standing debt.[2] By enabling more people to buy first-time or larger housing, this change may be expected to fuel housing prices.

2. These new loans are not exclusively for housing purchases. They may be used to prepay existing loans or to increase the mortgage amount and thereby lower owner's equity in housing without a transaction taking place. This option will hardly affect housing prices directly, but could boost private consumption.

Offsetting this demand effect, heavy investment in residential housing last year and this year will in the long run generate greater supply. There are signs that increased supply is already beginning to restrain price rises, at least in certain parts of the Greater Reykjavík Area. If macroeconomic conditions turn downwards, this development could lead to excess supply and a price slump.

Low imported inflation apart from fuel price rises

Excluding the rise in fuel prices, imported inflation has been moderate so far this year. For the past eight months, the twelve-month rise in imported goods prices (excluding fuel, alcohol and tobacco) has been in the range 0.5% to 1%, and in September it measured 0.9%. However, fuel prices have been soaring recently and by September they had risen by 13% in the course of one year. Of the 3.4% increase in the CPI over the twelve months to September, 0.5 percentage points are accounted for by higher fuel prices. If fuel is included with imported inflation, the figure is considerably higher, measuring 1.7% in September. Excluding fuel, there is little inflationary impulse from abroad. A year ago, however, the impact was still on the downside.

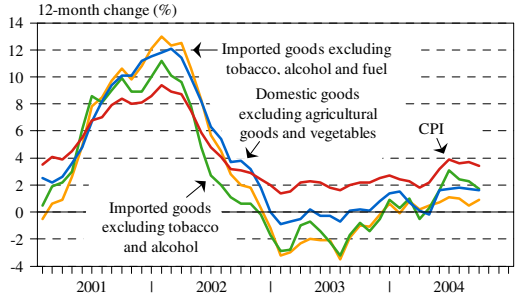
Since domestic goods producers compete with imports, import prices affect the prices of domestic goods. The twelve-month rise in prices of domestic goods, excluding agricultural products and vegetables, has been in the range 1.5%-2.0% over the past five months and was 1.6% in September, which is somewhat higher than the increase in import prices excluding fuel; the additional costs in connection with recent wage agreements should have exerted some impact on prices. The Producer Price Index (PPI) for the domestic market barely rose at all in H1/2004, according to Statistics Iceland. Thus rising producer prices are unlikely to exert upward pressure on retail prices of domestic goods.

The increase in private sector services prices exceeds the inflation target, but public services prices have outstripped them

The twelve-month increase in prices of private sector services amounted to 2.9% in September and has been on an upward trend so far this year. Since the beginning of 2004, they have risen by 2.2%. Service prices are sensitive to changes in wages. Their rise is therefore probably partly influenced by contractual wage rises. The bulk of contractual wage rises this year have probably already been transmitted to private services prices, and estimated wage drift so far this year is in line with the assumptions in the Central Bank's last inflation forecast in June. Conditions should thus be in place for a moderate increase for the remainder of the year. Prices of public services have increased far more, by 5% over the twelve months to the beginning of September. It is sensible to compare prices of private and public services over a long horizon. Over the past seven years, prices of private services have increased marginally more than public services (see Chart 3), but the gap has been closing recently, partly as a result of public sector wage increases exceeding private sector wage growth over the past couple of years.

Chart 2

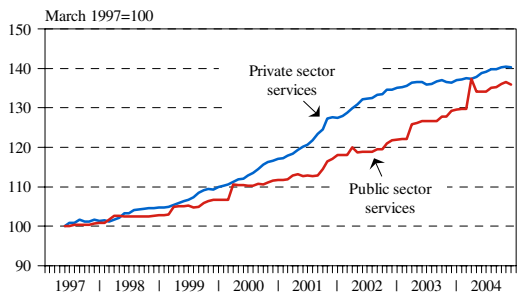
Goods prices and the CPI
January 2001 - September 2004



Source: Statistics Iceland.

Chart 3

Price indices for private sector and public sector services March 1997 - September 2004



Source: Statistics Iceland.

Higher import prices fuel inflation, but are offset by the stronger króna

Since the Central Bank's June forecast, wage and productivity developments have unfolded broadly in line with the assumptions made at that time. However, changes in the exchange rate and import prices may perhaps warrant a revision. Towards the end of August the króna was just over 1½ percentage points stronger than assumed in the last forecast, which by itself would lead to lower inflation. Offsetting this, there are various indications that import prices will rise by more than had been assumed, led by hefty increases in fuel prices. Futures prices imply that fuel prices will remain high, but they have not always been a reliable predictor of spot price trends. Forecasts for world market prices of commodities and manufactured goods also suggest that imported inflation could rise in the fairly near term. This would drive up the inflation rate over the second half of the forecast horizon, compared with the June forecast.

Underlying inflation just under 3%

The core indices mentioned above only provide a framework of reference for assessing underlying inflation. Whether to ignore specific price increases when assessing underlying inflation must be weighed up on a case-by-case basis. There are strong arguments in favour of disregarding the direct impact of higher fuel prices, as the core indices do. A case can also be argued for discounting public sector price increases. Given that prices of public services are quite closely matched to those of private services over an eight-year period, public services prices could adjust more slowly to those of other services. Be that as it may, public services prices are a unique case in that they are at the discretion of the authorities. However, the contribution made to inflation by civil servants' pay increases, which have outstripped those in the private sector, cannot be ignored. They may also provide some stimulus to inflation. Thus underlying inflation can arguably be estimated higher than the rise in Core index 2, which has gone up by 2.6% over the past twelve months. Finally, the one-off impact of changes in the housing loan system, amounting to just under 0.2 percentage points, should be disregarded. Taking all the above into account leaves an underlying inflation figure of just under 3%.

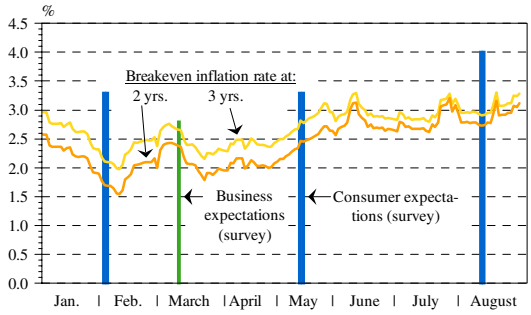
Inflation expectations on the increase

The breakeven inflation rate (defined as the spread between non-indexed and indexed three-year Treasury bonds) has moved in the range 2.8%-3.3% and averaged around 2.9% since the beginning of June. This is around half a percentage point higher than during the first five months of 2004, when the breakeven inflation rate was close to the inflation target for most of the time. There are several reasons for the higher breakeven inflation rate, including greater increases in the CPI than the commercial banks' analysts had assumed, both in May and June. In fact, the CPI fell by more than expected in July, but because this was largely attributable to summer clothing sales and will be reversed, it does not seem to have had much impact on expectations. Fuel prices have risen by more than expected and there is no outlook for a substantial reduction in the near future. Global prices of manufactured goods and commodities, and expectations about them, have also been on the increase. Countering this, the króna has strengthened by more than 1½% since mid-May.

Chart 4

Inflation expectations 2004

Daily data for breakeven inflation rate, January 5 - August 31, 2004



Source: Central Bank of Iceland.

Households' mean expectations of inflation twelve months ahead rose to 4% at the beginning of August, from just over 3% in May – outpacing the rise in the breakeven inflation rate. Households were surveyed in July after the greater-than-expected drop in the CPI, which can be expected to have tempered inflation expectations. Counterbalancing this, fuel prices rose over the period when the survey was conducted. The median for inflation expectations was somewhat lower than the mean, at just over 3%. Half the respon-

dents in the survey expected a rate of inflation within 3% over the next twelve months, but a fairly large group foresaw it much higher than 4%, and thus beyond the upper tolerance limit of the inflation target.

Risks from buoyant demand, the fairly strong króna, the current account deficit and rising inflation expectations

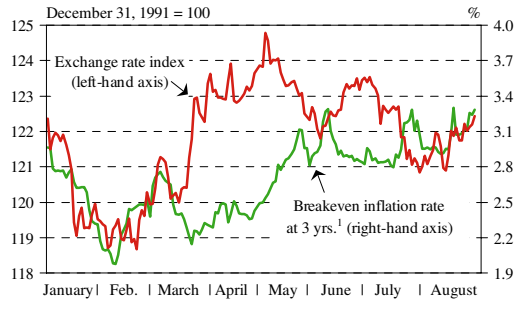
Underlying inflation in the region of 3% need not be a cause for concern in its own right if broad macroeconomic balance prevailed. Excluding energy and housing prices, inflation is currently within the target. Inflation is therefore still confined to a few factors. Wage rises also seem to be broadly consistent with the inflation target. However, a number of risk factors should be borne in mind. First, housing price inflation may be a leading indicator of future inflation, as happened in 1999. Unlike the situation in that year, however, a substantial increase in housing supply may serve to keep housing prices in check. Second, domestic demand growth has been soaring recently, as discussed below. Demand pressure thus far has taken the form of a widening current account deficit rather than rising inflation. In this respect, the current situation resembles the events of 1998. Growing external imbalances entail the risk of pressure on the exchange rate of the króna later, especially bearing in mind that the real exchange rate is probably on the strong side at present. A weakening of the króna under robust demand conditions could amplify the inflationary impact.

On the other hand, several factors can be identified which ought to have a positive effect in the near term. Public sector investment, which had been driving demand, has been reduced, especially in the second half of last year and the beginning of 2004. Labour market pressures also seem weaker on the whole that could have been expected given the large investments that have been launched for the aluminium industry, despite localised and segmental labour shortages.

Chart 5

The breakeven inflation rate and the exchange rate

Daily data, January 5 - August 31, 2004



1. Spread between non-indexed and indexed 3-year T-bonds. *Source:* Central Bank of Iceland.

Outlook for lower inflation this year, but higher in H2/2005 and 2006, than was forecast in June

In June the Central Bank forecast an inflation rate of 3.3% during Q2, which held good. So far in Q3, measured inflation is headed below the June forecast of 4.0% year-on-year. Once again it should be remembered that the changes to the housing finance system caused a one-off drop in owner-equivalent rent. This impact was not incorporated into the June forecast but brought down the CPI for July by 0.17%. Had this been done, there would have been very little divergence between the forecast and outcome.

Overall, the June forecast seems to present a fair assessment of inflation prospects over the next two years. While inflation in H2/2004 will be lower, the outlook is for more increase in import prices and a larger output gap than forecast in June which could result in higher-than-forecast inflation in the second half of the forecasting period.

Output and demand

US recovery slows down and domestic growth in the euro area remains weak

On the whole, the external conditions of the economy have improved on the export side but deteriorated on the import side. Economic recovery in trading partner countries is continuing, although growth has slowed down in the US. In recent months rising oil prices have left their mark on the global economy, kindling inflation and dampening demand. Robust growth in the US in Q1 slowed down in the next quarter. Growth forecasts for this year have been revised downwards. It is debatable to what extent this is a short-lived interruption due to higher oil prices or a more lasting effect. The impact of expansionary fiscal policy in the US is also petering out and short-term interest rates have started moving upwards. Japan's growth in Q2 was also disappointing. Growth

Box 2 Financial market analysts' assessments of the economic outlook

The accompanying table shows the economic forecasts of financial market analysts in the second half of August. Participants in the survey were the research departments of Íslandsbanki, KB banki and Landsbanki, and Economic Consulting and Forecasting.

On average, respondents foresee a very slight weakening of the króna over the next twelve months, with an exchange rate index of just over 123, marginally above its recent value. Opinions are more divided on this point than in the May survey, and also over a longer horizon.

Overview of forecasts by financial market analysts[1]

	2004			*2005*		
	Average	*Lowest*	*Highest*	*Average*	*Lowest*	*Highest*
Inflation (within year)	3.5	3.4	3.6	3.2	3.0	3.5
Inflation (year-on-year)	3.2	3.0	3.7	3.2	2.9	3.3
GDP growth	4.3	3.9	4.6	4.7	4.3	5.0
	One year ahead			*Two years ahead*		
The effective exchange rate index of foreign currencies vis-à-vis króna (Dec. 31, 1991=100)	123.3	120.0	128.0	123.8	120.0	133.0
Central Bank policy interest rate	7.8	7.5	8.0	7.8	7.5	8.0
Nominal long-term interest rate[2]	7.8	7.5	8.0	7.5	7.0	8.5
Real long-term interest rate[3]	3.8	3.5	4.2	3.7	3.5	4.0
ICEX-15 share price index (12-month change)	12.6	5.0	18.0	18.0	10.3	35.0
Housing prices (12-month change)	7.5	5.0	10.0	11.3	10.0	15.0

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.

Analysts were very close in their forecasts for inflation over 2004, which is 3.5% on average. This is higher than their forecasts in the last survey conducted in May, and much higher than at the beginning of this year, which is hardly surprising in light of housing and oil price hikes so far in 2004. They are also unanimous about a slight slowing of inflation in 2005. These forecasts are above the Central Bank's inflation target, but within the upper tolerance limit. Inflation measured between annual averages is quite close to the rate over the year, as the table shows, but the forecast range is wider.

Analysts have revised their growth prospects for 2004 upwards since May, but their forecasts for next year are unchanged. The average forecast is for 4.3% growth this year and 4.7% in 2005, with broadly the same deviation towards the lowest and highest values.

The Central Bank's policy rate is currently 6.25% and analysts are unanimous that it will be raised in the next few months. On average they expect it to reach 7.8% twelve months ahead, and remain there 24 months hence.

All respondents in the survey expect some rise in equity market prices over the next 12 and 24 months, even though the ICEX-15 index has already gained more than 60% so far this year and is now at a historical high. Expectations differ widely, however, as the lowest and highest values show, but the average forecast rise is 12% over a twelve-month horizon and 18% over 24 months. Analysts disagree about real estate price developments, but all forecast ongoing increases both one and two years ahead.

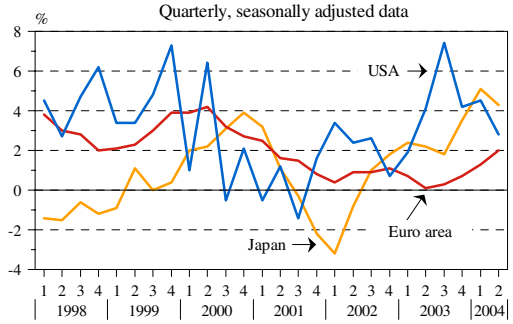
in the euro area has still not taken off, although the picture brightened at the beginning of the year. Domestic demand is sluggish in Japan and the euro area, and growth has primarily been export-driven.

Chart 6

Economic growth 1998-2004

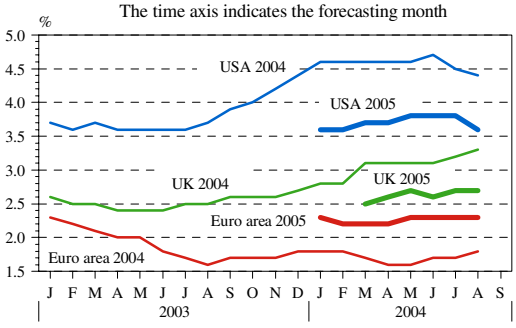
GDP growth in the USA, Japan and the euro area 1998-2004

Quarterly, seasonally adjusted data



GDP growth forecasts for the USA, the euro area and the UK in 2004 and 2005

The time axis indicates the forecasting month



Sources: EcoWin and Consensus Forecasts.

Marine export prices may have bottomed out

Whether driven by the recovery in main market regions or other factors, marine export prices – especially for demersal fish products – have edged up since March. In the first seven months of 2004, however, average prices were just under 5% lower in foreign currency terms than a year before.[3] Price developments vary substantially between segments. For example, prices of frozen-at-sea products in July this year were roughly unchanged from July 2003, while land-frozen products were 4.3% lower. Prices of fishmeal have slumped following a EU ban on its use in animal feed, which it is hoped will be lifted in the autumn. Aluminium prices have been broadly stable in recent months, at roughly one-fifth higher year-on-year. Prices are expected to be relatively stable in the near future.

Rising fuel prices have some macroeconomic impact

Fuel prices have soared this year. Petrol prices have risen by almost 50% and crude oil by more than half over the past twelve months. Average crude oil prices are expected to end up almost one-third higher in dollar terms this year than in 2003. These increases have a sizeable impact in certain areas of the economy. Fuel costs of fisheries companies, for example, account for around 15% of their operating costs, and price rises could trim their EBITDA by 4 percentage points this year (see Box 3). The surge in prices also affects the external balance of the economy. Fuel imports were valued at roughly 16 b.kr. in 2003. Assuming that current prices remain unchanged for the rest of the year, fuel imports can be expected to rise by at least 6 b.kr. in 2004.

Robust growth continued in the first half

When the Central Bank published its last forecast in June, no national account data were available for GDP growth during the current year. Since then, the national accounts for two quarters have been published. They indicate that growth and national expenditure this year could exceed the forecast. On September 9, Statistics Iceland published its revision of the national accounts for 2003, which revised last year's output growth figure upwards to 4.3% from 4%. The main factors at work were higher growth in services exports than indicated by provisional data and slightly higher private consumption growth, while gross fixed capital formation increased by less than originally estimated.

First-half growth was broadly the same as in the preceding quarters, at 4.6% in Q1 and 6.4% in Q2. This was the highest rate of growth for two consecutive quarters since Q1/2001. Gross fixed capital formation was marginally lower in Q1 than in preceding quarters due to aircraft purchases a year before, but jumped in Q2 to 21%. Private consumption in the first half grew at the fastest pace since 1999. Despite

3. Based on a trade-weighted currency basket.

Box 3 The macroeconomic impact of oil prices

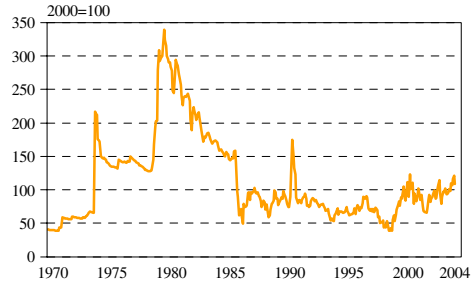
Oil prices soar, but have often been higher in real terms

Over the past twelve months, the price of crude oil has risen by half in global markets, and petrol by broadly the same amount. Despite talk of "record oil prices", this is hardly the case except for nominal US dollar prices. Crude oil prices in autumn 1990, deflated by the OECD CPI (excluding high-inflation countries), were one-fifth higher on average than today. They were two-thirds higher on average over the period 1979-1985 than today, and also higher in the second half of the 1970s and first half of the 1980s. Furthermore, since 2001 the US dollar has slid sharply against the euro and other major world currencies. Oil prices have therefore generally risen by much less in other currencies than in US dollars, which dampens the impact on business profitability and economic growth in those countries – including Iceland.

Chart 1

Crude oil prices 1970-2004

In real terms[1], January 1970 - August 2004



1. Deflated by consumer prices in OECD-countries (excluding high inflation countries until May 2004). *Sources*: EcoWin, Central Bank of Iceland.

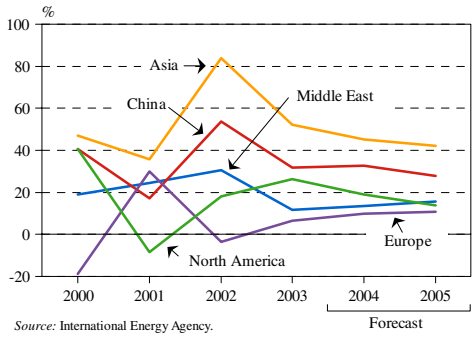
Strong role of demand in driving prices

To some extent the recent price rises have different causes from those in the past. Sharp hikes over the past few decades have generally been caused by decreased supply. Oil producers have cut production to force up prices. In the present case, however, the explanation is thought to lie on the demand side. Demand for oil has been growing so fast in the recent past that supply has hardly been able to keep pace with it. The shortage of excess production capacity has left prices highly susceptible to the impact of regional conflicts in major oil-producing countries, the situation in Iraq and global economic expansion.

Chart 2

Oil demand developments 2000-2005

Regional breakdown of world demand



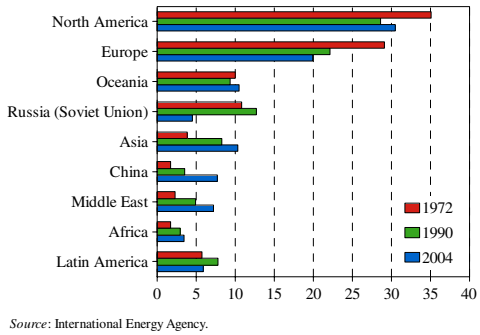
Source: International Energy Agency.

Increased share in demand from Asia, especially China

Regional shares in demand for oil have changed greatly over the past three decades. North America's share has declined from 35% in 1974 to less than 30% this year, and Europe's from 29% to 20%. In the space of 30 years, the share of Asia excluding Japan has grown from 6% to 18%, and China's share from 2% to 8%. The change has been sharpest in recent years. Thus demand growth over the past few years has mostly been driven by China, other Asian countries and the US. Almost half the increase in demand this year can

Chart 3

Crude oil demand by regions of the world 1972-2004



Source: International Energy Agency.

be traced to Asia, thereof one-third to China, while demand growth from the US has slowed down. A similar trend is forecast for next year.

Less impact on output growth in Iceland than in most other countries

The macroeconomic impact of higher oil prices takes two main forms. One is an increase in the price of imported goods, which has the direct effect of driving up inflation as measured by the CPI. The other is to cause a deterioration in the terms of trade, which curbs output growth. Studies using the Central Bank of Iceland macroeconomic model suggest that the rise in oil prices so far this year and the change implied by futures prices until the end of 2005, which together are equivalent to an increase of one-quarter in foreign currency terms between 2003 and 2004 and 6% between 2004 and 2005, will leave output growth over the next two years 0.1-0.2 percentage points lower than otherwise. This impact is somewhat softer than the estimates for other countries, e.g. the US. The probable explanation is the more widespread use of oil for heating and electricity production there than in Iceland.

Short-term rise in inflation

The impact on domestic inflation is more complex. In the short run, the direct impact of higher oil prices on inflation can be expected to weigh heavily, possibly driving it as much as 0.3 percentage points higher than otherwise this year, measured in terms of the increase between annual averages. However, the deterioration in the terms of trade would start to outweigh this impact roughly two years ahead, by which time oil prices are expected to be back on a downward path as well. Accordingly, inflation could then be roughly 0.2 percentage points lower than otherwise, ignoring the effect on the exchange rate of the króna.

Higher oil prices have a considerable effect on fisheries profitability, especially for blue whiting and shrimp vessels

Oil consumption is currently equivalent to 12% of fishing vessels' operating revenues on average, and accounts for 15% of their operating costs. This proportion has been rising over the past two years, due to higher prices of oil products. In Statistics Iceland's highlights of fishing operations for 2002, oil consumption was equivalent to 8% of revenues and accounted for 11% of operating costs. Operating profit (EBITDA) of fishing companies during the current year can therefore be expected to deteriorate by as much as 4 percentage points as a result of oil price rises in recent months. Higher oil prices hit individual fisheries segments in different ways. The impact is heaviest on trawlers, for which oil costs are equivalent to 13%-16% of revenues or 18%-20% of operating costs. The oil price hikes in recent months could cause serious difficulties for blue whiting and shrimp vessels and even bring these fisheries to a standstill, since they are energy-intensive and yield relatively low catch value.

Crude oil supply will increase in the years to come, contributing to lower prices

Supply of crude oil is expected to increase this year. In August, the IEA (International Energy Agency) forecast that supply will increase during the present year and 2005 by almost 7%, considerably in excess of demand. OPEC countries are currently producing more than their quotas. Inventories are thought to be above average and the position is in fact much better than could have been expected given the recent wave of price increases. Prices and inventories generally move in opposite directions, but this has not been the case in recent months. Inventories in the US are now at their highest for three years. Refineries have boosted their production capacity and are considered fully capable of meeting demand for oil products in the near future. Crude oil production capacity has mostly grown outside OPEC. In addition, IEA has strategic oil reserves corresponding to 2% of annual demand. For all these reasons, it is widely considered that the present high oil prices will not be sustained.

increased exports, net foreign trade made a negative contribution to growth, as it did in the last three quarters of 2003.

Recently published statistics do not suggest that growth has slowed down so far in Q3. Payment card turnover in July rose at a slower pace than earlier in the year, in fact, but there was a spike in grocery turnover, conceivably due to the good weather. Imports of consumer goods were also robust during the month although year-on-year growth slowed down compared to preceding months. Data on Treasury revenues from VAT and import duties also suggest that demand is still buoyant.

Table 1 National accounts 2003-2004

	2003			2004		
Volume change on previous year (%)	*Total*	*Q3*	*Q4*	*Q1*	*Q2*	*Forecast for 2004[1]*
Gross domestic product	4.3	3.5	4.9	4.6	6.4	4¼
National expenditure	8.0	9.0	9.3	8.5	8.7	7
Private consumption	6.6	6.3	6.5	7.9	6.5	5½
Public consumption	3.3	3.0	3.1	1.9	2.2	½
Gross fixed capital formation	17.6	26.3	31.0	17.1	21.0	17
Exports of goods and services	0.3	2.5	-1.2	3.8	7.4	5
Imports of goods and services	9.7	16.0	10.8	14.3	12.9	11¾
% of GDP						
Goods and service balance	-2.9	-3.5	-4.6	-2.4	-8.4	-6½
Current account balance	-4.1	-4.3	-4.6	-5.4	-7.7	-8¾

1. Central Bank forecast in June 2004. *Sources:* Statistics Iceland, Central Bank of Iceland.

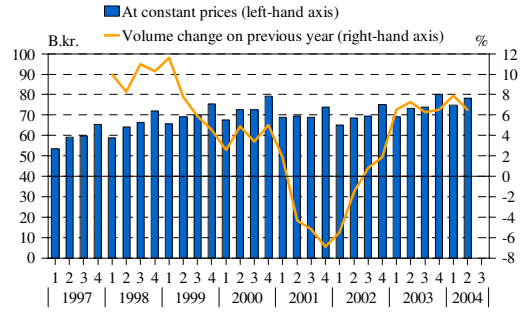
Private consumption growth headed higher than forecast

Private consumption in H1/2004 increased by 7.2% year-on-year. Some slowdown in growth is needed if the Central Bank's forecast of 5½% growth for 2004 is to hold good (see Table 1). Real wages grew by only 1½% in the first half of the year and employment seems to have fallen year-on-year. Households have therefore largely financed their private consumption with borrowing, possibly influenced by higher asset prices.

Chart 7

Private consumption 1997-2004

Quarterly data[1]



1. Preliminary data for 2003 and estimated data for 2004. *Source:* Statistics Iceland.

Recently published statistics do not suggest that growth has slowed down so far in Q3. Payment card turnover in July rose at a slower pace than earlier in the year, in fact, but there was a spike in grocery turnover, conceivably due to the good weather. Imports of consumer goods were also robust during the month although year-on-year growth slowed down compared to preceding months. Data on Treasury revenues from VAT and import duties also suggest that demand is still buoyant.

However, there are some signs that somewhat slower private consumption growth could lie ahead compared with the first half of this year. Gallup's consumer confidence index dipped in the summer. It now stands some way lower than in the corresponding period in 2003, although it rose in both July and August. Real wages have also risen more slowly recently than last year, due to higher inflation and the timing of wage agreements. Even though subdued real wage growth has not yet managed to check household spending, this could happen eventually. Finally, labour market conditions do not seem to be improving as rapidly as expected, as discussed in the Labour market section below.

Public consumption decreases, but the targeted cutback is unlikely to be met

Public consumption grew by only about 2% in the first half of the year, the lowest rate of increase

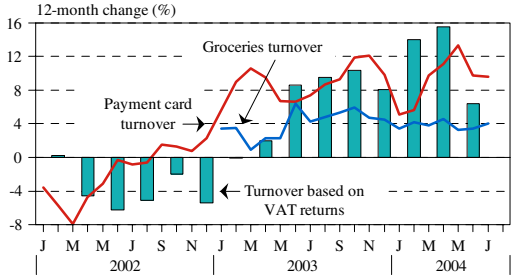
Table 2 Indicators of demand in the first half of 2004

% change from year before unless otherwise stated	*Q1*	*Q2*		*Two latest months*[1]
Grocery turnover, in real terms	3.8	3.4	June-July	5.5
Payment card turnover, in real terms	9.8	9.8	June-July	8.0
Car registrations, increase in number	35.8	28.4	June-July	25.1
Cement sales, volume change (tonnes)	65.4	48.5	June-July	37.6
General imports, volume change	23.7	.	January-July	14.9
Imports of consumer goods, volume change	14.5	.	January-July	14.1
Imports of investment goods (excl. vessels and aircraft), volume change	36.9	.	January-July	26.3
Residential housing in Greater Reykjavík Area, price change	9.1	11.6	June-July	10.7
Lending by the Housing Financing Fund (nominal value)	12.5	77.5	May-June	118.5

1. The right-hand column shows the year-on-year change in the two most recent months for which data are available. For imports, changes are based on cumulative data from the beginning of the year. *Sources:* Cement distributors, Federation of Trade and Services, Housing Financing Fund, Land Registry of Iceland, Motor Dealers' and Services Federation, Statistics Iceland and Central Bank of Iceland.

Chart 8

Domestic turnover 2002-2004



All changes are calculated at constant prices. Payment card turnover data are based on moving 3-month averages, seasonally adjusted. Groceries turnover data are based on moving 3-month averages. VAT turnover data are based on two-month periods, seasonally adjusted.
Sources: Federation of Trade & Services, Statistics Iceland and Central Bank of Iceland.

since 2001. This growth is well compatible with 3% growth, in real terms, of central government operational outlays and health outlays on the social security accounts, which are the clearest available indicators of public consumption expenditures. Year-on-year comparisons are complicated by changes in the presentation of expenditure data. After the central and local government budgets were published, public consumption was forecast to increase by ½% over this year, namely by 1% for municipalities and very slightly for central government and health outlays on the social security accounts. If the forecast is to hold, public consumption will need to decrease by 1% in the second half, which seems optimistic.

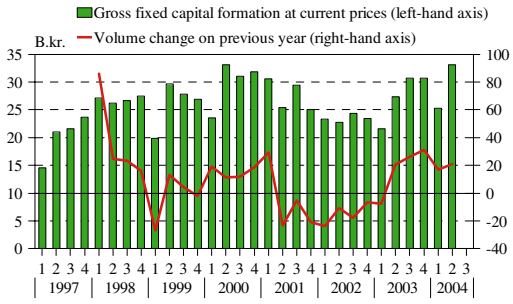
Gross fixed capital formation picking up

Gross fixed capital formation in 2004/H1 increased by 19.3% year-on-year. Growth in Q1 slowed down from the preceding quarter, probably due to less investment in ships and aircraft. Since these investments are very irregular, it is useful to exclude them to reach an assessment of underlying investment. Imports of other investment goods grew by 37%, broadly in line with the previous quarters. A breakdown of quarterly data is not available for gross fixed capital formation, but it is clear from figures for Treasury expenditures suggest that public sector investment has contracted in the course of this year and can be expected to contract further in the second half. On the other hand, business investment is soaring, as was expected. Most indicators also suggest

Chart 9

Gross fixed capital formation 1997-2004

Quarterly data



1. Preliminary data for 2003 and estimated data for 2004. *Source:* Statistics Iceland.

that residential housing investment will increase by at least as much as in 2003.

Current account widened in H1/2004 but the deficit in 2003 is rerised downwards

The current account deficit in H1/2004 was equivalent to 6½% of GDP. The deficit has widened by the equivalent of almost 3 percentage points of GDP year-on-year, despite growing exports. It should be added that revised statistics for the balance on income in 2003 raised the earlier estimate for receipts, leaving the current account deficit for last year almost 1½ percentage points smaller than originally assumed, at just over 4%. Exports in H1/2004 were up 5½% year-on-year, which is a faster rate of growth than a year before. The widening deficit is primarily explained by a 13½% surge in imports. First-half growth of both imports and exports was more than the Central Bank forecast in June for the whole of the year.

Merchandise imports increased by 15½% year-on-year in volume terms over the seven months of this year and the rate of growth does not appear to be tailing off. Twelve-month growth in imports of consumer goods over the first seven months was just over 14%. Outlays on tourism increased by 26% year-on-year, measured at constant exchange rates, and on travel by almost one-quarter. Thus a growing share of Icelandic household expenditure has taken place abroad this year.

Marine exports over the first seven months of this year increased 8% year-on-year in volume terms, but average prices dropped, as mentioned above. Exports of pharmaceuticals and miscellaneous manufactured goods also rose sharply. Aluminium production was broadly unchanged year-on-year but exports, which are subject to large monthly fluctuations, were slightly down over the first seven months. Revenues from travel and tourism soared in the first half, by 26% and 11% respectively measured at constant exchange rates On the whole, the position of export sectors appears to have been relatively strong.

In June, the Central Bank forecast a current account deficit this year equivalent to 8¾% of GDP. Judging by the trend so far this year, the deficit is likely to be somewhat less. However, deficits driven by private consumption tend to be larger in the second half of the year than the first. Investments in power stations will also be stepped up in the next few months. Fluctuations in imports of investment goods and the balance on income, however, are difficult to predict, as the large revisions for 2003 show. Considering the above, it cannot be concluded that the outlook is for a significantly narrower current account deficit over the next two years than the Central Bank forecast in June.

Central government finances

The Treasury balance has improved considerably ...

According to the Treasury accounts, expenditures exceeded revenues by 3.4 b.kr. in the first half of this year. A year-on-year comparison is not possible due to the privatisation of state banks last year and a changeover to earlier accounting of expenditures this year. After adjustment for these two factors, revenues exceeded expenditure by 1½ b.kr. in 2004/H1, compared with a 9 b.kr. deficit in the first half of 2003. This represents a considerable improvement in the Treasury balance. The budget for 2004 aims at a balance between paid expenditures and collected revenues, while provisional figures for last year showed a 20 b.kr. deficit excluding privatisation proceeds.

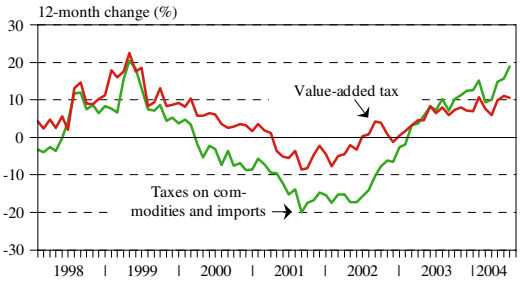
... partly fuelled by growth in demand and imports

Even though no privatisation has taken place in 2004, Treasury revenues until the end of June were broadly the same year-on-year, since tax revenues excluding privatisation proceeds rose by 10% in real terms. Personal income tax, national insurance contributions and value-added tax also yielded roughly 10% more at fixed prices than in H1/2003, and import duties 19% more. It should be borne in mind that a significant part of this year's hefty tax revenues is generated by short-lived economic and current account deficit expansion, and will therefore fall back when activity subsides. By comparison, annual Treasury revenues from consumption and imports during the upswing in 1998-2000 exceeded those in the preceding and following years by an estimated 2% of GDP. This amount corresponds roughly to the Treasury surplus during the upswing years. However, it should be noted that investment weighs more heavily during the current upswing than in the previous one.

Chart 10

Treasury revenues
from consumption and imports 1998-2004

Changes are based on 6-month moving averages



Source: State Accounting Office.

Little change in expenditures in real terms, but they are still short of target

After adjustment for changes in expenditure reporting, Treasury expenditures in H1/2004 rose by an estimated ½% in real terms year-on-year. The budget target is a 3% reduction in real terms. On first impression, operating outlays seem consistent with the budget, but so far this year transfers have risen by 5% in real terms, even though a 2% reduction was aimed for in the budget. National insurance benefits and various other mandatory payments to non-public sector parties constitute the bulk of transfers. Investment outlays have fallen by 16% at fixed prices since the first half of 2003, but a target was set for a 33% reduction in 2004 following large-scale investment last year. It is likely that some investments authorised in the budget for 2003 were deferred until 2004 and were thereby added to authorised outlays.

Proceeds from the sale of assets in 2003 produced a surplus of 4½ b.kr. on the credit account until the end of June, while the borrowing requirement over the first half of this year was more than 3 b.kr., despite an improved rate of loan collection. The requirement has been met with domestic issues of Treasury bills. The comparison problems that applied to revenues and expenditures do not extend to the borrowing requirement.

Labour market

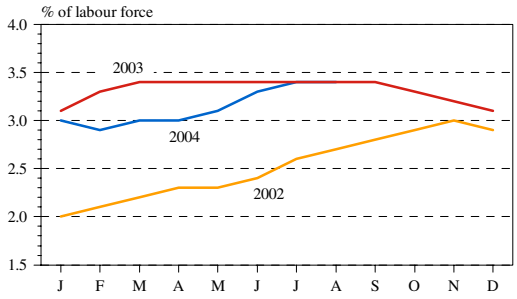
Rise in seasonally adjusted unemployment

Unemployment has not decreased in pace with increased economic activity. Seasonally adjusted unemployment has been growing steadily since April and reached 3.4% in August. The recent trend for seasonally adjusted unemployment resembles the pattern in 2002, when it was on the increase, rather than last year when a contraction was beginning.

Chart 11

Unemployment 2002-2004

Seasonally adjusted data for the whole country



Sources: Directorate of Labour and Central Bank of Iceland.

Employment rises in the Greater Reykjavík Area but drops in regional Iceland

Statistics Iceland's labour market survey reveals a continuing contraction[4] in labour use during the first half of 2004, year-on-year.[5] The labour participation rate declined by one percentage point due to a reduction of 2,800 in the number of people in the labour market. Labour use and participation dropped by more in Q2 than in Q1, and unemployment decreased more slowly.

According to Statistics Iceland's survey, labour use in H1/2004 (measured as the number of employed) contracted by 0.4% year-on-year, which is

4. According to Statistics Iceland's PAYE register, there was a negligible decline in the number of employed, at 0.2%. However, the year-on-year rise of only 4.4% in earnings from employment while the wage index, which measures changes in regular wages, rose by 5.6%, suggests a contraction in the total hours worked by the employed. See also the discussion in *Monetary Bulletin* 2004/2.

5. These findings indicate that the unemployment rate was higher than 3.5% in the first half of the year because fewer man-years were worked than the Directorate of Labour assumed. The Directorate of Labour uses estimates from the Economics Office of the Ministry of Finance for man-years in the labour market as the denominator in its calculations and estimates a year-on-year increase of 0.9% in man-years during the first six months of 2004. However, Statistics Iceland's labour market survey shows a contraction over the same period in all its terms of reference: labour force (-0.9%), number of employed (-0.4%) and total hours worked (-1½%).

explained entirely by a reduction in regional Iceland, since there was an increase in the Greater Reykjavík Area. In terms of hours worked, the contraction was greater. Total hours worked in the first half of 2004 dropped by almost 1½% year-on-year, and 80% of that decrease is explained by fewer hours worked in regional Iceland. Given the sizeable output growth in H1/2004, productivity has increased significantly year-on-year.

Fewer summer relief jobs may explain the rise in unemployment

There was a spike in short-term unemployment (i.e. those who have been out of work for less than six months) in May, around the time that unemployment increased again. This is almost entirely explained by higher unemployment among younger females. This trend diverges from the seasonal pattern over the past two years. Long-term unemployment fell at the same time, however. The immediate explanation for the rise in unemployment since the spring is a shortage of summer jobs, so that it partly reflects a temporary increase in the number of students registered as unemployed.

The increase in registered unemployment is surprising, given that job supply has surged. Vacancies registered with employment agencies were up by more than 40% year-on-year over the first eight months of 2004. The increase was greater in the Greater Reykjavík Area (77%) than regional Iceland (31%). Excluding east Iceland, the regional increase was only one-quarter. Some of the vacancies in the east which are connected with power station and aluminium smelter investments will probably be filled by foreign labour. Nonetheless, the employment situation in east Iceland appears to be on the mend. Construction of the aluminium smelter in Reyðarfjörður is not yet in full swing, but when this takes off in the next few months the number of jobs on offer in east Iceland will probably swell even further.

Many more work permits issued, but foreign labour increases by much more

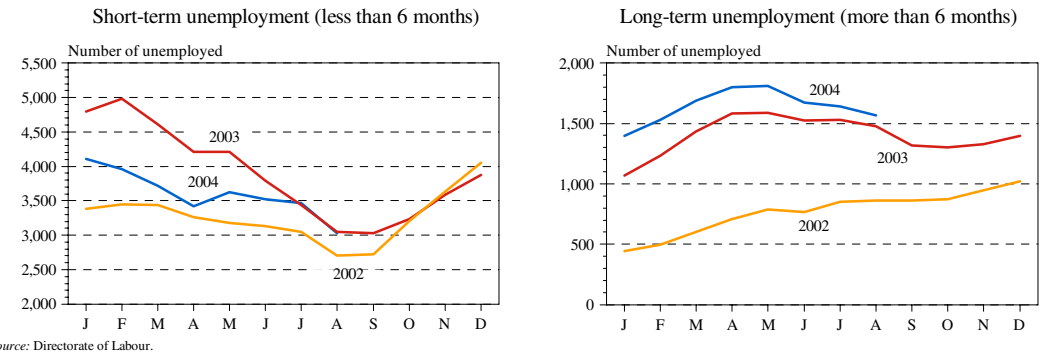
Issuance of new work permits likewise indicates robust demand for labour. Over the first eight months of 2004 the figure more than doubled year-on-year. At the same time, work permit extensions are down by almost one-third. However, issuance of work permits says less about the employment situation that it once did. Employment agencies and the social partners report an increasing trend for employing European Economic Area (EEA) nationals, who do not need to apply for work permits.

More employers plan to recruit staff in the coming months

According to a survey conducted by the Confederation of Industry among its members in June, more employers plan to recruit staff and fewer to make redundancies over the next 3-4 months than in a similar survey made in December 2003. Employers in manufacturing, tourism and fish processing want to take on the most staff. A smaller increase is on the cards among financial companies and electrical con-

Chart 12

Number of unemployed persons by duration of unemployment 2002-2004



Source: Directorate of Labour.

tractors. Some reduction in staffing looks likely in fisheries and in the commerce and service sectors.

Groundwork on the Reyðarfjörður aluminium smelter will begin this autumn and power station construction is being launched in Reykjanes, southwest Iceland. Sufficient labour does not seem to be available to fill these vacancies either in east Iceland or the Greater Reykjavík Area. Considerable competition prevails in the construction sector, so contractors are likely to turn to importing labour rather than outbidding for employees of other companies.

Slowdown in real wage growth and wage drift

Private sector wages rose by 4.2% in Q2 year-on-year, according to Statistics Iceland's wage index. Negotiated rises in most private sector wage agreements are 4.3% this year, but their full weight will not be felt in the index until Q3. Based on the Q2 outcome, it appears that high wage levels, price competition in the sectors where a shortage of labour is developing, and imported labour are keeping wage drift in check. Some uncertainty may be created about wage developments for the coming years if forthcoming civil service wage deals trigger review clauses in private sector settlements. (See Box 1 in *Monetary Bulletin* 2004/1, pp. 9-10).

In July, Statistics Iceland's wage index showed a 5.1% increase year-on-year. The CPI rose by 3.6% over the same period, so real wages increased by an average of 1.4%. This is considerably weaker real wage growth than last year. It should be borne in mind that the rise in residential housing prices, which accounts for 0.9 percentage points of the 3.4% inflation rate in September, affects only a relatively small group of wage-earners. For the rest, the increase is greater in real terms.

Financial conditions

The finding of the analysis in *Monetary Bulletin* 2004/1 in March was that the financial conditions of households and businesses were somewhat more favourable than in autumn 2003, while those of financial companies were broadly unchanged. *Monetary Bulletin* 2004/2, published in the beginning of June, found little change in financial conditions since March, since higher inflation expectations had offset the rises in the Central Bank's policy interest rate.

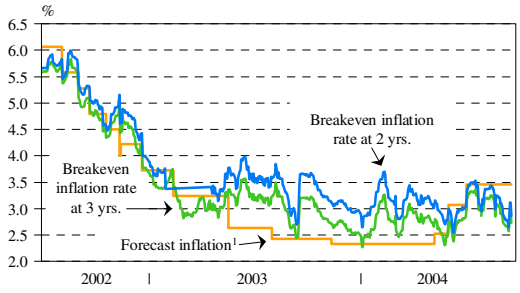
The massive growth in lending in recent years has still not slowed down to any significant extent. Lending by the credit system as a whole increased by 15.4% over the twelve months to end-June, which is broadly the same rate as in March. As in recent years, lending to businesses increased particularly rapidly, by more than one-fifth. Lending to households gained speed in Q2. Data for deposit money bank (DMB) lending in July showed a similar rate of growth.

Since the June *Monetary Bulletin*, the main changes in financial conditions have been that the Central Bank has twice raised its policy rate, by a total of 0.75 percentage points. The policy rate had previously been raised by 0.2 percentage points in May, after remaining unchanged for more than a year. Based on the breakeven inflation rate for three-year non-indexed Treasury bonds, the policy rate has risen broadly as much in real terms as nominal rates, according to a comparison of the four-week averages that were available for the June *Monetary Bulletin* and until the end of August.

Chart 13

The Central Bank policy rate in real terms

Daily data July 1, 2002 - September 15, 2004.
Based on the three different measures of inflation.



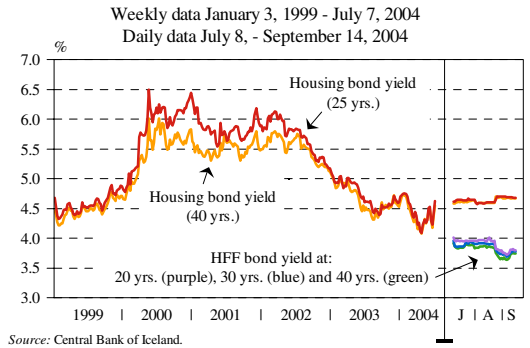
1. The Central Bank inflation forecast, 8 quarters ahead. *Source:* Central Bank of Iceland.

Other short-term rates have tracked the policy rate fairly closely. Yields on three-month Treasury bills rose by one percentage point over the same period, and twelve-month T-bills by 1.2 percentage points. At the shorter end of the market, the financial conditions of households and businesses seem less favourable than they were when the June *Monetary Bulletin* was being prepared. The trend at the longer end of the market has been in the opposite direction. As a result of the switchover in the housing loan system from housing bond loans, households are now

offered cash loans carrying ¾ of a percentage point lower interest, while the yield in auctions of the HFF bonds which replace housing bonds has been roughly one percentage point lower than in the secondary market for housing bonds of comparable maturity. Banks are now offering mortgages with interest rates that are competitive with HFF loans but are not conditional on housing purchases. Average interest on indexed loans from commercial banks and savings banks remained virtually unchanged over the summer but fell by 0.3-0.35 percentage points at the beginning of September. Non-indexed lending rates have risen somewhat in pace with the Central Bank's policy rate.

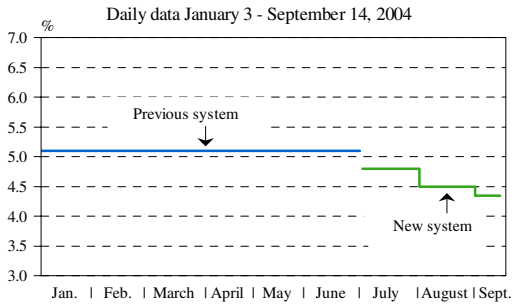
Chart 14

Housing bond and HFF bond real yields



Source: Central Bank of Iceland.

Housing Financing Fund mortgage bond interest rates



Movements in the exchange rate of the króna have only been slight and have hardly had any discernible effect on financial conditions. Equity prices are a different matter. As a rule, higher equity prices imply an easing of the financial conditions of businesses, which can then procure relatively cheap capital through share offerings. Insofar as prices are driven by strategic leveraged buyouts aimed at gaining control of specific companies, however, it is doubtful that companies can in all cases procure substantial amounts of capital at the price at which their shares are listed on Iceland Stock Exchange at the moment.

Foreign short-term interest rates are inching up in pace with rising policy rates in the US, UK and several other countries which are less important for Iceland. Given that the bulk of Iceland's national debt is denominated in euros, however, the crucial factor is that the European Central Bank's (ECB) key interest rates have remained unchanged. Thus the effect of rising foreign short-term rates is still not being felt on any great scale in the interest burden of businesses, financial institutions or the economy as a whole, except insofar as higher interest rates present an incentive for debtors to extend their maturities. They have had reasonable opportunities for doing so, since some of the rise in long-term rates that began last year has unwound. Over the four weeks until the end of August, for example, 10-year euro and dollar T-bond rates were somewhat lower on average than during the period when financial conditions were last assessed in May.

Financial conditions of households are more favourable than in the previous quarter

In light of the above, how should the financial conditions of households, businesses, financial companies and the economy as a whole be assessed? As far as households are concerned, the bulk of their debt is at fixed interest rates, inflation-indexed and long-term. Changes in financial conditions are therefore primarily determined by, first, their short-term debt, and second, by their new long-term borrowing, including refinancing. Roughly 11% of total household debt is short-term or at adjustable rates that track changes in the Central Bank's policy rate fairly closely. Since the bulk of long-term household debt carries fixed interest, and new borrowing and refinancing generally constitute a relatively small part of the total stock, higher short-term rates could be supposed to weigh heavier for the financial conditions of households

than the lower rates on the new HFF bonds. Now that private banks and some pension funds have begun offering mortgages on similar terms to the HFF, the outlook is for refinancing of mortgages on an unprecedented scale. Cheaper mortgages will exacerbated the situation in the already heated residential ment burden increasing.[7] Although the changes in short-term rates in recent months spell a slight deterioration in the financial conditions of households in the short run compared with the previous quarter, they have clearly improved on the whole.

Table 3 Changes in financial conditions since the June forecast

			Sectoral impact[1]			
	4 weeks to May 19	*4 weeks to August 30*	*House-holds*	*Export and traded goods*	*Financial undertakings*	*Other business*
Policy interest rate in real terms[2]	2.6	3.1	–	–	–	–
Short-term interest rate in real terms[2]	2.6	3.2	–	–	+/–	–
CPI-indexed domestic interest rates (yield on 40-year housing bonds)	4.2	4.6	.	.	+/–	.
CPI-indexed domestic interest rates (yield on 40-year HFF-bonds[3])	.	3.8	+	.	+/–	.
Average non-indexed domestic bank rates	11.3	12.1	–	–	.	–
Average CPI-indexed domestic bank rates	8.0	8.0	0	0	0	0
Foreign short-term interest rates (3-month T-bills)[4]	1.7	1.9	–	–	–	–
Foreign long-term interest rates (10-year T-bonds)[4]	4.4	4.2	+	+	+	+
Exchange rate index	123.7	121.7	+	–	+/–	+/–
Equity prices[5]	2,695.9	3,216.6	+	+	+	+

1. '+' indicates more favourable financial conditions, '-' less favourable, '+/-' ambiguous, '0' no change and '.' not applicable. 2. Deflated by 3-year breakeven inflation rate. 3. HFF = Housing Financing Fund. 4. Weighted with euro 2/3 and US dollar 1/3. 5. ICEX-15 index.

Sources: Iceland Stock Exchange (ICEX) and Central Bank of Iceland.

housing market. Especially if loan-to-value ratios are increased to as much as 90%, the new HFF loan system will presumably encourage households to fund their consumption through mortgage equity withdrawal, which is a familiar practice in other countries.[6] The banks' recent offers open up new possibilities in this respect, since a housing purchase is no longer a condition in itself for borrowing. Homeowners can therefore easily take on a higher mortgage than they need in order to prepay existing debt and extend the term of their borrowing, without trading their property. They can deploy the difference on consumption or other expenditure, without their pay-

Financial conditions of businesses marginally tighter due to higher short-term rates

Financial conditions of businesses are more complex to evaluate than households because of their more diverse sources of funding. Besides their domestic borrowing – short- or long-term, indexed or non-indexed – businesses also borrow heavily abroad. Roughly one-third of Iceland's corporate debt stock is foreign in origin. International interest rate trends, coupled with exchange rate developments, therefore exert a strong impact on the financial conditions of businesses. All told, international interest rate developments do not seem to have greatly overburdened Icelandic businesses compared with the analysis in June, although short-term rates have been inching upwards. It should be borne in mind that expectations

6. Households can do this in many ways: by selling a property without buying another in its place, trading down the housing chain without repaying debt, taking out a higher mortgage against housing of the same price, or taking a second mortgage against the same property. The banks' latest move greatly increases the scope for the last-mentioned option.

7. However, in many cases it will take a fairly long time to win back borrowing costs.

of higher short-term rates may encourage businesses to fix their interest rates. However, there are no signs that this has happened yet and informal sources report that the term of interest rates is generally only a few years. Also, interest rate premia have probably been falling. The main change lies in rising domestic short-term rates, but the overall change is likely to be insubstantial.

Slightly tighter conditions of financial companies

Financial conditions of financial companies are probably only slightly tighter than in the analysis made in May and published in June. In real terms the policy interest rate has risen by 0.5 percentage points based on the three-year breakeven inflation rate, and by 0.9 percentage points relative to the Bank's most recent forecast from June (eight quarters ahead). At the same time, domestic financial institutions have been extending their foreign maturities, which also increases their interest burden even though long-term rates have not changed significantly in recent months.

The overall conclusion is that macroeconomic financial conditions have tightened slightly since the last *Monetary Bulletin* was published at the beginning of June. That said, they are still very favourable, and undoubtedly easier than before for households.

II Monetary policy

Policy interest rate raised in June and July

The Central Bank raised its policy interest rate by 0.25 percentage points at the beginning of June and by a further 0.5 percentage points on July 1. Since then the policy rate has been 6.25%. The rise on July 1 had been strongly implied in the introduction to *Monetary Bulletin* which was published at the beginning of June, which said that the outlook could warrant an even larger rise than was announced then. In a press release, the Bank stated that economic developments did not give grounds to deviate from previous intentions to tighten monetary policy further, with demand surging and higher inflation expectations. According to the forecast published on June 1, inflation was expected to rise slightly above the tolerance limit in the following months but subsequently abate below the 2½% target next year. Since that forecast was made the Bank has raised its policy rate twice, by a total of 0.75 percentage points.

The press release also stated that although inflation was partly of external origin, beyond the control of the Central Bank, domestic price increases have also contributed to it. Accelerating inflation, robust growth in private consumption and investment, and rising inflation expectations which had lowered the policy rate in real terms were deemed to have strengthened the case for raising the policy rate. Other things being equal, the large investment projects on the horizon would require further increases in coming months. It was stated that the pace of interest rate increases would depend on a number of factors, not least inflation developments and domestic demand growth.

The appropriate monetary stance must be evaluated in light of intensifying large-scale investments

Any evaluation of the current or necessary monetary stance needs to take into account the special conditions pertaining at the moment. On the horizon is one of the most intense investment periods in Iceland's history and it is obvious that a very tight monetary stance is needed while it takes place. The hydropower and aluminium industry investments will inevitably exert a sizeable crowding-out effect which will partly be transmitted through a tighter monetary stance. Although the scale of the investments is well known, the macroeconomic impact is clouded by uncertainties. While the economy has previously experienced investment episodes on a similar scale as a proportion of GDP, these have happened under completely different conditions. For example, the economy is much more open than during the wave of investment projects in connection with the aluminium industry at the end of the 1960s. A major factor at work now is that Iceland is part of the integrated European labour market and allows unrestricted capital movements. Monetary policy implementation has also been radically transformed and the exchange rate of the króna floates freely in the foreign exchange market.

One of the main benefits of the changes in monetary policy implementation in recent years has been to enable much more timely responses to foreseeable shocks like the pending investments. The problem lies in the limited historical experience that can be drawn upon. Inflation targeting is still in its infancy

and none of Iceland's fellow inflation-targeters has had to tackle a shock on a comparable scale.

Interest rates will need to rise – the question is, how fast?

Despite the highly uncertain macroeconomic impact of the planned investments, it seems certain that an even tighter monetary stance will be needed to keep inflation under control. The problem faced by the Central Bank is to weigh up how fast the stance needs to be tightened. In this context it should be remembered that monetary policy implementation is not an exact science. Uncertainty surrounds most aspects of its implementation and the impact is transmitted with a long but variable lag. There is considerable uncertainty about the transmission mechanism of monetary policy, as reflected for example in the difficulty – in Iceland or elsewhere – of forecasting exchange rate developments. Consequently, monetary policy cannot be applied for short-term fine-tuning of demand in the economy. A forward-looking monetary policy looks at recent and current demand primarily as an indicator of medium-term developments. A crucial factor in monetary policy decisions in the near future must be the simple fact that the peak of the investment projects is moving ever closer.

Inflation risk lower in the short term than the long run

The Central Bank publishes its macroeconomic and inflation forecast twice a year. Nonetheless, the Bank reviews its forecasts at least four times a year, as mentioned above. A review of the Bank's forecasts from the beginning of June does not give grounds to expect that unfolding developments will diverge significantly from them. The exchange rate has shown little change but the króna is slightly stronger than when the forecast was made, which has a disinflationary effect in the short term. However, the long-term import price outlook has worsened which, in isolation, has increased the upside risk to the June forecast for the second half of 2005 and the whole of 2006.

When the Bank prepared its macroeconomic forecast in June, the quarterly national accounts for this year had not been published. Data for two quarters have now been published and domestic demand seems to be headed for a somewhat higher rate of growth than forecast in June. The policy rate hike should dampen private consumption, but structural changes in the residential housing market are likely to outweigh that effect. When aluminium-related investments gather momentum in the autumn and into next year, private consumption growth will be stimulated, other things being equal. And while labour market data suggest some excess capacity, it is uncertain to what extent this can be used as a reserve pool of labour when construction activity peaks and its impact has extended to most sectors of the economy.

Slightly tighter monetary stance has not changed financial conditions significantly

Despite the slightly tighter monetary stance implied by the policy rate hikes in June and in particular in July, these have not managed to bring about much change in the financial conditions of households and businesses. In broad terms they are likely to have remained more or less unchanged. Other factors have acted in the opposite direction, such as a considerable reduction in interest rates on housing loans and greatly increased scope for remortgaging and even mortgage equity withdrawal. Share prices have also continued to climb, offsetting higher short-term interest rates in Iceland and abroad. Rising inflation expectations, especially among households, weaken the restraint imposed by a higher policy rate.

Fiscal policy must play a key role in the coming years

The Central Bank has repeatedly pointed out the key role that fiscal policy should play in economic policy over the next few years, by mitigating the impact of the large-scale investment projects. The government set itself a fairly ambitious expenditure target for the current year. It seems that some effort will be needed to achieve this in full. More important, however, is to restrain expenditure for the next two years. This is a particular challenge in light of planned tax cuts amounting to 20 b.kr. over the next three years. To offset the impact of lower taxes at the same time as measures are needed to mitigate the impact of the aluminium-related investments, considerable cutbacks in public sector spending are required. A credible long-term plan to this effect would bolster economic policy and reduce the likelihood of putting an excessive burden on monetary policy which could undermine financial stability and the competitive position of domestic industries.

Financial markets and Central Bank measures[1]

Tighter monetary stance

The Central Bank of Iceland announced a rise of 0.25 percentage points in its policy interest rate on June 1, 2004 and a further 0.5 percentage points on July 1. The impact was immediately felt on interest rates in the interbank króna market, but the change in the exchange rate was fairly small and short-lived. This summer the exchange rate index moved within a fairly narrow range. Liquidity was unequally distributed among financial institutions and could only be levelled out with Central Bank intermediation. New Housing Financing Fund (HFF) bonds were issued at the beginning of July. Towards the end of August, the commercial banks and largest savings banks announced long-term mortgage loans on similar terms to the HFF, except that there are no conditions confining them to real estate transactions. In mid-June, KB banki acquired a Danish bank, and subsequently sold new share capital under the largest offering in Iceland's history, for more than 39 b.kr. Central banks around the world have raised their policy rates over the past three months. Equity prices in Iceland continued to climb.

Two policy rate hikes ...

In light of accelerating inflation and the outlook that, other things being equal, it would remain above target, the Governors of the Central Bank of Iceland decided to raise the policy interest rate by 0.25 percentage points on June 1. Although some of the growth in inflation could be traced to rises in items that are beyond the scope of monetary policy, the development of other items posed a risk that inflation might move beyond the tolerance limits. At the same time it was announced that further interest rate increases could be expected shortly, unless new data provided a strong indication of an improved inflation outlook. When price developments in June and other economic statistics published then suggested a rather poorer-than-expected outlook, the Central Bank decided to raise the policy interest rate again on July 1, by a further 0.5 percentage points. Since the increases began in May, the Central Bank had by then raised the policy rate by 0.95 percentage points.

1. This article uses data available on August 31, 2004.

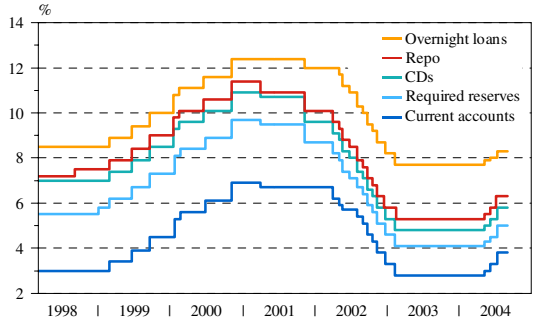
... and tighter interest rate corridor

The spread between the Bank's highest and lowest interest rates was narrowed when the policy rate changed in June and July. In May, the interest rate corridor was 4.9 percentage points, but was tightened to 4.5 percentage points in June and July. The O/N loans rate in July was 8.25% and interest on current

Chart 1

Central Bank interest rates

Weekly data March 3, 1998 - August 31, 2004



Source: Central Bank of Iceland.

accounts with the Central Bank 3.75%. The interest rate on required reserves was set at 5% as of July 11.

Interest rate steps

Since June 1, the Bank has changed its interest rates in steps which are multiples of 0.25 percentage points, instead of 0.1 percentage point as before. This is in line with the general western central bank practice. Chart 1 shows the development of Central Bank interest rates in recent years.

Shorter-term instruments

On June 1, new rules went into effect which shortened maturities in the Central Bank's regular (weekly) repo facilities for credit institutions from 14 days to 7 days. Purposes of this change included eliminating the one-week overlap in the old fortnightly auctions, and bringing practice more closely into line with that of the European Central Bank (ECB). The changeover also enabled more systematic liquidity management by credit institutions and has facilitated the Central Bank's short-term liquidity forecasting.

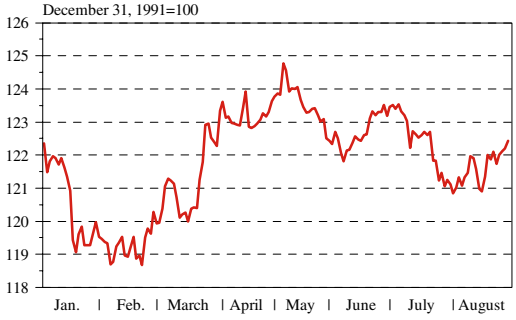
Little change in the exchange rate

The exchange rate of the króna has been stable in recent months. The exchange rate index measured just below 121 at the lowest and reached a high of 123.5 over the period from mid-May to the end of August (Chart 2). Summer trading has been similar in volume terms to the same season in 2000 and 2002. Daily turnover in the forex market exceeded 5 b.kr. only three times over this period. Presumably, part of the explanation lies in fewer mergers and acquisitions than in 2003, while the merger between Kaupþing and Búnaðarbanki Íslands, to form KB banki, has probably reduced interbank trading. The Central Bank has made regular currency purchases from market makers according to a schedule announced in November last year. Currency to the value 2.5 million US dollars is purchased twice a week. The purpose of the purchases is to strengthen the Bank's foreign currency reserves; it also acquires currency to meet the Treasury's requirements. At the end of August, the Bank's foreign reserves amounted to 70 b.kr.

Chart 2

Exchange rate index of the króna

Daily data January 5 - August 31, 2004



Source: Central Bank of Iceland.

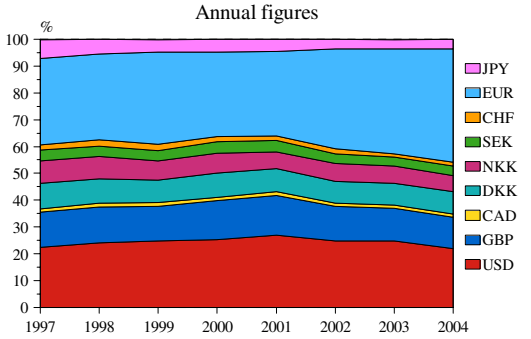
Revised currency basket

As usual, the currency basket was revised at the beginning of July to reflect as closely as possible the composition of Iceland's external trade in goods and services with major trading partner countries. In

Chart 3

The trade-weighted currency basket since 1997

Annual figures



Source: Central Bank of Iceland.

Table 1 New currency basket 2004

Region		*New currency basket (%)*	*Change on previous basket (percentage points)*
USA	USD	21.84	-2.89
UK	GBP	11.89	-0.46
Canada	CAD	1.07	-0.02
Denmark	DKK	8.41	0.17
Norway	NOK	5.90	-0.51
Sweden	SEK	3.68	0.26
Switzerland	CHF	1.39	0.18
Euro area	EUR	42.37	3.30
Japan	JPY	3.45	-0.03

Source: Central Bank of Iceland.

recent years the weight of the euro has been increasing while the dollar has been diminishing, as shown in Chart 3. The latest currency basket and changes since last year are shown in Table 1.

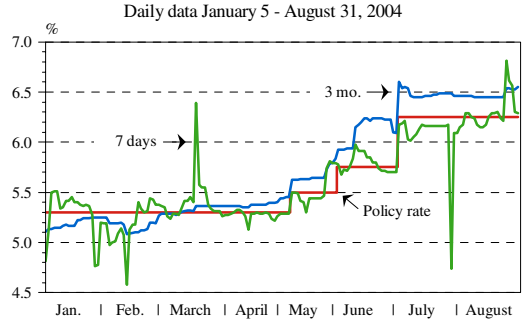
Interest rate developments and liquidity position

Interest rates rose in the interbank króna market on the back of the Central Bank's policy rate rise. The current upward yield curve indicates expectations of further interest rate hikes in the months to come. Chart 4 shows the development of one-week and three-month rates in the interbank króna market, mapped against the policy interest rate. Table 2 shows summer turnover in the interbank markets and at Iceland Stock Exchange (ICEX), with comparable data for the past five years. Liquidity was fairly ample at financial institutions, and at the end of July, just before the large Treasury payout of mortgage interest rebates and child allowance, interbank yields dropped by 1.5 percentage points for a single day. The Central Bank and the Treasury reached an agreement to pay, at the beginning of August, half of a Central Bank bond that matures at the beginning of December. The National Debt Management Agency informed the market of this decision more than a week in advance. This bond is the remainder of a loan taken by the Treasury in June 2001 to strengthen the Central Bank's foreign currency position, part of which was in the form of a capital contribution. Repo trading was brisk with an average outstanding stock of 27 b.kr. in June, July and August. The average stock of issued certificates of deposit (CDs) amounted to 10 b.kr. over the same period. Chart 5 shows the outstanding stock of repos and CDs so far this year. Noticeably, there is relatively little intermediation of large amounts between participants in the market, as shown by the Central Bank's CD issues on the same day that it channels liquidity to credit institutions with repos.

Chart 4

Interest rates in the interbank króna market and the policy interest rate

Daily data January 5 - August 31, 2004



Source: Central Bank of Iceland.

Table 2 Summer trading (June-August)

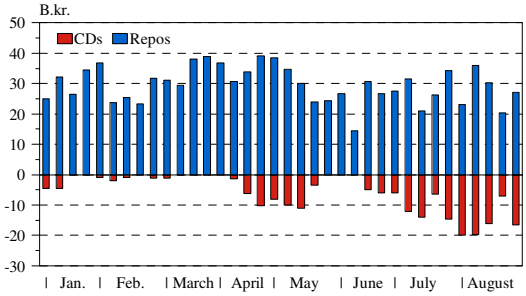
B.kr.	*2000*	*2001*	*2002*	*2003*	*2004*
Interbank króna market	108	135	109	136	197
FX market	246	292	195	318	165
Currency swap market	0	0	39	32	41
Central Bank O/N lending	78	137	65	26	48
Central Bank certificates of deposit	0	0	0	0	144
Central Bank repos	205	392	512	414	365
ICEX, equities	9	28	64	103	127
ICEX, bonds	52	136	191	246	365

Sources: Iceland Stock Exchange (ICEX) and Central Bank of Iceland.

Chart 5

Outstanding stock of Central Bank repos and CDs

Weekly data December 31, 2003 - August 31, 2004



Source: Central Bank of Iceland.

Changes at the Housing Financing Fund ...

At the beginning of July, the Housing Finance Fund made major changes with the issue of a new bond class, HFF bonds, which it offered to swap for the bulk of its earlier issues. On the whole, the changeover went smoothly. However, one unfortunate consequence was that trading with HFF securities stopped for a whole week. This caused some problems in the banking system when HFF bonds could temporarily not be pledged in the customary manner as collateral for Central Bank facilities, in which they had previously played a key role.

... and closed auctions

The HFF arranged a closed auction of HFF bonds on July 28, selling 5 b.kr. to foreign investors with a final maturity in 2044. Average yield was 3.91% after commission. Subsequently, it was announced that interest rates on HFF mortgage loans would initially be 4.5%. The auction was announced after its completion. A second closed HFF auction was made on August 26, when 2.5 b.kr. of bonds were sold with a maturity in 2024 and 4.5 b.kr. with a maturity in 2044. Average yield was 3.77% including commission, and subsequently the HFF lowered the rate on its mortgage loans to 4.35%.

Commercial banks and savings banks offered mortgage loans

On August 23, KB banki announced that it was offering price-indexed mortgage loans to customers, on certain conditions, for a term of 25 or 40 years with a fixed interest rate of 4.4% plus a surcharge for prepayment. Landsbanki Íslands and Íslandsbanki announced similar loans and so did savings banks SPRON and Sparisjóður Hafnarfjarðar shortly afterwards, then other savings banks. A real estate transaction is not a condition for receiving these loans, which may be taken for refinancing, but a first priority pledge is a condition in all cases. Further conditions are that borrowers use certain services offered by the lender, such as a salary account. Loan-to-value ratio can be as high as 80% in the Greater Reykjavík Area and Akureyri, but varies elsewhere depending on the bank. The maximum mortgage amount is 100% of fire insurance value. Frjálsi fjárfesingarbankinn investment bank joined the fray with a similar offer. A number of pension funds followed suit and lowered interest rates on existing loans to members, as well as offering new loans on similar terms to those of the banks. Maximum collateral that pension funds can lend against is 65% of the estimated market value of the property.

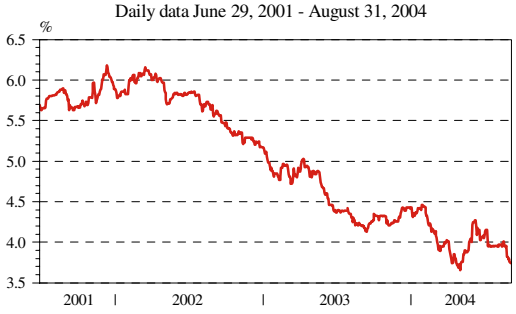
Bond rate developments

Long-term interest rates have been decreasing fairly steadily since March 2002, as seen from Chart 6, which shows a combined yield curve composed of housing bonds with a final maturity in 2026, housing authority bonds with a final maturity in 2020 and HFF bonds with a final maturity in 2024. Yields hit a low at the end of April this year, picked up to a high in June, then have dropped again. Long-term bond yields in Iceland are certainly at one of their lowest levels for a very long time. Chart 6 maps the lowest yields over several years on 25- or 20-year housing bonds, housing authority bonds and HFF bonds, and gives a good picture of the trend.

Chart 6

Combined yield curve of housing bonds, housing authority bonds and HFF bonds

Daily data June 29, 2001 - August 31, 2004



Source: Central Bank of Iceland.

Other central banks' interest rate changes, and interest-rate differentials

In the US, the Federal Reserve raised its funds rate in June and August, by 0.25 basis points each time. The Bank of England did likewise. The Swiss National Bank raised its repo rate by 0.5 percentage points and the New Zealand Reserve Bank increased its official cash rate by 0.25 percentage points in June and July. Table 3 shows policy rates in selected countries and

Table 3 Policy interest rates of selected central banks

%	*December 31, 2003*	*August 31, 2004*
Central Bank of Iceland	5.30	6.25
Reserve Bank of Australia	5.25	5.25
Reserve Bank of New Zealand	5.00	6.00
Bank of England	3.75	4.75
Norges Bank	2.25	1.75
Sveriges Riksbank	2.75	2.00
Bank of Canada	2.75	2.00
Federal Reserve System	1.00	1.50
European Central Bank	2.00	2.00

Source: Central Bank of Iceland.

changes in them so far this year. With their respective hikes, central banks are responding to expansionary pressures and inflationary risks. Iceland's interest-rate differential with abroad (trade-weighted) has risen from 3.5% (T-notes) and 3.3% (interbank market rates) since mid-May 2004 to 4.2% and 3.9% respectively towards the end of August.

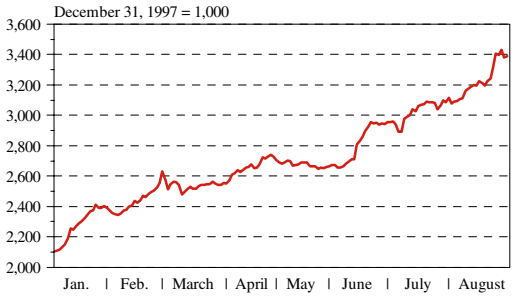
Equity trading

Equity prices continued to climb at Iceland Stock Exchange and the ICEX index has gained almost 60% so far this year. Relatively few companies have led this trend, including the three commercial banks. In mid-June KB banki acquired the Danish bank FIH, partly financing it with more than 39 b.kr. in new capital raised among existing shareholders. The share issue was fully subscribed in the largest offering ever witnessed in Iceland. Chart 7 shows the development of the ICEX-15 index so far this year.

Chart 7

The ICEX-15 equity price index

Daily data January 5 - August 31, 2004



Source: Iceland Stock Exchange (ICEX).

Financial stability

The financial system is fairly resilient in the face of macroeconomic imbalances

The macroeconomic environment and operating conditions of financial companies has changed slightly since the last financial stability reoport was published in March, but the overall picture is the same. At that time, macroeconomic conditions were found to be generally speaking favourable, while the main causes for concern were credit expansion, which was largely financed from abroad, and high asset prices. The same concerns are still present. Asset prices (i.e. equities and real estate) have continued to rise since the last analysis, increasing the level of uncertainty although a substantial downturn in prices is unlikely in the near future. Fiercer competition has begun for long-term housing finance with lower interest rates and higher loan-to-value ratios. It was foreseeable that macroeconomic imbalances would increase as a result of the large-scale investments that have been launched for the aluminium industry and will continue for the next couple of years. Consequently, the risk to the financial system has been increasing. On the positive side, the resilience of financial companies and markets has been improved at the same time and they are deemed to be fairly well equipped to meet developments ahead.[1]

Financial stability over the next decade will be largely determined by how successfully the economy can be guided through the pending wave of large-scale investments. It is important to prevent the economy from overheating, with an accompanying upturn in inflation. This would reduce the probability that a very tight monetary stance will be needed, which could weaken the foundations of the financial system. Insofar as the economy is now entering this massive investment phase with rather higher inflation, a wider current account deficit and a more positive output gap than was assumed in the last financial stability report in March, the risks have increased somewhat.

For its part, the Central Bank has responded by raising interest rates to secure price stability. A tighter fiscal stance can substantially reduce the risk of financial instability in the next few years. Imposing an excessive burden on monetary policy to keep demand in check during the investment period will erode the competitive position of the export and traded goods sectors and drive up finance costs. A medium-term fiscal framework, aimed at keeping public sector expenditure in check for the next two years, would strengthen the fundamentals of the financial system and the economy as a whole.

Besides the intensifying investment projects, two factors warrant particular consideration from the perspective of financial stability. One is rapid lending growth and the growing indebtedness of both households and businesses, and the other is high asset prices. International experience shows that, in combination, these two factors can pose risks. Such a situation can prevail for a long time before its negative ramifications emerge, and sometimes the adjustment is so slow that it does not put financial stability under serious strain. Although both house-

1. This article uses data available on September 10, 2004.

hold and business balance sheets have become more exposed to volatility in asset prices and exchange rates in recent years, their position seems strong over a horizon of a few years. The planned extension of financing for homebuyers by the public Housing Financing Fund (HFF) could raise household debt, and so could the commercial banks' and savings banks' recent offers of long-term mortgage loans at lower interest rates. Among businesses, debt continues to climb – part of it now driven by leveraged buyouts – but strong EBITDA boosts their resilience. The main concerns involve households' and businesses' ability to withstand major economic shocks, although these are unlikely over the next few years. However, historical experience shows that such conditions must be expected from time to time. From such a long-term viewpoint, macroeconomic conditions for financial stability are deemed to have weakened somewhat since the last report in March.

The position of financial companies was considered fairly solid in March, and that assessment remains unchanged. Profitability of commercial banks and savings banks was very robust in the first six months of this year and their capital ratios were relatively strong. Favourable price developments in domestic securities markets and position-taking are the main drivers of their profitability. Expansion abroad has broadened the banks' revenue base, but the bulk of their profits is still domestic in origin.

Icelandic commercial banks have been determinedly expanding abroad in recent years and their management have stated that they will continue this strategy in the medium term. Against this background it is interesting to ponder the way in which this development calls for a review of the Central Bank's activities. Internationalisation of banking has resulted in a raft of changes in the Central Bank's work and closer cooperation with participants in Iceland and abroad, although much clearly remains to be done in this respect. The Icelandic financial system has expanded its horizons and is becoming increasingly international in character and more dynamic. The Central Bank adapts its activities to these circumstances on the basis of the legislation governing it, as described further in the Appendix.

The banks' large-scale foreign financing has been noted by domestic and international analysts of the Icelandic financial system. International rating agencies have even considered that the high level and short-term character of national debt could constrain the ratings they award to the Republic of Iceland and Icelandic banks. The Central Bank has urged the banks to pay careful attention to their financing and credit ratings, and some positive results have been produced. An important point was reached when the banks began lengthening the maturities of their foreign-denominated funding late last year, and for more than a year now their short-term borrowing has not increased. It is also reassuring to note that the banks' credit ratings have been upgraded over the past two years. In collaboration with the Financial Supervisory Authority (FME), the Central Bank held talks this summer with experts from the largest commercial banks on foreign currency liquidity management. Views were exchanged on sound practices and the usefulness of publicly announcing the banks' risk management standards. An agreement was reached on the principles that contribute to sound practices for foreign currency liquidity management, which are stated in Box 3. The FME has also announced these principles in a discussion paper in preparation for setting guidelines to this effect. It is hoped that the outcome will be to contribute to more prudential foreign currency liquidity management.

In domestic securities markets, a number of changes have been made in trading and settlement implementation, and the efficiency of the markets has been put to the test over the past six months. Clearing and custody of HFF bonds in Euroclear sharpens competition and thereby discipline in the domestic market. Helsinki Stock Exchange has formally joined the Norex alliance, substantially strengthening that partnership. The equity offering by KB banki (Kaupthing Bank) was the largest ever conducted in Iceland, and demonstrated the market's ability to handle a major offering and make large-scale payment transfers flawlessly. On the whole, the HFF bond issue and swaps for older housing bonds went smoothly, but shortcomings were noted, mainly in the short deadline for swaps, limited information and lengthy registration process for the bonds.

Practical experience has now been gained of the rules on activities of payment systems, which the Central Bank set in October 2003. In the Bank's view, these rules have contributed to improved legal security and transparency with respect to system

operation. Since mid-2002, the Central Bank has been cooperating closely with credit institutions to ensure that satisfactory collateral is always at hand for their payment system authorisations. Through the reforms of recent years, the Bank considers that significant progress has been made in limiting legal, default, liquidity and settlement risks in the Icelandic payment systems. As far as the next steps are concerned, the Central Bank identifies both the opportunity and the need for careful consideration of operational risk in payment systems.

Financial stability has two aspects. One is the risks that the financial system faces, and the other is its resilience. Risk is always present, although it can be contained to a certain degree. Insofar as risk cannot be avoided, tasks for promoting financial stability must focus on strengthening the resilience of the system, i.e. promoting an efficient and safe financial system, as the Central Bank of Iceland Act says. It was foreseeable that macroeconomic imbalances would increase alongside the large-scale investments for the aluminium industry that have now been launched and will continue over the next few years. The risks posed to the financial system have grown accordingly. It is gratifying to note that the resilience of financial companies and markets has been increased at the same time and can be considered fairly strong.

Macroeconomic indicators and external conditions

Recovery continues among trading partner countries, but at a slower pace

Economic developments among trading partner countries affect financial stability in Iceland in two ways in particular. First, economic conditions in trading partner countries have an impact on Iceland's terms of trade and the profitability of businesses, especially exporters. Second, they affect the rates of interest that financial companies, their customers and other borrowers pay to abroad. International economic developments may also affect the exchange rate of the króna and thereby the finances both of financial institutions and their customers.

Since the Central Bank's last analysis of the macroeconomic conditions for financial stability in March, the global economic recovery has continued in all main market regions. The employment trend in the US from March to May was seen as bolstering the recovery. The optimism that the data aroused was dampened when job creation in June and July took a dive and output growth slowed down in Q2. Nonetheless, the general opinion is that the low will be temporary, and most observers have linked the slowdown in growth with the sharp rises in oil prices in recent months, which seem likely to unwind to some extent in the near term.

Interest rates on an upward path in the US and elsewhere – forex markets subdued

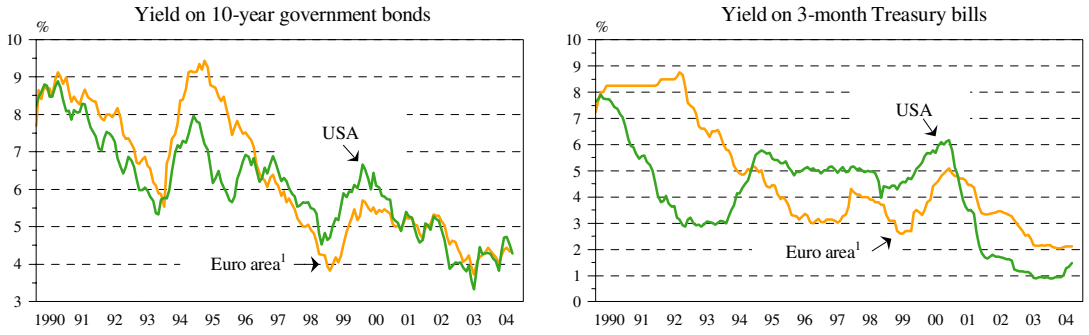
This trend can be seen among other things in the Federal Reserve's decision to raise the US federal funds rate by 0.25 percentage points in August. This was its second interest rate hike this year, on the back of a rise of 0.25 percentage points in June. Nonetheless, the funds rate remains extremely low at only 1.5%. The Bank of England has also raised its interest rates considerably since the last financial stability report in March, by a total of 0.75 percentage points. The Bank of England's repo rate is now 4.75%. It began raising interest rates before most other central banks and since last autumn it has upped the repo rate by 1.25 percentage points in five steps. The European Central Bank is still holding back and has maintained its minimum bid rate at 2%, as recovery in Europe proves sluggish. Interest rate developments in the euro area are most important for financial companies in Iceland, because roughly two-thirds of national debt is denominated in euros.[2]

The Fed's rate rise was not much of a surprise and should not affect the earlier assessment of external conditions for financial stability. US 10-year T-bond rates have inched down recently, after a rise around the middle of the year, and are currently down year-on-year and only marginally higher than in March. The spread between short-term and long-term bonds has shrunk considerably, since the drop in 10-year rates has been accompanied by a rise in shorter-term rates. For example, the spread between 2- and 10-year US T-bond rates was in the range 2.2-2.4 percentage points on average in Q1/2004, but has recently narrowed to less than 1.8 percentage points. Among other things, climbing two-year rates signal

2. See Box 1 in *Monetary Bulletin* 2004/2, pp. 7-8.

Chart 1

Foreign interest rate developments 1990-2004 (monthly averages)



1. Euro area from January 1994 (long-term rates) and November 1997 (short-term rates); Germany before that. *Sources:* EcoWin, Eurostat.

that short-term rates are expected to rise faster over the next two years than was previously thought. In the euro area, long-term rates have recently been at broadly the same level as in the weeks before the last financial stability study in March.

As described in detail in *Monetary Bulletin* 2004/2 (Box 1), Iceland's high proportion of debt carrying variable interest rates or short maturities leaves the economy highly exposed to changes in foreign interest rates, not least businesses and financial institutions. However, maturities have tended to lengthen recently. As stated elsewhere (see the section on financial conditions on pp. 19-22), international financial conditions have not changed much so far. Thus the economy's exposure towards interest rate volatility has not been put to the test yet.

Sharp jump in external debt in the first half of 2004

Overseas expansion by Icelandic companies, in particular in the financial sector, has swollen Iceland's national assets and debts substantially, but its debts by considerably more. The net external position of the economy deteriorated during H1/2004, largely due to increased foreign debt of the banking sector. The net debt position[3] of the economy grew from 100% of GDP at end-2003 to 107% at the end of Q2/2004.[4] Gross external debt[5] was equivalent to 157% of GDP at the end of June, or 1,370 b.kr.[6] Credit rating agencies that award ratings to the Republic of Iceland have all described their concerns about this development for some while, and some have even stated that the main constraint on upgrading Icelandic ratings – or even a potential reason for downgrading them – would be a significant deterioration in the external debt position of the economy.

The external position may be fairly sensitive to exchange rate fluctuations. However, the main world currencies have not been very volatile since March. The euro-US dollar rate has remained well below the high recorded early this year, lying in the range 1.19 to 1.23 for most of the time. At the same time the yen has slipped against the US dollar.

High oil prices have a sizeable impact on various business sectors

Marine product prices have firmed slightly since March, but are still down year-on-year. Aluminium prices have remained quite buoyant, after entering a climb in spring 2003. Changes in export prices have had little effect on assessments of the macroeconomic conditions for financial stability. On the other hand, import prices have soared since the last study in March, especially prices of commodities, oil and petrol. Over Q1/2004 the average global oil price was about 32 US dollars per barrel, while over the past three months it has been around 40 dollars and temporarily passed 44 dollars (see Box 3 in the chapter on Economic and Monetary Developments

3. Net debt (liabilities less assets) excluding equities.
4. Provisional figures.
5. Less equities.
6. Provisional figures.

and Prospects). Higher oil prices can have a sizeable impact on various business sectors, not least fisheries.

Wider-than-expected current account deficit since March exacerbates the risk of instability later on

When the last financial stability report was made in March, no data were available for output growth over the whole of 2003 or for any quarter of the current year. In the event, growth last year turned out higher than expected, at 4.3% instead of 2¾% as forecast in March. First-half figures for growth do not indicate any slowdown so far this year, as discussed in the preceding chapter on Economic and Monetary Developments and Prospects. Gross fixed capital formation has soared, as expected, and private consumption growth in H1/2004 exceeded the forecast in June for the year as a whole.

In pace with buoyant domestic demand, the current account deficit has widened faster than forecast in *Monetary Bulletin* 2003/4 and 2004/1 (December 2003 and March 2004). In June the Bank forecast a current account deficit this year equivalent to 8¾% of GDP, compared with a 7½% deficit in the forecast in March, when the last financial stability report was published.

From the perspective of financial stability, it is no less important that in June the Bank forecast a much wider deficit in 2005 and 2006, when power station and aluminium smelter investment hits a peak. At the same time a lower share of the deficit is expected to be accounted for these investment projects, namely only one-third. Although the deficit is expected to be fairly easy to finance over the next two years, this position raises the risk of difficulties later. It should be pointed out that financial stability analyses need to examine a longer horizon than generally underlies monetary decision-making. Greater external imbalances are therefore unfavourable from a financial stability viewpoint, even though the negative effects are unlikely to be felt in the next few years.

Inflation spike at the beginning of the summer

Monetary Bulletin 2004/1 in March reported low inflation and a favourable outlook for prices, but pointed out that much would depend on exchange rate developments. In May and June there was a spike in inflation, which moved close to the upper tolerance limit of the target in the latter month. According to the Bank's June forecast, this upturn in inflation, which occurred earlier than expected, should reverse in the course of next year. As always, the forecast makes the technical assumption that the exchange rate will remain unchanged and hence strong. Higher oil prices in the world market have contributed to the recent rise in inflation, which may be hoped to unwind within the forecast horizon. In the longer run, housing market developments also have a substantial impact. Now that the large-scale investment projects are getting under way it is important to look further ahead. There is an upside risk of inflation as the investment period progresses, and the Bank's monetary policy must take this into account. Exacerbating the risk is the fact that the economy is now entering this intense investment phase with a tighter output gap and more inflation than had previously been assumed.

As has often been pointed out in previous financial stability reports, an unexpected surge in inflation can have a severe effect on the financial position of households because of the widespread use of price indexation, especially if it coincides with a weakening of the currency and general economic contraction. Successful application of monetary policy to contain inflation while the economy is robust reduces the probability of such a scenario.

Residential housing prices still rising, but growing supply may counteract the rise in the near future

Most if not all financial crises have been preceded by soaring asset prices and lending growth in the countries concerned.[7] Since both these trends have characterised economic developments in Iceland in recent years, there is good reason to monitor asset price developments closely. This applies to real estate prices in particular, but also to equity prices. Both have been rising sharply over the past year. In the last study of the macroeconomic conditions for financial stability in March, the upswing in residential housing prices appeared to have come to a halt, or at least slowed down significantly. Smaller rises in housing prices were seen as a positive factor for financial

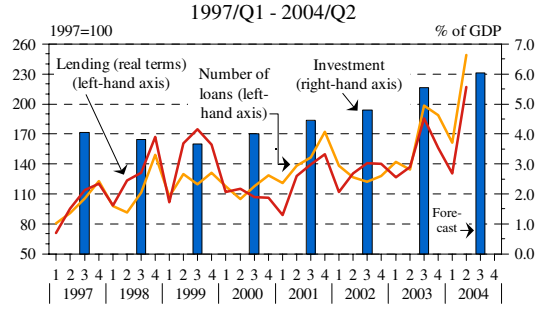
7. See e.g. Borio, Claudio and Philip Lowe, Asset prices, financial and monetary stability: exploring the nexus, BIS Working Papers 114, July 2002.

stability in the long term. However, it was pointed out that uncertainties in the labour market due to wage negotiations and planned changes to housing financing arrangements may have temporarily dampened demand. This inference was probably correct, because around the time that wage settlements were reached, housing prices began to rise faster than for some while before. It cannot be ascertained that growth has slowed down even though the twelve-month rise in housing prices in the Greater Reykjavík Area slowed down slightly this summer. Investment in residential housing soared in 2003 and the outlook is for equally robust growth this year. Some estate agents feel that strong supply of residential housing is beginning to counter price rises in the Greater Reykjavík Area, apart from a few areas close to the city centre.

Chart 2

Residential housing investment and HFF lending[1]

1997/Q1 - 2004/Q2



1. Amount of housing bond loans, deflated by housing prices in the Greater Reykjavík Area. No. of disbursed loans for newbuildings and renovations. Figures for residential housing investment are annual. *Sources:* The Land Registry of Iceland, Statistics Iceland, Housing Financing Fund (HFF) and Central Bank of Iceland.

Lending growth has slowed down, but is still excessive

The surge in lending that has accompanied rising asset prices in recent years – since the two phenomena are closely related – has caused the Central Bank some concern. Data released after the last analysis was published in March indicate even faster lending growth than before, and twelve-month growth in domestic lending by deposit money banks (DMBs) appeared to peak in March and April at around 24%. Despite slowing down slightly, growth is still far beyond a rate that is compatible with monetary or financial stability in the long run. Household and business debt is examined in more detail below.

Equity prices have soared since March

Monetary Bulletin 2004/1 in March reported sharp rises in equity prices over a short period, but also pointed out they were still much lower than over the period 2000-2001, judged on the basis of common measures of share prices such as P/E ratio. These criteria, however, suggested that the price of shares in specific companies was extremely high. A sign of weakness was identified in the way that the buoyant demand seemed to be sustained by relatively few investors, while institutional investors were holding back. Leveraged buyouts had also driven up certain companies' share prices. This was seen as increasing the risk of a chain reaction of falling equity prices later, if any buyers involved in a leveraged buyout encountered problems in honouring their obligations. More cautious equity trading was therefore called for. Since then, prices of equities listed on Iceland Stock Exchange (ICEX) have risen further, by more than 40% from mid-March to mid-September. Accordingly, there is reason to take an even more critical view of equity prices than before.

Interest rates on an upward path

Since the last financial stability report in March, the Central Bank has raised its policy interest rate three times, by a total of 0.95 percentage points to 6.25%. As pointed out above, these hikes have probably squeezed the financial conditions of businesses, but the reduction in mortgage interest rates under the new housing loan system will probably outweigh this for households. Housing bond yields have in fact inched upwards after the last policy rate hike, but trading in these instruments has almost dried up following the loan system changes. Developments in the secondary market for housing bonds should not affect household finances except through their bond holdings. Although financial conditions of businesses have tightened slightly with higher interest rates in Iceland and abroad and the strengthening of the króna, overall financial conditions have shown little change thus far.

Households

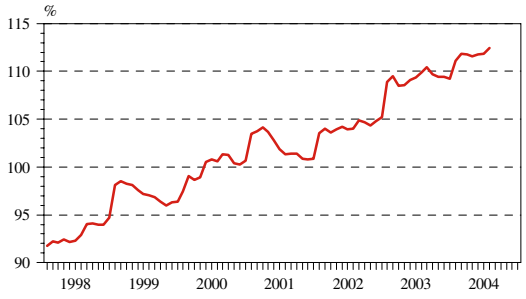
The last two financial stability reports, in March 2004 and November 2003, have found the position of households fairly solid in the short run, but pointed

out large and growing debt coinciding with a historical high in housing prices as a long-term risk factor. The reason for considering the households' short-term position fairly solid is the apparently low risk of income-side shocks during the heavy investment period over the next three years. However, there could be an upside risk of a reversal when the investment episode peters out. There have been no indications of substantial household arrears in the banking system that might signal difficulties, although the number of unsuccessful distraint actions could indicate the opposite, as discussed in more detail below.

Chart 3

Real wages January 1998 - July 2004

Based on the wage index and the CPI less housing cost



Sources: Statistics Iceland and Central Bank of Iceland.

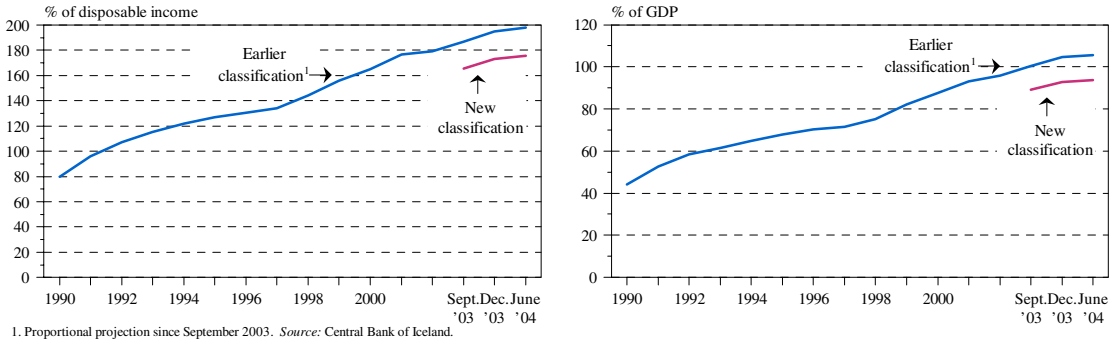
part of these gains. Employment prospects are generally good, even though seasonally adjusted unemployment has edged upwards. Short-term interest rates have risen somewhat in pace with the Central Bank's policy rate, but have been offset by cheaper housing loans. Thus the short-term position looks fairly solid. As before, the main cause for concern is the interaction of rising debt, to which no end appears in sight, with high residential housing prices.

Household debt rose sharply in 2004 but growth has slowed down this year

After continuous increases for almost twenty-five years, Icelandic household debt rose exceptionally fast in 2003, by more than 15%. Household debt at end-2003 is estimated at roughly 180% of disposable income and 96% of GDP. These ratios are calculated on the basis of the reclassification of debt in September 2003 which caused some reduction from previous estimates – year-on-year figures have been adjusted to eliminate the estimated impact of the reclassification.[8] Debt accumulation has continued so far this year, but rather more slowly than last year. From the beginning of the year to the end of June, household debt grew by 5%. In recent months the increase in debt appears to be mostly confined to housing loans, which carry relatively low interest

Chart 4

Household debt as ratio of disposable income or gross domestic product 1990-2004



1. Proportional projection since September 2003. *Source:* Central Bank of Iceland.

All the signs are that the earlier analysis of the position of households still broadly holds. Real wages are continuing to rise year-on-year although the upturn in inflation in recent months has eroded

8. Under the new methodology, 93 b.kr. of household debt was reclassified to businesses and the public sector.

compared with other credit forms and is repaid over a long period.

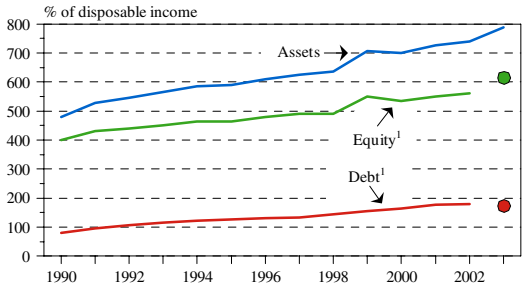
DMBs and some pension funds recently began offering housing loans at comparable terms to the HFF. Unlike the HFF loans, a housing purchase is not set as a condition for these loans. This new competition is likely to speed up prepayment of older housing loans carrying higher rates of interest, e.g. housing bond loans and pension fund loans.[9] It will also facilitate households in financing consumption by mortgage equity withdrawal. There is nothing to prevent borrowers from taking higher loans than those being prepaid if the property is sufficiently mortgageable, and by extending the maturity at a lower interest rate, households can conceivably fund their private consumption without needing to increase their short-term repayment burden. However, in many cases a considerable interest rate differential would be required before the saving outweighs the borrowing cost. This innovation seems likely to stimulate even further household debt accumulation. In the long run, lower interest rates can also be expected to trim asset formation of pension funds.

Is heavy household debt a danger sign?

Yet another historical record for household debt warrants a re-examination of the methodologies and data used for household debt and assets in evaluations of the macroeconomic conditions for financial stability. As a rule, analysing the macro-economic conditions for financial stability does not involve forecasting problems or crises in the near future, but rather identifying scenarios which under specific conditions could harm the financial system. One of the main problems with such an analysis is that imbalances can build up over a long period and leave the financial system more exposed, without any serious aftermath emerging until a shock strikes much later. Such a slow buildup can go on for years or even decades, sometimes as part of a global process, before the repercussions are felt in the form of financial stability. The challenge faced by institutions that monitor financial stability is that it is difficult to assess when the exposure of specific sectors, the financial system or the economy as a whole becomes a real problem, not just a conceivable one. If regular warnings are issued for years without anything of note happening, they may lose their credibility. However, this is not to say that they were wrong. They may even play some part in keeping problems at bay. This is worth bearing in mind in discussions of Iceland's growing household debt and evaluations of its conceivable consequences for the longer-term soundness of the financial system.

Chart 5

Households' assets, debt and equity 1990-2003



1. A new classification of lending in 2003 led to a reduction in debt and a 22% increase in the ratio of equity to disposable income. *Source:* Central Bank of Iceland.

Household debt as a percentage of disposable income is used as a measure of the sensitivity of households' finances to shocks, by giving an indication of how large a share of their disposable income at any time needs to be allocated to paying interest and instalments later. The greater the ratio of unavoidable – in the short term – liabilities to income, the greater the probability that households could encounter difficulties in meeting them, e.g. when income contracts. Households' relative repayment burdens are determined not only by the debt stock, but also by interest rates, indexation, lifetime of loans and other commitments that cannot be easily avoided. In Iceland, however, the bulk of households' financial liabilities are in connection with owner-occupied housing. In estimating the long-term repayment burden, the soundness or volatility of household income also needs to be examined. One factor to consider is how easily households can alter the terms of their liabilities at any time, e.g. by extending the repayment period or rolling over short-term debt.

Instead of considering the ratio of debt stock to income, data on the repayment burden can of course

9. Interest rates on certain classes of older housing loans have also been lowered.

be collected directly. However, since such data are only partial, rough estimates will need to be made anyway based on the size and composition of the debt stock. These estimations are discussed in more detail below, after a closer look at debt ratios. It should also be remembered that the distribution of debt is no less important than the total debt burden. The same debt burden amount can thus carry different risks, depending upon how many people need to shoulder it.

Box 1 An international comparison of household debt

Iceland has a high level of household debt, but not the highest internationally

As discussed elsewhere, debt stock is an imperfect measure of the burden that it places, or will conceivably place, on future household income. However, a ratio which is high in a historical or international context could indicate risk. In the following, a quarter of a century of debt accumulation by Icelandic households will not be discussed further. Instead the focus is on their position compared with other countries. Such a comparison is no less problematic. Iceland's position in the community of nations does not ultimately answer the question whether its high household debt poses a risk. Other nations have also been through phases of debt accumulation in recent years. Thus their economies may have also become more exposed than before.

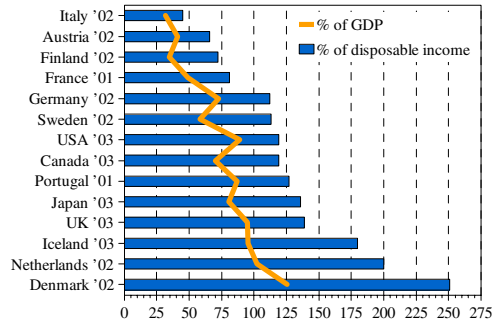
Size of the public sector, housing ownership, pension funds and age of population explain the debt ratio to some extent

By international comparison, Iceland has one of the highest ratios of household debt whether in terms of disposable income or GDP. Chart 1 shows the ratio of household debt in selected countries. Iceland is rated third in this group on both counts, but the lower-ranking countries follow closer behind it in terms of GDP. A number of possible explanations can be given for Iceland's high ratio of household debt to disposable income. In countries with a large public sector, disposable income is lower by the equivalent of its higher direct taxes. It is normal for Iceland to have a higher ratio of household debt to disposable income than, for example, Japan or the US. The ratio of household debt to GDP, on the other hand, is unaffected by the tax level.

Another explanation for Iceland's high household debt is the large proportion of private housing. More

Chart 1

Household debt in selected countries



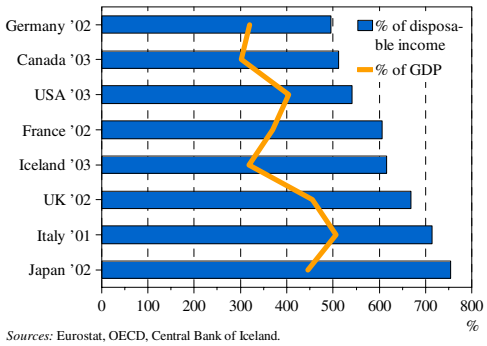
Sources: Eurostat, OECD, Central Bank of Iceland.

than 80% of housing is owner-occupied in Iceland, compared with just under 70% in the UK, 55% in France and a little more than 40% in Germany, which has the lowest level among Western countries. Families in rented accommodation pay rent instead of interest and instalments on mortgages. Their financial obligations are not necessarily less and may not be much easier to divest, e.g. by moving to a smaller property, than those of owner-occupants.

If a high level of owner-occupancy does to some extent explain the high debt ratio, this implies that households probably own considerable assets to offset their debts. If these assets are liquid and have a higher value than their debts, temporary financial distress on the part of borrowers will be less likely to cause setbacks in the financial system. A rough estimate of household equity as a ratio of disposable income and GDP in selected countries is shown in Chart 2, and the asset-debt ratio in Chart 3. By these criteria Iceland ranks lower than various large nations where data are readily available, although not so very far behind some of them.

Chart 2

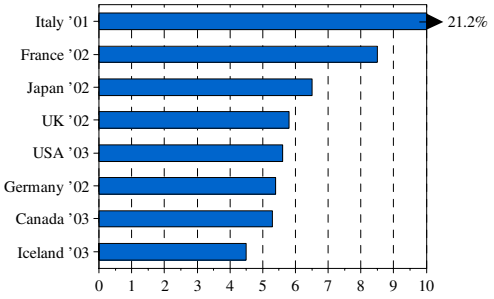
Household equity in selected countries



Sources: Eurostat, OECD, Central Bank of Iceland.

Chart 3

Household debt-to-asset ratio in selected countries



Sources: Eurostat, OECD, Central Bank of Iceland.

Certain items behind the statistics for Iceland's household debt, and in particular for assets, are only rough estimates. Bearing this qualification in mind, the ratio of household equity to GDP is not out of line with that of the G-7 economies. Iceland's pension funds make a substantial difference, since assets held with them and with insurance companies are included with household equity in these statistics. It should be kept in mind that assets held in a pension fund normally cannot be used to pay off household arrears. However, they are a guarantee for future income flow and reduce the need for equity in the form of low-mortgage housing on retirement. Individuals with good pension rights can therefore allow themselves a higher level of indebtedness as they approach retirement age than would otherwise be the case. This may explain why Dutch, Danish and Icelandic households rank with the most heavily indebted – all these countries have strong pension fund systems.

The third explanation for Iceland's household debt figures is its younger average age of population than the other countries in the comparison. This almost certainly brings down the ratio of equity to GDP and raises the debt level.

Finally, under the definition of disposable income used in Iceland in recent years, capital earnings are included, while interest expenses are deducted. Thus higher household debt drives up the ratio with double effect, because the numerator increases at the same time as the denominator decreases.[1]

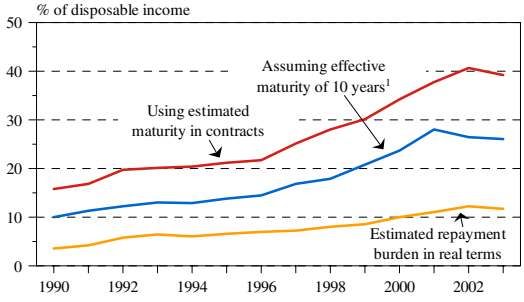
1. It would seem to be more logical to use the income that households have at their disposal for meeting debt service, as the denominator.

Data on the repayment burden are fragmentary, but it appears to be very high

As mentioned above, household debt risk can also be evaluated from directly acquired data on the repayment burden. Such data are sporadic in Iceland and quite difficult to interpret, not least because of uncertainty about real short-term debt service. The clearest example is probably overdrafts, which often do not formally specify a repayment date and under normal conditions offer an extremely flexible rate of repayment, but may be revocable. Although the rate of repayment can be considered from various perspectives, it is obvious that household debt service has grown in pace with increased indebtedness. A

Chart 6

Households' repayment burden 1990-2003



1. Lending by DMBs, insurance companies and leasing companies are calculated at nominal interest rates and a 10-year lifetime. *Source:* Central Bank of Iceland.

lengthening of the formal time to maturity on loans other than housing and pension fund loans, from just over two years in 1990 to almost three years, has offset this to some extent. Based on formal time to maturity, total household debt service has nonetheless grown from 15% of disposable income in 1990 to almost 40% in the past few years.

In general, however, households roll over a considerable amount of their short-term debt each year. To illustrate the sensitivity of the estimated repayment burden to changes in real repayment time, the repayment burden on medium-term debt with an active maturity of 10 years on average over the entire period can be estimated to have increased from 10% of disposable income in 1990 to almost one-quarter.[10] These appear to be more credible figures than the former ones, but are still extremely high considering that, for example, US household debt service was estimated at 13% of disposable income last year. Nonetheless it must be borne in mind that public sector income amounts to 31% of GDP compared with 46½% in Iceland in 2003; that more than 80% of housing is owner-occupied in Iceland as against 70% in the US, and that all kinds of leasing arrangements for cars and boats are more common there. In fact, leasing of this type is so common in the US that the Federal Reserve has extended its concept of debt service and now also collects data on leasing payments for cars, home and household insurance, real estate taxes and many kinds of contractual and fixed household payments, irrespective of whether they are connected with repayments and interest on loans or some kind of leasing payments. Including loan repayments, the total share of these fixed payments amounts to more than 18% for households as a whole and 31% for those living in rented accommodation, but only 15.7% for owner-occupants.

Although the real repayment period is longer than the formal one, and the repayment burden is correspondingly lighter, the formal period may be important in certain circumstances. When household finances come under severe pressure, the formal loan period may suddenly be made binding if credit institutions try to safeguard their interests by refusing to roll over short-term debt, revoking overdraft authorisations, etc. However, the bulk of household debt is long-term and held by patient creditors, who by and large have collateral for their claims.

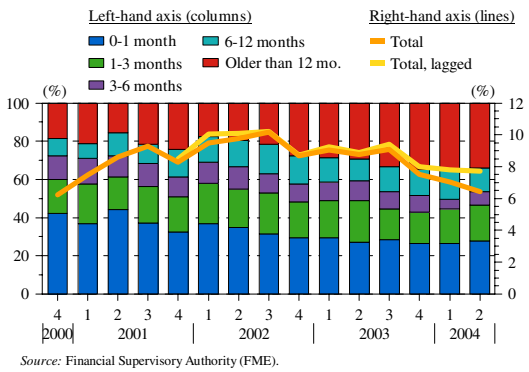
Perhaps the main risk entailed by debt accumulation is not large-scale household arrears which could end up as loan losses in the financial system. Heavy losses are more commonly caused by lending to businesses and commercial premises. A large part of household debt has a very long maturity and is mostly secured with good collateral. However, if the income of a large proportion of households drops, e.g. because of unemployment, or if real disposable income is eroded by inflation, high debt levels can amplify the resulting contraction in demand, with a knock-on effect in other sectors, such as commerce and services, construction or domestic industrial manufacturing. As far as the Icelandic economy is concerned, it is an advantage that a fairly large share of this derivative impact would be felt abroad and cause correspondingly less upheaval in the domestic labour market.

The debt position of households affects the functioning of automatic stabilisers in the economy. Households with ample financial positions are presumably more likely to meet a temporary downturn by borrowing, or saving more slowly, than those which have heavy debts or have otherwise allocated a large proportion of their income towards

Chart 7

Arrears of households 2000-2004

Columns: Arrears as ratio of total arrears in period (left-hand axis).
Lines: Arrears as ratio of total outstanding lending at period-end and lagged for one year (right-hand axis).



Source: Financial Supervisory Authority (FME).

10. The repayment period for HFF loans has also been lengthening in recent years. Since data on repayments of HFF loans are acquired directly from the Fund, this development should be reflected in these figures.

Box 2 Household debt and the planned extension of public housing finance

The Government of Iceland's policy statement from May 2003 contains the following policy point on housing: "...reorganisation of the housing market will continue, in accordance with the objectives for the Housing Financing Fund. The mortgage ceiling for ordinary housing loans will be raised in stages during the Government's term of office to as much as 90% of the value of the property, to a certain limit. The market for rental housing will be strengthened."

Details of extending mortgage entitlements have not been announced, but some developments are likely after the EFTA Surveillance Authority ruled in August that the activities of the Housing Financing Fund (HFF) and ideas for changing them were consistent with European Economic Area rules.

Ideas have been examined for raising the loan-to-value ratio for HFF loans from 65%-70% to 90% and increasing the maximum loan amount by up to half. This would be balanced by shortening the maximum loan term from 40 years to 30 years and tightening requirements for collateral. The loan-to-value ratio has already been raised to 90% in connection with secondary mortgages for lower-income borrowers. In 2003, almost one out of every three borrowers apparently borrowed at least some amount on a second mortgage. The recent reduction in interest rates on second mortgages will spur demand for them.

The effect of these changes will compound the rise in household debt that has already taken place under the existing rules. As a rough estimate, the new financing arrangements will lead to a relatively modest increase in debt, in the range 2%-5%. This will peak after a few years, then the impact will begin to wane as the effect of shorter mortgage maturities gradually filters through. Furthermore, average interest rates on new household borrowing are estimated to drop temporarily by roughly ¼ of a percentage point due to changes in loan composition.

Studies of the relationship of consumption, housing prices and residential housing with income, interest rates and debt suggest that lower interest rates and easier access to borrowed funds increase consumption and housing prices in the short term, while greater indebtedness subdues consumption in general and may have a downward impact on housing prices in the longer run. Higher housing prices encourage construction. The planned changes in housing financing arrangements will probably have an expansionary effect on the economy when they go into effect. Output growth is estimated at ¼ of a percentage point higher during the first year, after which the impact will soon abate. The new arrangements can be expected to give households more scope for mortgage equity withdrawal in order to finance their consumption, as there is some evidence of in Iceland and other countries recently. In the long run, however, private consumption would end up half a percentage point less than if the system had not been changed, due to the impact of higher debt. The inflationary impulse is estimated at ¼ of a percentage point during the first year and will outlast the impact on output growth.

Although they are not expected to mark a turning point, the proposed changes will increase the already high level of household debt. A growing share of this debt is in the form of price-indexed annuity loans, which create a highly back-loaded payment burden. Since housing prices are volatile, a problem could arise if the value of the property drops and thereby brings down the loan-to-value ratio to below the ceiling specified in the loan agreement. Studies suggest that if the initial debt is high, this risk may be significant: namely that the value of the property could drop below the claims secured against it. This probability is very sensitive to changes in loan-to-value ratio when the ratio is high, and increases significantly if the property is purchased while prices are buoyant. Calculations show that if housing is purchased with an annuity loan equivalent to 80% of its value, the probability of its price falling below the value of loans secured against it can increase from virtually nil if it is bought at a price 0-10% below the long-term average, to 20-65% if it is bought at a price 10-20% above the long-term average. Raising the loan-to-value ratio to 90% increases the probability of negative net housing equity to 10-35% for housing purchased at 0-10% below the average price and up to 80-90% for housing purchased at 10-20% above average price. This risk is caused by both the back-loaded nature of annuity loan

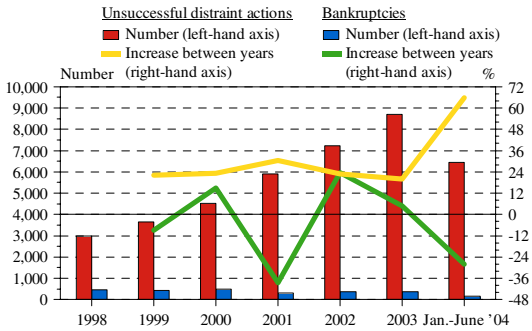
repayments and the inherent volatility of housing prices. There is a strong correlation between changes in real wages and real estate prices. Household real incomes fluctuate by less than real estate prices, however, and homebuyers are in general relatively young and moving up the pay ladder. Households also have considerable scope for cutting back their consumption when squeezed. These three factors mean that the probability of homebuyers not being able to meet their payment obligations is likely to be lower than that of the value of the housing dropping below its mortgageability. The probability of such a squeeze on a collateral, and its sensitivity to the loan-to-value ratio, is nonetheless worth pondering when it is planned to usher in a 90% general loan-to-value ratio at the same time as housing prices in the Greater Reykjavík Area are more than 20% above the 10-year average in real terms.

If the proposed changes to housing financing arrangements are put into practice in part or in full, the main restriction on homebuying will probably be estimates of the borrowers' ability to service their debt. In such circumstances it is crucial for lenders to strengthen substantially their vetting of borrowers' ability to pay because, obviously, more opportunities for borrowing also mean more opportunities for overreaching oneself.

contractual payments. Sound households therefore act like model treasuries, generating a surplus during booms but allowing themselves a deficit during contractions.[11]

Chart 8

Unsuccessful distraint actions and bankruptcies – households 1998-2004



Source: Lánstraust credit rating agency.

Unsuccessful distraint actions still increasing

In recent times the number of unsuccessful distraint actions against households has risen significantly. Totalling 8,688 in 2003, their number had almost tripled over a five-year period. This trend seems by no means over, with 6,441 in the first half of this year.

The number of unsuccessful distraint actions is only one side of the coin. Lack of data about the amounts underlying distraint orders prevents generalisations about the scope of the problem. There has not been a comparable increase in bankruptcy rulings, which numbered 386 in 2003 and 173 in the first six months of this year. This suggests that although unsuccessful distraint actions are on the increase, the amounts involved are too small to make it worthwhile to take the next step against the debtor, namely bankruptcy proceedings, unless it is certain that the claims can be recouped. It should be pointed out that the cost of filing bankruptcy proceedings can amount to almost 300 thousand kr.

Part of the explanation for the surge in unsuccessful distraint actions against households is probably as follows: Handling of these cases is more effective than before. Large, specialised companies now handle collection services for businesses, shortening the process from arrears to distraint action. Businesses are less tolerant of arrears and take action earlier in order to be able to write off lost claims. Legal processing by some district commissioners has also become more efficient.

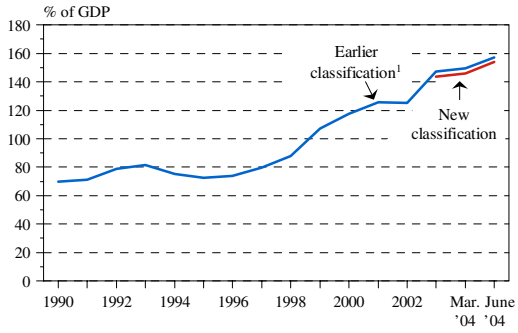
In addition, the age composition of many companies' customer groups has changed. The share of the youngest age group has been steadily increasing. The number of account holders who have little in the way of assets and owe small amounts has increased, which could explain the increase in unsuccessful distraint actions.

Although these explanations indicate less risk to household finances – and thereby to financial

11. It is not uncommon for the public sector to encounter a similar situation to households with large contractual payments, when outlays are mandatory by law or under long-term agreements, e.g. for the health service, national insurance and schooling. However, the public sector has one trump that households do not: the power to levy taxes in the future.

Chart 9

Corporate debt 1990-2004



1. Proportional projection since September 2003. *Source:* Central Bank of Iceland.

stability – than would appear at first sight, the increase in unsuccessful distraint actions is a negative development, especially since it has taken place despite an economic upswing.

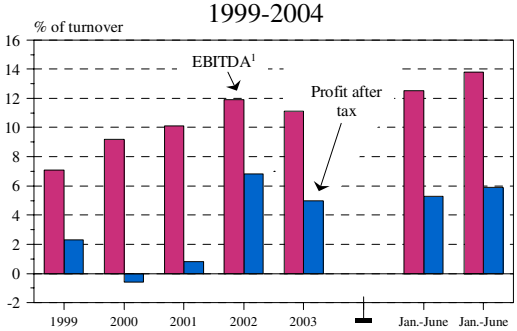
Businesses

Corporate debt continues to increase

Reports on financial stability in recent years have focused just as much on the persistent growth in corporate debt as in household debt. At the end of 2003, debts of businesses were equivalent to 144% of GDP, based on the new loan classification which results in a slightly lower ratio than under the earlier system.[12] Their debt has continued to increase so far this year and a rough estimate in mid-year could be around 154% of GDP for 2004, using GDP figures from the Central Bank's forecast in June. Leveraged buyouts are likely to account for a sizeable part of this increase. However, business investment in 2003 has been revised upwards considerably since the last financial stability report in March, which may explain part of the increase in corporate borrowing. Exchange rate-linked corporate debt has grown particularly rapidly, by roughly one-third in 2003. Since the beginning of this year, exchange rate-linked debt with banks, savings banks and investment credit funds has increased by roughly 15%, i.e. the annual growth rate has been broadly the same as last year.

Chart 10

Businesses' EBITDA and profit after tax 1999-2004



1. Earnings before interest, taxes, depreciation and amortisation.
Source: Central Bank of Iceland.

Businesses have become more exposed to exchange rate and interest rate changes, but strong EBITDA boosts their resilience

For businesses as a whole, their sensitivity to shocks, not least from the exchange rate and interest rates, is clearly increasing. However, judging from available profitability data for this year, most of them have at present considerable scope for servicing these debts. EBITDA of companies listed on ICEX was strong during H1/2004, averaging 14%. In the fisheries sector, which generally records a better performance in the first half, EBITDA was 23%.

Despite their strong profitability, there are two reason for focusing on fisheries companies in particular. First, their profit after tax has dropped considerably, despite higher EBITDA, partly due to their high proportion of euro-denominated debt. Second, it is noteworthy that their debt-to-equity ratio has risen sharply since the end of 2003. Debt was equivalent to twice their equity at end-2003 but two and a half times in the middle of the current year. There are instances of leveraged buyouts under which the sellers are paid for their shares with funds raised by mortgaging the company that is taken over, thereby lowering its equity. Such buyouts, if they are widespread, can heighten the sector's sensitivity to external shocks.

Fisheries companies have in recent months suffered setbacks from rising oil prices, which are not fully reflected in their first-half statements. Fuel is a sizeable component of fisheries costs. If high oil prices are sustained, profitability could take a dive in the second half of this year. Specific segments of

12. The reclassification of loan categories was described in *Monetary Bulletin* 2004/1.

Table 1 Debt ratios of listed companies, by sector[1]

At end of period	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*June 2004*
All sectors	1.9	1.9	2.1	2.3	2.3	1.7	1.8	3.0
Fisheries	1.8	1.8	1.9	2.6	2.6	2.0	2.0	2.5
Manufacturing	1.5	1.7	1.8	1.5	1.4	1.4	1.6	1.8
Oil distribution	1.4	1.2	1.1	1.7	1.7	1.3	.	.
Marine exports	5.0	4.9	4.4	5.3	5.0	5.0	5.7	6.3
Transport	1.9	1.8	1.8	2.3	1.4	1.3	1.7	2.3
IT	2.8	2.9	2.3	1.8	1.4	1.1	1.0	1.0
Miscellaneous	1.6	2.3	2.8	1.9	2.0	1.5	1.4	1.8

1. Total debt as a percentage of equity. *Source:* Central Bank of Iceland.

fisheries are also experiencing considerable difficulties, e.g. shrimping, and the real exchange rate is on the high side.[13]

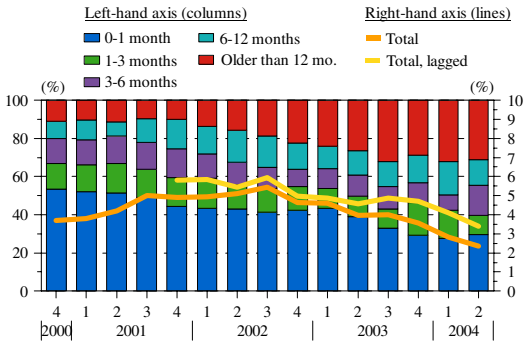
Significant increase in unsuccessful distraint actions against businesses

Unsuccessful distraint actions against businesses increased significantly year-on-year during H1/2004, by 64%. The increase was particularly marked in Q1, but slowed down somewhat in Q2. Part of the increase in unsuccessful distraint actions in the recent term can be attributed to growing numbers of limited liability companies, while the explanation for the increase among households also applies to some extent.

Given the increase in unsuccessful distraint actions in 2003 and preceding years, bankruptcies could have been expected to increase this year. This has not turned out to be the case. Bankruptcies over H1/2004 numbered roughly the same as over the corresponding period in 2003, or just over half of last year's total. There are grounds for keeping a close watch on the trend over the next few months, when it should emerge whether the increase in unsuccessful distraint actions reflects mounting operating difficulties among smaller businesses in general, or rather a change in practices and data collection.

Chart 11

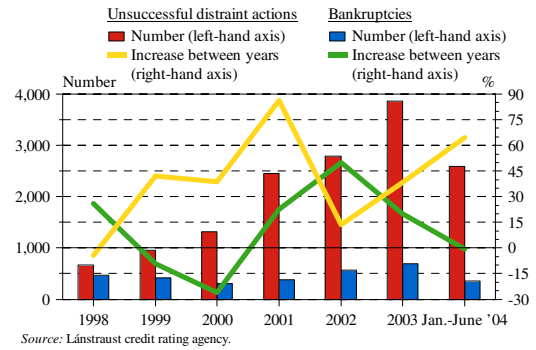
Arrears of businesses 2000-2004



Source: Financial Supervisory Authority (FME).

Chart 12

Unsuccessful distraint actions and bankruptcies – businesses 1998-2004



Source: Lánstraust credit rating agency.

13. Notwithstanding leveraged buyouts, recent fisheries profitability ought to shelter the sector against shocks in the immediate future. However, profitability could easily change if shocks coincide. A 10% drop in product prices would, at a rough estimate, cut EBITDA by 6% of revenues, and if oil prices hit 50 US dollars a barrel and remain there, it would fall by a further 3%.

Financial companies

Profitability of financial companies at its peak?

The profitability[14] of the commercial banks during the first half of this year has seldom if ever been greater. In general, the profitability of the six largest savings banks over the first six months of this year was also very strong. Soaring commercial bank profitability in H1/2004 can be attributed for the most part to trading gains on securities portfolios, especially on equities.[15] The ICEX-15 Index, for example, rose by 40% over the first six months of this year and from end-June to September 10 by just over 19%.

The four commercial banks' annualised pre-tax return on equity in H1/2004 averaged just over 55%. If gains on the banks' trading books are excluded, this figure would have been 26.5%, other things being equal.[16] Taking this one step farther and excluding income from equities and other holdings and sundry income from the banks' profit before tax would leave an average return on equity of just over 11%, other things remaining equal. For the six largest savings banks, profit before tax for the first half was just over 40%, but drops to 3.7% if trading book gains are excluded and other factors unchanged. In view of this, it can be concluded that both commercial banks' and savings banks' profitability would have been considerably lower if securities market developments had not been so favourable.[17] This should be food for thought for the management and shareholders of these companies.

As discussed in the assessment of financial stability in March of this year, a growing portion of the commercial banks' income originates abroad. If recent trends continue, this share can be expected to

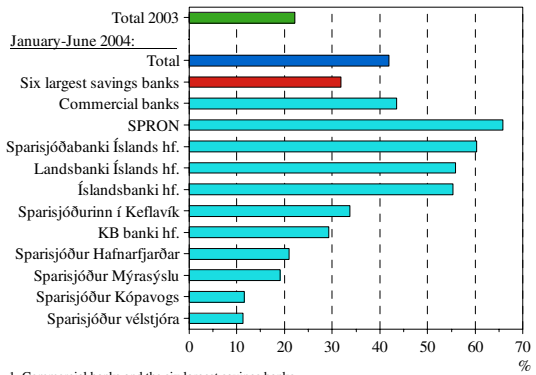
Definitions

Commercial banks:
Íslandsbanki hf., KB banki hf., Landsbanki Íslands hf. and Sparisjóðabanki Íslands hf. (Icebank)

Six largest savings banks:
Sparisjóður Reykjavíkur og nágrennis (SPRON), Sparisjóður Hafnarfjarðar, Sparisjóður vélstjóra, Sparisjóðurinn í Keflavík, Sparisjóður Kópavogs and Sparisjóður Mýrasýslu.

Chart 13

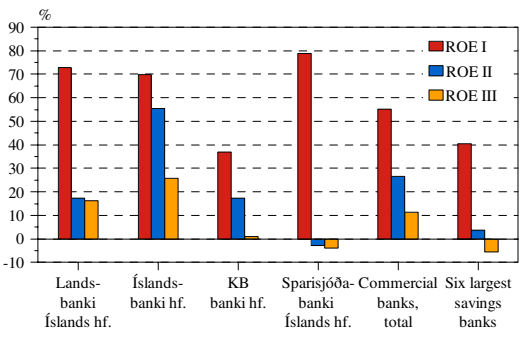
Return on equity (after tax) in the first half of 2004[1]



1. Commercial banks and the six largest savings banks.
Source: Banks' and savings banks' annual/interim reports.

Chart 14

Return on equity (before tax) in the first half of 2004



ROE I: Profit before tax as a ratio of average capital position over the period. Annualised.
ROE II: ROE I less trading book gains.
ROE III: ROE II less income from equities and other holdings and sundry income.
Source: Banks' and savings banks' annual/interim reports.

14. The ratio of net profit to the average between equity at the start and end of the period, less profit for the period (annualised).
15. KB banki's greatest gains came from its bond positions. To a considerable extent, however, these are based on the market value of a convertible bond of Bakkavör Group hf. which currently reflects Bakkavör Group's share price.
16. It should be pointed out that, generally, trading gains are to a considerable extent unrealised.
17. The situation is admittedly not quite so simple, since expenses are to some extent linked to performance, e.g. performance-linked salaries and employee stock options. Securities holdings also incur considerable financing cost.

increase still further.[18] Expansion abroad should broaden the banks' operating bases, facilitate them in providing services to customers who are themselves expanding into foreign markets and increase interest and awareness among foreign investors towards the Icelandic financial market and its products. As has been previously pointed out, however, such investments must be guided by the profit motive and not be expansion abroad merely for its own sake. The Appendix examines some of the implications of the Icelandic banks' expansion abroad for the Central Bank's tasks.

Unless an unexpected downturn occurs on the securities market, it is clear that profits of the commercial banks and six largest savings banks this year will outstrip their 2003 results. Since profitability on such a scale will be difficult to achieve in the coming years, however, it is crucial for them to produce results from their expansion abroad and avoid unexpected setbacks in domestic operations, in order to deliver satisfactory performance in the next few years. It is also worth remembering that the introduction of mortgage loans from commercial banks and savings banks, at similar terms[19] to the HFF, could tighten credit institutions' spreads, by creating opportunities for households to refinance old, less favourably termed bank loans.

Expenses generally have increased ...

All the commercial banks and most of the six largest savings banks reported a lower cost-income ratio, i.e. operating expenses as a proportion of net operating revenue, for the first six months of 2004, despite generally higher expenses year-on-year.[20] Increased expenses can be partly attributed to performance-linked salaries.

... and reviews of loan portfolios are concluding

The commercial banks' specific loan-loss provisions amounted to just over 5 b.kr. during the first six months of this year,[21] as compared to just over 10.1 b.kr. for all of 2003. At Landsbanki and Íslandsbanki, provisions for loan losses as a percentage of total outstanding loans dropped over the first half of this year,[22] comparing the end-June and end-2003 figures. On the other hand, KB banki's provisions rose as a percentage of total loans outstanding at the end of June – one explanation being that KB banki says it is concluding a review of its loan portfolio following last year's merger. This ratio can therefore be expected to shrink somewhat during the second half of the year. Combined specific and general provision accounts for bad loans, as a percentage of total loans outstanding at end-June, decreased for commercial banks after having remained practically unchanged between 2002 and 2003.[23] Recent lending growth is the chief explanation for this lower percentage, since provisions are unlikely to be needed immediately for new loans.[24] The provision account balance for bad loans of the six largest savings banks dropped slightly during H1/2004, i.e. provisions for loan losses were lower than final loan write-offs. This would indicate that the commercial banks and six largest savings banks do not expect further loan losses on the recent scale – but the above qualification concerning new loans should be borne in mind as well.

The commercial banks' final write-offs amounted to 4.5 b.kr. at the end of June, as compared with over 6.5 b.kr. for 2003 as a whole. Since loan-loss provisions by the commercial banks are on the decrease, and their loans in arrears of 30 days or more decreased again in Q2 according to information from the FME, their loan losses can be expected to slow down and, other things being equal, to drop in the coming year. Lending growth last year and so far in 2004 has surged, however, as discussed in subsequent sections. In such a climate there is a risk that some

18. KB banki's acquisition of the Danish bank FIH will more than double its balance sheet, with three-quarters of its income originating abroad. Íslandsbanki has made a takeover bid for the Norwegian bank Kredittbanken, which had assets of over 37 b.kr. at the end of last June. When Landsbanki presented its six-month results in July, its CEO Sigurjón Þ. Árnason stated that it had sufficient financial resources to invest over one billion euros (90 b.kr.), much of which could be expected to be deployed abroad.
19. Subject to certain conditions.
20. The cost-income criterion has its drawbacks, as previous analyses of financial stability have pointed out.
21. Provisions for general loan losses during the same period were 930 m.kr.
22. Annualised.
23. Provisions reached a low of 2.1% in 2000, while at the end of June this year they were 2.2%.
24. Except for general loan-loss provisions.

loans will be made to borrowers who cannot fulfil their obligations, and be lost by the lender.

The ratio of non-performing loans[25] to total outstanding lending by commercial banks decreased still further during the first half of this year to 1.3%, as compared to just over 1.63% at year-end 2003. This would suggest some improvement in the quality of the commercial banks' loan portfolios over this period. While this is certainly a welcome development, it should be borne in mind that sizeable year-on-year lending growth makes it impossible to draw firm conclusions at this stage as to the quality of the new loans. As pointed out in the last analysis of financial stability in March, the loan portfolios of the country's six largest savings banks appear to be of rather poorer quality and, although this situation had improved very slightly at the end of June, their ratio was still much higher than for the commercial banks, at 6.2%.

The banks' balance sheets continued to swell ...

Growth of the commercial banks' balance sheets showed no signs of abating during the first six months of this year, increasing by around 280 b.kr. or 18.8%. Their total balance sheet growth in 2003 was 420 b.kr.[26] At the end of June 2004, the commercial banks' assets totalled almost 1,768 b.kr. This is a vast rate of growth over a short period. By comparison, the total assets of commercial banks in Iceland were just over 222 b.kr. a decade ago. The assets of the six largest savings banks grew by 10.6 b.kr. during the first half of the year, bringing their total assets at the end of the period to just over 157 b.kr., an increase of 7.7%. Savings banks grew by much less than the commercial banks, which is only natural given their more limited opportunities.

... mostly due to lending growth ...

Of the 280 b.kr. increase in the commercial banks' assets in H1/2004, lending growth accounted for just over 195.5 b.kr. Outstanding loans have thus increased by 19.5% since the beginning of this year, which is broadly the same growth rate as in H2/2003. Lending by the six largest savings banks increased by 9.6 b.kr., or just over 9%, since the beginning of this year.

Lending growth of DMBs[27] from the beginning of the year to end of June was 15%, or 139 b.kr., while 12-month growth to the end of June was around 31%. The share of domestic borrowers in total DMB lending was 85%. Lending by DMBs to domestic borrowers increased by just over 11.5% from the beginning of the year to end of June, or by 94 b.kr. Corporate lending[28] grew by over 17% while loans to individuals remained practically unchanged. The increase in lending to foreign borrowers over the same period was 39.6%, or 45 b.kr.

A sectoral breakdown of DMB lending shows that domestic loans to the services sector grew the most over H1/2004, by 46%. The services sector includes domestic holding companies for investment purposes. Substantial changes have taken place in the Icelandic financial market in recent months, with major reshuffling of company ownership, more often than not involving holding companies. It is thus not unlikely that much of this 88.2 b.kr. first-half increase in lending to the services sector has been used to finance these transactions. A good portion of the loans used for leveraged buyouts or takeovers is probably secured with pledges in the companies concerned. This makes it important for these companies to return a sufficient profit to service their owners' debt and ensure that the quality of the loan portfolios is maintained.

According to the same classification, the second-largest increase in lending was to foreign borrowers. As pointed out in earlier analyses, transactions by Icelandic nationals who own holding companies registered abroad are classified under "foreign". Loans that are classified as made to foreign entities could thus easily find their way back to the domestic financial market. While the extent of such transactions is difficult to gauge, it can be assumed that a considerable share of DMB lending to foreign borrowers will be used to finance business activities abroad. As the banks go on expanding abroad, their lending to foreign borrowers may even be expected to gain momentum in the coming months. Some 31%

25. Loans for which special provisions have been made, less specific loan-loss provisions, plus additional interest-frozen loans.

26. The three large commercial banks account for practically all of this increase, or 279 b.kr.

27. Primarily commercial banks and savings banks. These figures are for loans by the parent company and not the group.

28. Other than to financial companies.

of loans made by commercial banks by the end of June were to borrowers outside Iceland; KB banki's share was the largest, at just over 46%. Its acquisition of FIH A/S has probably brought this share close to 80%.[29]

In all likelihood, the new housing mortgages announced by the commercial banks and savings banks will boost their lending to households, replacing loans by the HFF and pension funds. The loans need not be used for purchase of real estate but must be secured by a first priority pledge. This move puts the commercial banks and savings banks in more direct competition with HFF than before. Loans secured against residential real estate are among the lowest-risk forms of lending and it has been pointed out, for instance by the IMF, that such products have largely been absent from the Icelandic banks' portfolios. Such loans should in general contribute to bank stability. Nonetheless, a cautious approach is called for, paying careful attention to financing and credit control. The HFF's position and pension fund profitability could also be weakened.

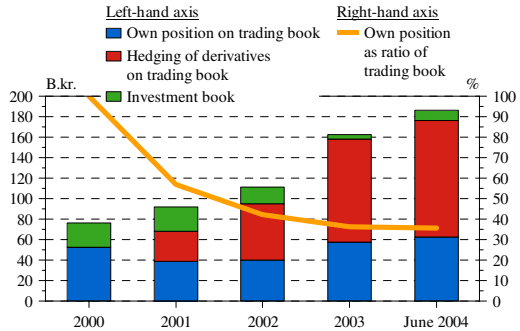
... and increased securities exposures

The commercial banks increased their securities exposures during the first half of the year by 55 b.kr., mainly in equities, where the increase was 36 b.kr. Total securities holdings[30] and holdings in affiliated and related companies on the commercial banks' balance sheets were worth around 320 b.kr. at end-June 2004, or just over 18% of their total assets.

Trading book bond positions increased by 18 b.kr. during the first half of the year, to 176 b.kr. at the end of June, of which around 114 b.kr., or 64%, were positions against customers' derivative contracts. Over the same period the commercial banks added substantially to their trading book positions in equities, which swelled by 40% to just over 125 b.kr., of which some 36 b.kr. were held against customers' derivative contracts. Part of this increase can be explained by rising prices in securities markets – the ICEX-15 index, for example, gained 40% during the period. Positions by banks against customers' derivatives has increased greatly in recent years. Positions against bond derivatives, for instance, have grown almost five-fold since 2000 and against

Chart 15

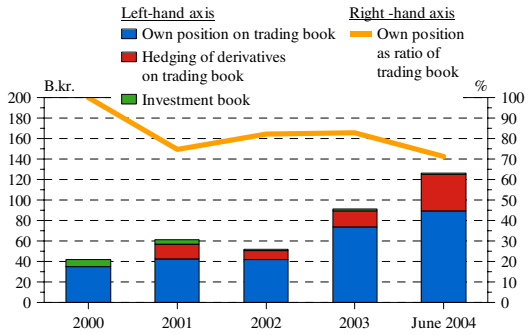
Bond positions of commercial banks 2000-2004[1]



1. Since not all hedging of derivatives was reported for 2000, some customer portfolios are included in the banks' own positions for that year. *Source:* Banks' annual/interim reports.

Chart 16

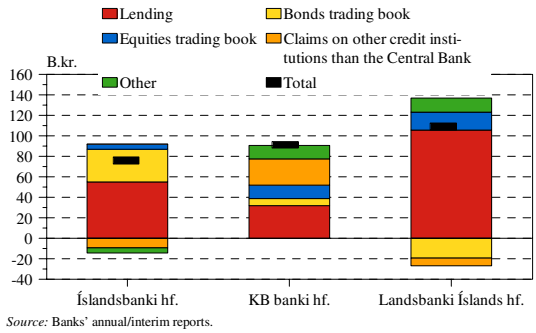
Equities positions of commercial banks 2000-2004[1]



1. Since not all hedging of derivatives was reported for 2000, some customer portfolios are included in the banks' own positions for that year. *Source:* Banks' annual/interim reports.

Chart 17

Asset growth of the three largest commercial banks in H1/2004



Source: Banks' annual/interim reports.

29. Based on the six-month statements of KB banki and FIH A/S.

30. Both trading book and investment book exposures.

underling equities tenfold. As pointed out in earlier analyses, there should be scope for commencing derivatives trading on a regulated market, making it simply a matter of time before domestic financial companies bring this about.

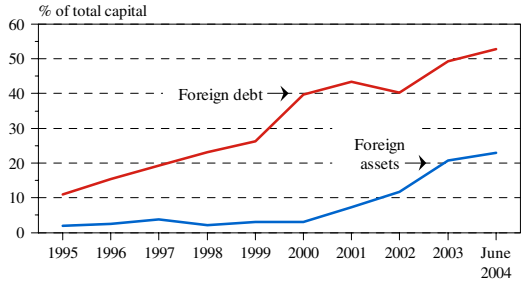
Financing was primarily exchange-rate linked

According to Central Bank statistics, more than three-quarters of the total increase in DMB capital during the first half of this year was financed in foreign currency. Some 60% of the increase was financed with exchange rate-linked securities issues. As has been discussed in previous analyses of financial stability, foreign credit is of very high importance for DMBs, especially the commercial banks, and to judge by these figures, it is by no means decreasing.

The foreign debt component in total financing of DMBs rose above 50% for the first time at the end of 2003, and has moved still higher during the first half of this year.[31] The share of foreign assets in the banks' total assets has also grown in recent years, and amounted to 23% at the end of June.

Chart 18

DMB foreign assets and debt as a proportion of total capital 1995-2004[1]

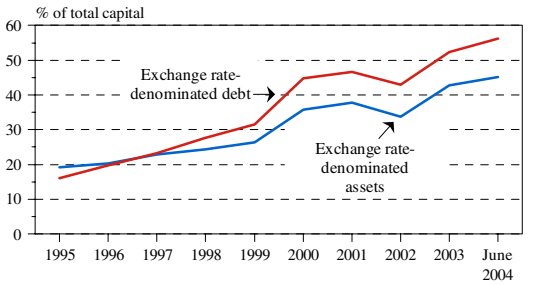


1. Data are not comparable between years. FBA became a DMB in 2000 (on merging with Íslandsbanki) and Kaupþing hf. (now KB banki) in 2000. Collection of data on lending to foreign entities commenced in 2001. *Source:* Central Bank of Iceland.

The difference is naturally less if exchange rate-linked items are included and not solely foreign items. The difference between exchange rate-linked assets and liabilities on balance sheets can largely be attributed to derivative contracts concluded by these banks with their customers. Considerably more customers are taking positions with the Icelandic króna than against it. To hedge these contracts, the institutions have to take on debt in foreign currency, which are included in their balance sheets, while the derivative agreements are off-balance-sheet items. Exchange rate-linked assets of DMBs at the end of June, for example, amounted to around 766 b.kr., while their exchange rate-linked liabilities were 187 b.kr. higher at 953 b.kr. At the same time, the three commercial banks' net foreign currency assets in connection with derivative agreements were 120 b.kr.

Chart 19

DMB exchange rate-denominated assets and debt as a proportion of total capital 1995-2004[1]

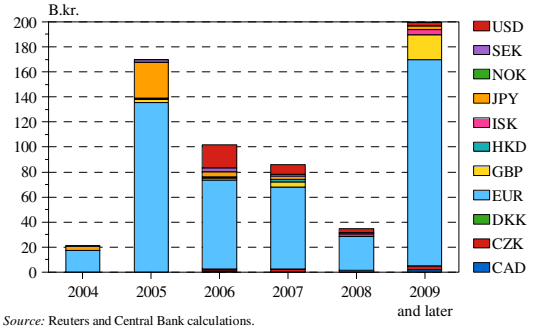


1. Data are not comparable between years. FBA became a DMB in 2000 (on merging with Íslandsbanki) and Kaupþing hf. (now KB banki) in 2000. Collection of data on lending to foreign entities commenced in 2001. *Source:* Central Bank of Iceland.

As discussed above, the commercial banks' total financing increased by around 280 b.kr. during the first half of this year. The increase was financed primarily by foreign securities issuance and borrowing. KB banki hf. floated the largest bond issue ever by an Icelandic bank within the MTN programme last May, for a value of €600 m., in

Chart 20

Maturity profile of commercial banks' MTN programmes (at end of June 2004)



Source: Reuters and Central Bank calculations.

31. According to Central Bank statistics.

Box 3 Sound practices in foreign currency liquidity management

On the initiative of the Central Bank of Iceland and the Financial Supervisory Authority (FME), a discussion team with their representatives and others from the three largest commercial banks was established in mid-2004 to exchange views on foreign currency liquidity management. The group reached conclusions on specific aspects of sound practices in foreign currency liquidity management, which are outlined below. The FME plans to set guidelines based on the group's work and published a draft (discussion paper no. 3/2004) on its website on September 10. Financial companies have a deadline until September 30 to submit their comments on it. It is hoped that the proposals will lead to more transparent foreign currency liquidity management and enhance credibility. Better consistency should be achieved between the banks with respect to factors that need to be taken into consideration and the FME and Central Bank can receive more extensive information, in addition to which the FME should be facilitated in its task of supervising foreign currency liquidity management.

- *Management structure and responsibility.* The banks' organisational charts should clearly present the management structure and responsibility for liquidity management.
- *Strategy.* Senior management need to define a strategy for their liquidity positions and liquidity management. In particular, a strategy shall be defined for managing foreign currency liquidity.[1]
- *Senior management review*. The board, senior management and others involved, such as the Asset/Liability Committee or the like, shall regularly discuss liquidity management.
- *Limits*. Each bank shall, at a minimum, set limits for the ratio of liquid assets denominated in foreign currencies and credit lines (i.e. those available to liquidity management) against the cash flow of foreign currency liabilities at least one month ahead. Limits shall also be set for the net position of exchange rate-linked items for different residual maturities.
- *Day-to-day management*. The foreign liquidity position should be monitored on a daily basis, both within individual currencies and as a whole, and the bank's limits shall be calculated with respect to them.
- *Foreign funding*. Foreign funding requires regular evaluation of access to different sources (notes, commercial paper, loans, interbank deposits, etc.). In this regard, priority should be given to a good credit rating and a diversified investor and investor group base. Maintenance of customer relations should also be addressed.
- *Alternative sources*. Alternative sources of finance need to be addressed, i.e. the types and amounts of alternative sources. Asset liquidity should be considered as an alternative source of finance.
- *Stress testing*. The foreign liquidity position shall be regularly assessed on the basis of different scenarios. Special evaluation shall be made of debt service from borrowers of exchange rate-linked loans who do not have foreign currency revenues.
- *Exchange rate-linked lending*. The scope of exchange rate-linked assets/loans to borrowers who do not have foreign currency revenues shall be specially monitored.
- *Parent and group*. If cash management is centralised, i.e. on a group basis, the above principles, including limits, shall apply to the group and the parent.

1. Exchange rate-linked items are defined in Article 2, paragraph 1 of the Central Bank of Iceland Rules no. 387/2002, on Foreign Exchange Balance.

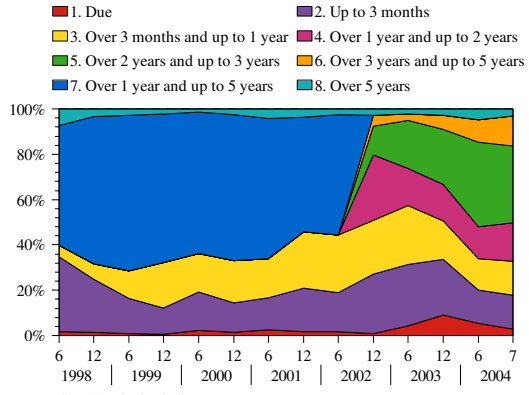
addition to issuing subordinated debt in June amounting to €450 m.[32] Most of the commercial banks' refinancing under the MTN programme for 2004 appears to be completed, but based on the outstanding MTN bond amount at the end of June, some 170 b.kr. (€2 billion) will need to be refinanced next year. During the first six months of this year, the commercial banks issued bonds under their MTN programmes for a total value of 295 b.kr. (€3.5 billion), which appear to have been well received.

Previous analyses have pointed out the large scale of growth in foreign short-term borrowing by commercial banks and savings banks. In this respect, developments in 2004 have been positive, since the proportion of foreign short-term claims to total foreign claims on Icelandic commercial banks and savings banks dropped from 51% at year-end 2003 to 33% at the end of July.[33] The greatest increase in amount has been in debt with a maturity of 2-3 years although maturities of 3-5 years have also increased. It is not sufficient, however, merely to examine foreign borrowing in terms of extended maturity. From the risk perspective it is necessary to match the maturity of financing as closely as possible to the assets being financed, and in fact achieving this balance is even more important. This summer the Central Bank and FME held talks on foreign currency liquidity management with experts from the largest commercial banks. Box 3 presents the results agreed upon by this task force for promoting sound practices in foreign currency liquidity management. On September 10, the FME published on its website discussion paper no. 3/2004 drafting a guideline on this topic.

The financing of all the banks, however, is not based solely on borrowing. Landsbanki's deposits increased considerably, in addition to which the bank issued new capital with a nominal value of 600 million kr. at the end of March. KB banki also issued new share capital in July with a nominal value of over 5.5 b.kr., which will be recorded in Q3.[34]

Chart 21

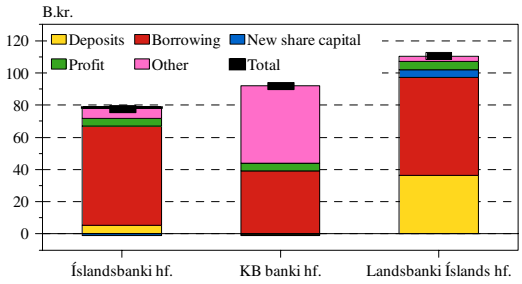
Proportion of claims by foreign entities, by residual maturity 1998-2004



Source: Central Bank of Iceland.

Chart 22

Growth in total capital of three commercial banks in H1/2004[1]



Borrowing consists of both direct borrowing and securities issuance. A subordinated debt issue of 40 b.kr. accounts for the bulk of KB banki's category "Other".
Source: Banks' annual/interim reports.

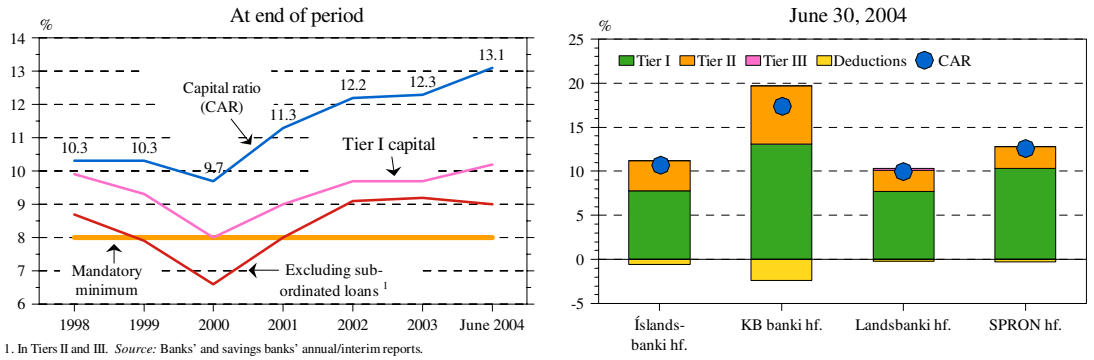
Capital ratio rose

The CAD ratios of the commercial banks and the six largest savings banks rose during the first half of this year. The increase to a large extent reflects the strong equity position of KB banki following its issuance of subordinated debt for a value of 40 b.kr., as previously mentioned. All in all, the capital position of the commercial banks and six largest savings banks is relatively strong at the moment, as all of them have a CAD ratio of 10% or more. They thus still have considerable scope for expansion.

32. In part to finance its acquisition of the Danish bank FIH.
33. This is based on residual maturity rather than original maturity, where the development is even more favourable.
34. In part to finance its acquisition of the Danish bank FIH, the market price of which was around 40 b.kr.

Chart 23

Capital ratio of the commercial banks and six largest savings banks 1998-2004



1. In Tiers II and III. *Source:* Banks' and savings banks' annual/interim reports.

Domestic markets

Housing Financing Fund bonds registered with Euroclear

Iceland's securities market is small and although the establishment of the Iceland Securities Depository (ISD) has been a successful move, it has a low profile among foreign investors. Agreements with Clearstream in the spring were one step towards raising that profile. The HFF's decision to have its new HFF bonds registered with Euroclear was unquestionably positive for the domestic securities market's international links. However, details and information about the arrangement were on the short side to begin with. In connection with the listing of HFF bonds on ICEX, Deutsche Bank AG London became a member of the exchange. Although it is too early to judge, the new member is likely to strengthen and diversify ICEX.

Norex expands

Nordic stock exchanges have been cooperating for many years on various aspects of exchange operations, sharing their experience and addressing a variety of common interests together. This cooperation evolved into Norex, which adopted a single trading system and a harmonised regulatory framework under what is probably a unique arrangement by international standards. Helsinki Stock Exchange and the Baltic exchanges joined Norex during the year. A common market has thus been established incorporating several countries, which strengthens the infrastructure of each member and greatly enhances the efficiency of exchange operations. Trading systems are expensive, and their maintenance and development is virtually beyond the means of smaller exchanges. The Norex alliance gives Nordic stock exchanges access to an advanced trading system. New membership expands the operating base and brings in system knowhow, and the operation of a shared system in so many countries gives the partnership a higher profile at international level.

KB banki's equity offering

KB banki decided to procure the finance for its acquisition of the Danish bank FIH with an equity offering. This pre-emptive rights issue was very large by Icelandic standards, amounting to almost 40 b.kr., the equivalent of 4% of GDP. The offering went flawlessly, reinforcing the view that the Icelandic market is maturing and is now capable of handling projects on such a scale. Transactions of this magnitude pose a challenge for payment system resources and intermediation. Settlements were made without any hitches and parties to them seemed well aware of the impact this would have on their own cash flows, which was reflected in their repo transactions with the Central Bank.

Changes to HFF bond issues

A major reform of HFF bond issues was made at the beginning of July when a new class – HFF bonds – was issued and swaps of several older classes of housing bonds and housing authority bonds were offered at the same time. Since HFF issues have formed the backbone of the domestic bond market in

recent years, it was important for the switchover to go smoothly. At the end of last year a report was published on HFF financing arrangements, compiled by a committee appointed by the Minister of Finance, with the agreement of the Minister of Social Affairs, in 2002. A bill amending legislation on the HFF was subsequently presented to parliament in February and passed in May. A rather tight schedule was drawn up for the switchover, but on the whole it went fairly smoothly. The short deadline for swaps, limited information about the issue and the lengthy registration process for the bonds were the main shortcomings that emerged. For example, the Central Bank had to take special action regarding collateral for credit institutions' transactions with it, because HFF bonds could not be put up as collateral for more than a week after being registered. It does not seem necessary to have allowed such a short time for the changeover.

Foreign markets

The global financial system has strengthened, but uncertainty lies ahead

The global financial system has strengthened recently in line with the improved outlook and general global economic recovery. The financial system appears to have recuperated from the economic contraction that began around the time that the equity bubble burst. Markets seem better equipped than often before to accommodate the upward trend in US interest rates. Furthermore, the position of financial companies is currently strong. Uncertainties remain, however, in connection with changes in monetary and fiscal policies, as well as economic developments and the global security situation.

The widespread economic recovery, expansionary monetary and fiscal policies and improved position of businesses have sustained equity prices and driven spreads down in the recent past, both in developed and emerging market countries.

Over the past few months uncertainties have arisen in the climate of rising interest rates created by tighter monetary policy and a rise in bond yields in Q1, although they have since dropped again. After many years of favourable conditions, bond markets have tightened as uncertainties mount. Yet despite the downturn in conditions, major markets have been lively. In particular, the economic climate, more focused risk management by many credit institutions and foreseeable rises in the Federal Reserve's funds rate have helped this adjustment.

Monetary and fiscal policies are likely to be the main factor influencing financial markets in the next few months when the economic stimulus dies down. Market participants are now focusing on how the economic recovery is unfolding and the impact this has on interest rate levels and asset values, since authorities have underlined that they will take immediate action if stability comes under threat. Expectations could therefore change rapidly.

So far, low inflationary pressures have dampened expectations of a sharp interest rate spiral in the US and Europe. Despite low rates of core inflation, prices of oil and other commodities have soared. Market participants foresee low long-term inflation, but this cannot be taken for granted, especially if the negative output gap in the main industrial countries continues to close. In some cases authorities are also concerned about sector-specific inflation, especially in the real estate market. At the same time, the low interest rate climate in the recent period has increased the risk appetite of investors. This has spawned a rise in debt and substantial growth in the number of hedge funds.

Other risk factors that could affect financial markets include the continued large external imbalances of many countries, e.g. between the US and various Asian states. Persistent imbalances may destabilise forex markets and put downward pressure on asset prices. Such a risk could be at hand if, for example, growth in China slows down sharply.

Also at work are the volatile political situation in the Middle East and the ongoing terrorist threat. In recent months this uncertainty has contributed to higher oil prices. The risk is that further oil price hikes will dampen economic activity and put pressure on the balance of payments of countries that are heavily dependent on oil imports. Subdued risk appetite among investors, higher interest rate premium and lower asset prices are also likely.

Finally, rising interest rates have struck a blow at some emerging market countries' financing conditions, with accompanying jolts to the financial markets. In the opposite direction, emerging market economies have witnessed robust growth in recent years and some have refinanced prudentially, redu-

Table 2 Credit ratings of Icelandic commercial banks

	Original	*Date*	*Current*	*Date*[1]	*Outlook*
Íslandsbanki hf.					
Moody's[2]	A3/P-2/D+	December 1997	A1/P-1/B-	April 2003	Stable
Fitch[3]	A/F1/C/2	February 2001	A/F1/C/2	February 2001	Stable
KB banki hf.					
Moody's[2]	A3/P-2/D	June 1999	A2/P-1/C+	December 2003	Under review
Landsbanki Íslands hf.					
Moody's[2]	A3/P-2/D	February 1998	A3/P-1/C	February 1998	Positive
Fitch[3]	A/F1/C/2	May 2001	A/F1/C/2	May 2001	Stable

1. Date on which the respective bank was awarded the long-term rating in effect in August 2004.
2. Moody's: Long-term/short-term/financial strength.
3. Fitch: Long-term/short-term/individual/support.

cing the risk of complications. However, some emerging market countries are still highly in debt.

Icelandic bank issues in international markets have gone smoothly

Market issuance by Icelandic banks has gone very smoothly this year. Icelandic banks have been establishing themselves in the market in recent times and have built a diversified investor base. The bulk of Icelandic bank issuance in 2004 has been denominated in euros in the FRN market, which has been lively so far this year. Issuance has been under the banks' EMTN programmes. The main trends in this market have been that Icelandic banks have been issuing at longer maturities than before, with larger issue sizes and at more attractive terms. Banks have also used the EMTN programmes for smaller issues, for example linked to derivatives

Icelandic banks have also tapped the syndicated loan market in 2004. Conditions have been very favourable in this market recently, partly because of excess liquidity among international banks. The same trend seems to have characterised Icelandic banks' borrowing in this market, i.e. longer maturities, larger amounts and improved terms. To some extent, Icelandic banks now use syndicated loans as undrawn facilities or guarantees for their ECP note programmes. Overall, the Icelandic banks' ECP outstandings have been fairly steady so far this year.

One precondition for the Icelandic banks' improved performance in the markets has been their credit ratings. Íslandsbanki hf., KB banki hf. and Landsbanki Ísland hf. are rated by Moody's Investors Service, and Fitch Ratings also awards ratings to Íslandsbanki and Landsbanki Íslands. The first Icelandic commercial bank to be awarded a rating was Íslandsbanki hf., followed by FBA (which merged with it in 2000). Afterwards came Landsbanki Íslands hf. in February 1998, then in June 1999 Búnaðarbanki Íslands hf., which subsequently merged with Kaupþing banki hf. in 2003. Moody's long-term ratings for foreign obligations of the Icelandic banks are in the range A1-A3, and all are rated P-1 for short-term obligations. Fitch has awarded Íslandsbanki hf. and Landsbanki Íslands hf. the same ratings: A for foreign long-term obligations and F1 for short-term obligations.

During the period when Icelandic banks have been rated, they have undergone privatisation, mergers and takeovers, both in Iceland and abroad. At the moment, KB banki's rating is under review for a possible upgrading. FIH of Denmark, which KB banki is in the process of acquiring, had a rating of A1/P-1 from Moody's.

Thus the Icelandic banks' foreign funding has gone smoothly so far this year. Maturities have lengthened and terms have improved. Foreign credit markets – especially bond markets – have become crucial for the banks, so that a setback in refinancing, e.g. sparked by a downturn in market conditions or change in credit rating, could cause them liquidity problems. However, neither scenario is currently likely as the markets

remain liquid and the banks' credit ratings strong. *Monetary Bulletin* 2004/1 pointed out that while the Central Bank has virtually unlimited scope for providing domestic liquidity facilities to a credit institution with adequate capital, this is substantially restricted if the liquidity problem occurs in a foreign currency.

Payment systems

New rules function well

In October 2003 the Central Bank of Iceland adopted new rules on the activities of payment systems, i.e. Rules No. 788/2003 on the Central Bank of Iceland Real-Time Gross Settlement System, and Rules No. 789/2003 on Activities of Netting Systems. These Rules clarify the role and responsibilities of the Central Bank, credit institutions and other parties involved in payments and settlement. They specify conditions for system participation, the process of payment transfers and settlement, various operational details and risk management. Furthermore, they create a legal basis for agreements between the Central Bank and credit institutions on settlement collateral. In the Central Bank's view, these rules have enhanced legal certainty and transparency in system operations.

Settlement collateral

Since mid-2002, the Central Bank has been cooperating closely with credit institutions to ensure that satisfactory collateral is always at hand for their payment system exposures. Secure collateral needs to be at hand in the event that a credit institution cannot honour its settlement obligations at the close of the day. Adequate collateral for payment system settlement is therefore vital for ensuring the sound operation of the financial system.

Collateral pledged by all credit institutions in the RTGS system totalled 15.3 b.kr. at the beginning of 2003, and in the netting system operated by Fjölgreiðslumiðlun hf. (FGM) 1.3 b.kr. At the beginning of 2004, collateral totalled 19 b.kr. in the RTGS system and 0.9 b.kr. in the FGM netting system. Collateral amounts were revised in mid-2004 and currently stand at 16.6 b.kr. in the RTGS system and 3.2 b.kr. in the FGM netting system.

The Central Bank reviews collateral amounts on the basis of the highest daily settlement exposure that it has recorded for each credit institution. Credit institutions may not exceed the authorised exposure limit that their collateral covers. They aim to arrange their cash management in such a way as to reduce the amount of funds tied up as collateral. The Central Bank has also contributed to reducing the need for collateral by lowering the minimum payment amount that qualifies for the RTGS system, combining reserve accounts and RTGS settlement accounts, and by encouraging credit institutions to send payment orders only by electronic means to the RTGS system. As a result of close cooperation with credit institutions, they exceed their RTGS authorisations only under absolutely exceptional circumstances.

Hopefully this will enable the RTGS system to be changed so that payments which would lead a credit institution to exceed its authorised exposure limit are automatically rejected. Such a change could even be implemented next year.

Operational risk in payment systems

In recent years the Central Bank has focused in particular on limiting legal, credit, liquidity and settlement risks in the payment systems. Through the changes that have been made to Icelandic payment systems, the Central Bank considers that significant progress has been achieved in limiting these risks. The Central Bank considers that there is now both the opportunity and the need for careful evaluation of operational risk in Icelandic payment systems. Clearly it will need to cooperate closely on this task with the Icelandic Banks' Data Centre, which is largely responsible for system facility operations, and the FGM. The Central Bank could adopt official rules stating formal requirements for management of operational risk, e.g. with respect to risk measurements, testing and presentation of information. However, the Bank feels that a more fruitful course would be to reach agreement on common goals and cooperation on this task. One possibility might be an agreement emphasising that the system operator should be aware of and have knowledge of operational risk, transparency in the functioning and activities of systems, risk measurements and testing, exchange of information and contingencies. Such an agreement could provide a basis for extending these principles to take account of evolving circumstances.

Appendix Internationalisation of the financial system requires ongoing adaptation of the Central Bank's tasks

Internationalisation of the Icelandic banks has led to some changes in the Central Bank of Iceland's working methods, and closer cooperation both in Iceland and abroad. More changes are required, however. The following are some of the tasks currently facing the Central Bank:

- A possible re-evaluation of prudential rules set by the Central Bank of Iceland. By law the Bank sets rules for the liquidity ratio of credit institutions and for their foreign balance, as described on p. 85. These prudential rules apply only to domestic credit institutions, i.e. the parents and not on a consolidated basis. No special limitations on inter-group trading are in effect which might affect the honouring of these prudential principles.
- A wider scope of financial stability analysis. Shocks to the financial system can now more easily originate from markets in other countries. Analysis of related risk factors needs to be stepped up. One example of an adaptation to this development is that the financial stability departments of the Nordic central banks regularly exchange information on their assessments for their home countries, because individual banks now operate in more than one Nordic country. These information exchanges are now becoming more important for the Icelandic analysis.
- Adaptation of statistics collected. As business becomes more international in character, it is increasingly more difficult to gauge statistics provided by the banks. For example, credit to foreign borrowers is not sufficiently broken down by country, sector or other classifications applying to domestic borrowers. Likewise, it is not always certain whether a transaction should be regarded as domestic or international. It has become harder to determine how much of the banks' credit expansion will impact the domestic economy.
- Greater need for soft information and contacts with counterparties. The pace of events has sped up and the necessary feel for where institutions and markets are heading is harder to come by. Ongoing dialogue with key people is a seldom-mentioned part of the functioning and preparedness of a central bank. The Central Bank also needs to strengthen its contacts with other central banks. Higher levels of foreign debt and assets associated with expansion abroad are sure to lead to more discussions with rating agencies, the IMF, the OECD, etc.
- The appropriate level of foreign exchange reserves. The Central Bank should at all times have an appropriate level of foreign reserves and thereby promote sound external liquidity of the economy. Credibility and ready access to capital markets are important factors in this respect.
- Emergency lending assistance and crisis management will become more difficult should such circumstances arise. The size and complexity of situations that might arise have grown. So has the number of parties that might have to be involved, domestically and abroad. If a bank in need of ELA is domiciled in a Nordic country and has at least one cross-border establishment in the area, the provisions of the Nordic central banks' MoU may apply.[1]
- More need for expert staff in the Central Bank. It must have access to specialists who have detailed knowledge of the type of business that international investment banks are involved with and legal complexities that can arise.

Analysis and risk measurement are important tools in efforts to maintain financial stability. What makes risk measurement difficult is how to relate the low probability of events to the magnitude of their effects on the economy, and as a bank expands in other jurisdictions, these effects become more uncertain. The important point here is how to cope

1. http://www.sedlabanki.is/uploads/files/NordiskMoUGenerellslutligENG.pdf

with the main risk factors that the bank is exposed to. Credit risk, market risk and operational risk will be well covered by the implementation of the Basel 2 capital adequacy standards, but what seems more uncertain is how to cope with the liquidity risk. Moreover, some analysts argue that it is liquidity that protects banks and financial stability from uncertain events, not capital itself.[2] The Central Bank and the Financial Supervisory Authority (FME) monitor liquidity requirements for Icelandic banks. As a bank expands rapidly abroad the Central Bank and the FME might experience difficulties in foreseeing the probability of a liquidity drain within domestic borders, caused by a foreign subsidiary bank. In this respect, these institutions might be confronted with difficulties in preventing turbulence within the domestic economy.

According to Article 104 of the Icelandic Act on Financial Undertakings, many of its prudential provisions apply for both the individual bank and the consolidated group, including the provisions of Article 83 regarding liquidity. The rules on large exposures which are based on Directive 2000/12/EC do not envisage a ceiling on exposures between parent and subsidiary as they are consolidated as a group. It is interesting to note that in Denmark there is no such exposure ceiling within a group but the subsidiary is not allowed to provide the parent with credit without the permission of the Danish FSA. In Iceland the implementation of Directive 2002/87/EC concerning supplementary supervision of financial conglomerates is being prepared, to take effect no later than the beginning of 2005. In that implementation an amendment to the Act on Financial Undertakings will be proposed which calls for further supervision of transactions between members of a group. The implementation of the Directive and accompanying regulation is expected to strengthen supervision of cross-border activities.

The interplay between the Central Bank and the FME needs to be effective and in line with the cross-border expansion of the banks. Fundamentally, this interplay is determined by the Cooperation Agreement (MoU) signed by these institutions.[3] The cross-border expansion of the Icelandic banks does not in itself call for a change in the cooperation between the Central Bank and the FME. The channels and information exchange are in place, but increased contact may be expected along with efforts to formalise cooperation with other central banks and supervisors in countries where subsidiaries and branches of Icelandic banks are domiciled.

These issues are important for the effectiveness and safety of the financial system. The Icelandic financial system has expanded its horizons and is becoming increasingly international in character, and former state banks have now been fully privatised. Households and businesses now have a more dynamic financial system than before. The Central Bank adapts its activities to these circumstances on the basis of the legislation governing it.

2. C.A.E. Goodhard (2004), "Some New Directions for Financial Stability?", *Per Jacobsson Lecture*, pp. 10-11.

3. http://www.sedlabanki.is/uploads/files/Agreements1.pdf

Birgir Ísleifur Gunnarsson, Chairman of the Board of Governors, Central Bank of Iceland

Monetary and financial stability in Iceland

Welcoming address at a SUERF and Central Bank of Iceland Seminar in Reykjavík, June 3, 2004[1]

On behalf of the Central Bank of Iceland, I warmly welcome you to this seminar on the *Interaction of Monetary and Financial Stability in Small Open Economies*. It is an honour for us to co-sponsor the seminar with SUERF. We are grateful to David Llewellyn, Eduard Hochreiter, Beatrix Krones and Michael Bailey at SUERF for the excellent cooperation which we have enjoyed with them in its preparation. I welcome in particular our keynote speaker, Sir Andrew Crockett.

The topic of the seminar is an appropriate one which is attracting increasing attention, both within and outside central banks. I trust that the presentations and discussions over the next two days will leave us with a better understanding of this interaction and of the issues on which we wish to focus our attention in the period ahead.

We will be assisted by very impressive speakers and participants. I wish to extend my gratitude to those who have agreed to give lectures and present papers and I look forward to inspiring and stimulating contributions by them.

In this address, I will briefly describe our own recent experience in the areas of monetary and financial stability.

The current Act on the Central Bank of Iceland was adopted in 2001[2]. It assigned to the Central Bank the main objective of pursuing price stability. The Bank was granted instrument independence to pursue that main objective, its financial independence was enhanced and the Act included clear provisions on transparency and accountability. The Act also stated that the Bank should promote an efficient and safe financial system, including payments systems domestically and with foreign countries. In addition to price stability, the Bank was, in other words, given a clear mandate to concern itself with financial stability.

An inflation targeting framework was adopted at practically the same time with a joint declaration of the Government and the Central Bank which set a target for inflation of a 2½% twelve-month rise in the CPI. The framework imposes strong demands on the professional capacity of the Central Bank. The Bank regularly publishes a macroeconomic forecast and inflation forecast, with an associated inflation report. The inflation forecast provides the foundation for the inflation targeting policy. In its quarterly *Monetary Bulletin*, the Bank publishes a detailed analysis of current economic and monetary developments and prospects. It also presents the rationale behind the decisions by the Board of Governors to change or not to change interest rates, as well as signalling the monetary policy intentions for the period ahead. In these endeavours, the Bank seeks to be as transparent as possible.

1. Welcoming address at a SUERF (The European Money and Finance Forum) and Central Bank of Iceland Seminar in Reykjavík, Iceland, on June 3, 2004.
2. See *inter alia* Central Bank of Iceland *Monetary Bulletin* 2001/3, pp. 31-46.

When the inflation target was adopted, the economy was quite unbalanced. It had boomed during the second half of the 1990s. The upturn was originally well balanced, being led by foreign direct investment and exports. But eventually it turned into overheating and a surge in private consumption, which was fuelled, among other things, by rapid credit expansion in an increasingly liberalised financial environment.

In due course, the imbalances began to have a negative effect on expectations, partly because of a sharply deteriorating current account. The currency began to slide and fell by a third in trade-weighted terms over a period of a year and a half until late 2001. This development affected inflation as rising import prices fed into domestic prices. When the inflation-targeting framework was adopted, the most recent measure of the twelve-month rise of the CPI was about 4%. The króna continued to depreciate for some time after the adoption of the target and inflation rose significantly above the upper tolerance limit of the inflation target. The Central Bank pursued a restrictive monetary policy, repeatedly raising its policy interest rate which reached a historically high level. This ultimately led to a rapid fall in inflation after January 2002 and by late that year it had fallen under the inflation target, where it has remained more or less since until the most recent measure.

We have now pursued an inflation-targeting policy for more than three years. Our view is that it has been successful. Inflation was brought under control relatively quickly after the adoption of the inflation target in very unbalanced economic circumstances. There is also firm evidence that the inflation-targeting regime has earned credibility in the markets and the community. The monetary regime will be further tested in the period ahead, which will among other things be characterised by an exceptional level of foreign direct investment in the aluminium industry and associated publicly owned and debt-financed power plants.

Our experience is a strong indication that inflation targeting is a policy which can be pursued in a very small and open economy as well as in a large economy with very deep financial markets. This policy is resource-demanding and imposes by necessity a very strong discipline on the respective central bank.

In our view the increased focus on financial stability in the Central Bank Act of 2001 was natural and well within the accepted framework of central bank activities. The Bank was responsible for banking supervision until the end of 1998 when that function was merged with the Insurance Supervisory Authority in a new and unified Financial Supervisory Authority, with which the Central Bank cooperates quite closely on financial stability issues. While the Central Bank had responsibility for banking supervision, its attention was necessarily focused on individual institutions and overseeing that their operations complied with existing laws and regulations. Before banking supervision was transferred elsewhere, the Central Bank had also begun to focus its attention on broader financial stability issues along the lines that many other central banks were doing at that time. A logical part of that process was that in 2000 the Bank began to publish semi-annual financial stability analyses in its quarterly *Monetary Bulletin*.

One reason for the increasing focus of the Bank on systemic financial stability issues in the late 1990s was the growing perception in a liberalised financial market that a weak financial system could undermine economic and monetary stability just as much as economic imbalances and weak policies could undermine an otherwise sound financial system. A sound financial system, including safe and secure payment and settlements systems, is also an important precondition for the effective implementation of monetary policy. Capital movements were fully liberalised in the 1990s, as was the domestic financial market which also underwent significant structural change, including the withdrawal of the government from direct ownership in banking institutions. These developments stiffened competition at home and linked the domestic financial system much more closely to international markets. Consequently, in its analyses, the Central Bank consistently draws attention to the potential vulnerability of the domestic financial system to changes in the external environment, including the ready availability of foreign credit for refinancing purposes, and its vulnerability to sudden changes in the exchange rate.

The developments in the Icelandic economy towards the end of last decade and into this one resembled in many ways those experienced in some of the other Nordic countries a decade earlier.

Needless to say, and in view of the experience of other Nordic countries, these developments caused considerable concern about the underlying stability of the financial system. The Central Bank candidly expressed these concerns in its financial stability reports, most notably in the spring of 2001. At that time the IMF also issued its Financial Stability Assessment which questioned the strength of the financial system in Iceland in view of the tremendous imbalances in the economy and what was perceived to be an underlying weakness in the banking institutions. The IMF identified a potential risk of a rapid depreciation of the currency, which it felt could further weaken the banks and pose a threat to them.

Early on in the upswing, amidst a rapid expansion of lending and external indebtedness of the banks, particularly their short-term foreign debt, the Central Bank imposed a liquidity requirement on the commercial banks. Its purpose was to stem the growth of foreign borrowing and to shift the weight of foreign indebtedness from the very short end of the maturity spectrum. Another prudential rule set by the Central Bank concerns the foreign exchange exposure of commercial banks. This sharply limits their scope for taking direct foreign exchange risk. Beyond these prudential regulations, the means which the Central Bank has to affect the practices of the banks are through public pressure, for example in its semi-annual financial stability reports or in other public or private statements. The Bank has used all these methods with varying degrees of success. In line with the traditional role of central banks, the Central Bank of Iceland can serve as a lender of last resort if a domestic bank experiences a liquidity shortfall. The Central Bank has also systematically built up its foreign exchange reserves in order to strengthen the external liquidity position of the economy.

As it happened, the Icelandic economy landed remarkably softly after the turbulent period of 1998 to 2001. I mentioned earlier that inflation was brought under the inflation target in late 2002. The external current account was more or less in balance in 2002 only two years after the deficit had measured 10% of GDP, credit growth came to a halt, and in stark contrast to what happened in other Nordic countries a decade earlier, the banks emerged from the period in a satisfactory position and have gained considerable strength since. No doubt there are many reasons for this relatively favourable outcome. One could mention the generally good external conditions during the adjustment period, a relatively sound fiscal policy, and the swift correction of the external imbalance, as well as the rapid turnaround in the exchange rate after it reached its trough and the decline in the rate of inflation to below the inflation target. In a follow-up to its report of 2001, the IMF recognised in mid-2003 the successful adjustment of the Icelandic economy, the significantly increased strength of the financial system and important changes in the regulatory framework.

The principal objective of the monetary policy of the Central Bank of Iceland is price stability, as I mentioned earlier. Its other principal goal is financial stability. The financial stability analyses focus on macroeconomic stability factors and on the strength and soundness of the financial system as a whole. The Bank addresses both these principal areas with a strong professional ambition. Its two main fields of analysis reinforce each other and benefit from close cooperation among the staff. Both areas have forced us to put our analyses, projections and policies on a longer-term perspective which provides an opportunity for better overall economic and monetary policy management.

Although much remains to be explained about the nature of the interaction of monetary and financial stability, I mentioned earlier that a sound financial system is a precondition for economic and monetary stability and the implementation of an effective monetary policy, and that economic imbalances and weak policies could undermine an otherwise sound financial system. In this respect, these areas support each other. Since financial liberalisation was introduced, we have not faced circumstances where financial stability concerns have directly affected or conflicted with monetary policy decisions. Our aim is to prevent such a situation from arising. The potential risks to financial stability at the end of the last upswing were defused by the swift achievement of monetary stability and the restoration of internal and external balance.

In conclusion, I would like to repeat my warm welcome to all the participants in the seminar. I trust that both the seminar and your stay in Iceland will be interesting and rewarding, professionally and socially.

Sir Andrew Crockett[1]

The interaction of monetary and financial stability

Keynote remarks by Sir Andrew Crockett at a SUERF and Central Bank of Iceland Seminar in Reykjavik, June 3, 2004[2]

1 Introduction

There can be little doubt about the importance of achieving monetary and financial stability. Instability in the financial sphere has exacted a large price over recent decades in developed and emerging economies alike. Inflation was a perennial problem during the 1970s and 1980s, and the price of eventually defeating it was high. More recently, distress at financial institutions, and throughout entire financial systems, has imposed enormous costs on the economies concerned.

Moreover, it is clear that monetary and financial stability can interact. Numerous papers have documented the common roots of currency and banking crises, and how one can exacerbate the other. According to one World Bank study, there have been over 120 financial crises in emerging markets over the past two decades. The typical resolution cost of these crises has averaged 16 percent of GDP, and the aggregate of such costs over all countries exceeds $1 trillion.

If it is accepted that monetary and financial factors can interact, there is still no very clear definition of the specific processes at work. Different observers stress different channels. The dramatic rise (and in some cases, fall) of asset prices has focused concern on the potential destabilising consequences of volatility in these prices. But there is much less agreement on whether this has anything much to do with the achievement of a central bank's inflation objectives.

In this lecture, I will try to explore some of these issues in a little more detail, asking the question of how inflation affects financial system stability and vice versa. For the sake of simplicity, I will mostly consider the channels of causation that run from one to the other, or vice versa, neglecting the obvious point that there is joint determination in a general equilibrium situation. I will try to pick up this latter point towards the end, before addressing remedies for instability. Another question I will address is one of governance structure. If, as I will argue, there are important interactions between monetary and financial stability, how should responsibility for systemic oversight be allocated?

2 Definitions

As in any analytical endeavour, it is well to start with a definition of terms. I will follow the normal practice and define monetary stability to mean stability in the purchasing power of money, or in other words, low and stable inflation. I will also accept the convention that inflation is defined in terms of the change in the price of a basket of goods and services representing current consumption. This, of course, begs the question of whether a change in the price of

1. Sir Andrew Crockett is Managing Director at JP Morgan Chase International and has been General Manager of the Bank for International Settlements.
2. Speech at a SUERF (The European Money and Finance Forum) and Central Bank of Iceland Seminar in Reykjavík, Iceland, on June 3, 2004.

existing assets, whether real or financial, has any relevance as a measure of inflation. I do not have an answer to that, but simply note at this stage that an increasing number of analysts are questioning whether a unidimensional measure of inflation captures adequately the phenomenon we wish to analyse.

I will define financial stability as the ability of the financial system to continuously intermediate savings and investment without provoking wide swings in asset prices. Note what this definition includes and does not include. The focus on the functioning of the system means that distress or failure at individual financial institutions is not a concern unless it impairs the intermediation capacity of the financial system as a whole, i.e. unless there is some mechanism for the contagious transmission of distress. And the proviso that wide swings in asset prices have to be avoided if the system is to be considered stable introduces asset prices into the definition.

This may not be generally accepted so it is useful to be precise on this point. Normal fluctuations in the price of financial and real assets are a natural and necessary part of the efficient working of the financial system. But if these swings become too wide (leaving aside for the moment what constitutes "too" wide) then stability concerns arise. Why?

We care about financial instability because it is wasteful. The asset price misalignments that typically precede and accompany financial instability can profoundly affect consumption and investment decisions, misallocating resources across sectors and over time. Even if this misallocation is not accompanied by the failure of financial institutions, the eventual costs to society can be significant.

3 Historical overview: Changing perceptions of monetary and financial stability

Under the Gold Standard, monetary stability was defined in terms of the maintenance of the gold value of national currencies. Changes in the purchasing power of a gold-backed currency were seen as the result largely of changes in the overall supply of gold and thus outside the control or responsibility of the central bank or the Government. In such a regime, the responsibility of the policy authorities was seen as maintaining the convertibility of fiat money into the reference standard (gold) on demand. In practice, this meant the maintenance of a sufficient gold reserve to meet normal claims for conversion, and a willingness to use interest rate policy to protect the gold reserve when payments pressures caused a drain.

In most countries, institutions emerged that took responsibility for ensuring the health of the rest of the banking systems. Usually, though not always, these were the institutions that subsequently became recognised as central banks. The tasks of central banks were first analysed in Bagehot's classic, "Lombard Street", which remains a *locus classicus* for central banks' financial stability responsibilities to this day. It became widely accepted that the central bank should act as a lender of last resort to the banking system, providing liquidity (at a price) to sound banks at times of financial strain, but declining to lend to insolvent institutions.

The foregoing view of central banks' responsibilities began to change when national monies were detached from gold, and their value became dependent on national policies. This, by the way, is a change that cannot be dated with precision. Most currencies went off gold in 1914, but governments retained for some time the objective of returning to some form of gold standard. It was not until the demise of the Bretton Woods system in the early 1970s that gold ceased to play any role in monetary systems. Well before then, however, public opinion had realised that domestic inflation was a consequence and responsibility of central bank policies.

After the Second World War, the preoccupation of policy authorities with financial stability tended to diminish, for several reasons. One of the legacies of the Great Depression was a network of controls and restrictions over domestic financial systems that had the effect of providing safety nets and limiting competition in the banking sector. Such a shielded environment effectively protected banks from losses and supported franchise values in the face of most shocks affecting bank profitability.

In many countries, monetary policy was also considered somewhat secondary, for two reasons. First, fixed exchange rates reduced the scope for discretionary policy. And second, prevailing academic opinion, as reflected, for example, in the Radcliffe Report (1958) held that inflation was caused mainly by real phenomena, and these were not much affected by monetary conditions.

All this began to change after about the mid-1960s. The combination of the persuasive advocacy of the Monetarist school and the experience of accelerating inflation convinced professional opinion that the central function of central banks should be the achievement of monetary stability, in the sense of controlling inflation. Bringing down inflation took considerable time, and involved considerable cost, but by the 1990s it had been largely achieved. In the course of this effort, much theoretical and empirical work provided a basis for improved understanding of the inflation process. And institutional mechanisms, for example independent central banks and inflation targeting regimes, helped to cement the achievement of price stability.

The successful fight against inflation was accompanied in most countries by liberalisation in financial systems. Administrative controls, such as interest rate ceilings and limitations on business activities, were relaxed or removed. Competitive forces were allowed greater play.

Most observers probably assumed that lower inflation and a liberalised financial environment would have contributed to strengthening systemic stability. After all, the uncertainties associated with high and variable inflation provide fertile soil for the misallocation of resources that often leads to financial distress. And a competitive environment is usually supposed to promote the survival of the strongest firms.

In the event, however, the liberalisation of the financial environment has led to an increase in the number of episodes of financial instability. Combatting this instability has therefore risen up the political agenda, both nationally and internationally. Debate has centred both on the policies needed to prevent and deal with financial distress, and on the allocation of institutional responsibilities for prudential regulation and crisis management.

The point of this somewhat lengthy historical detour is that a simultaneous preoccupation with monetary and financial stability is a relatively new phenomenon. Hitherto, policy authorities have typically been concerned with one or the other, but not both together. And they have not really confronted the question of how one interacts with the other.

4 The impact of monetary stability on financial stability

Let me now turn to the central topic of my remarks today, which is the interaction of monetary and financial stability. Not surprisingly, perhaps, much of what I have to say will be in terms of the transmission of *instability*. For the sake of simplicity of organisation, I will start by assessing the ways in which monetary instability can affect financial instability, then look at the lines of causation running in the other direction. Following that, I will try to assess some of the ways in which interactions can occur jointly.

Monetary instability is usually manifested in a high rate of inflation (though the recent experience of Japan reminds us that deflation can be an equally serious problem with, arguably, fewer reliable policy tools to use in response). High inflation can contribute to instability in the financial system in several ways. First, high inflation is almost invariably associated with unstable inflation. Unstable inflation generates uncertainty in intertemporal contracts that is difficult, if not impossible, to hedge against satisfactorily.

Historically, banks have borrowed short to lend long. When short-term interest rates rise to reflect higher inflation, they can find themselves locked into assets whose yield is fixed while their funding costs rise. The losses can be masked if accounting conventions fail to reflect adequately valuation changes. For example, if loans can be carried on the books at historical cost, a financial institution may appear to be adequately capitalised when in fact its financial condition is severely weakened. Under these circumstances, insiders may use their continued access to funds to make increasingly risky bets to restore their profitability ("gambling for resurrection"). Somewhat simplified, this is the story of the Savings and Loan crisis in the United States, and lies behind some of the difficulties faced in other financial systems.

A second mechanism by which inflation can generate financial distress is through false incentives set up by the interaction of high inflation with a fixed but adjustable exchange rate system. What such a system in effect does is combine a continuous inflation in domestic prices with a periodic step adjustment in foreign exchange prices. Misalignments of relative prices are bound to occur in such circumstances, and

those who make decisions based on the expected continuation of an exchange rate peg will be exposed to potentially severe losses. There have been many occurrences, most notably in the East Asian crisis of 1997-98 and in the Argentine crisis of 2001-02, in which fixed exchange rates allowed the buildup of financial imbalances, then exchange rate depreciation led to or exacerbated domestic financial crisis.

Third, and more generally, inflation generates resource misallocation and makes it harder to judge the underlying profitability of projects. Credit risk becomes harder to appraise, especially when the continued ability of a borrower to service debts is dependent on the continuation of a given relationship between the growth of costs and revenues.

And finally, it should not be overlooked that, when inflationary expectations are deeply embedded, a deceleration in inflation can be as much of a shock as an acceleration. This is the story of the distress in parts of the life insurance industry in recent years.

5 The impact of financial stability on monetary stability

Let me now turn to the question of how financial instability can affect monetary stability. Will a central bank be handicapped in its pursuit of low and stable inflation by instability in asset prices, or by strains in the financial system?

There is a school of thought that believes that developments in financial markets and institutions have little influence on the ability of the central bank to achieve price stability. According to this line of reasoning, the main channel of transmission of monetary policy to the price level runs through the impact of interest rate changes on the level of final demand. There is no reason to suppose that financial market conditions impair the ability of the central bank to control policy interest rates. Similarly, there are not likely to be circumstances in which interest rate changes are ineffective in influencing demand.

But what is true in normal market conditions in mature economies is not necessarily true in disturbed conditions, particularly in emerging economies. In the latter markets, bank failures clearly compounded exchange rate depreciation and made it virtually impossible for the central bank to attain its price stability targets.

In industrial countries, too, however, financial strains can complicate the achievement of keeping inflation at the desired level and achieving a smooth evolution of demand. Japan is perhaps the most prominent example of a country that, following the bursting of an asset price bubble, fell for a protracted period into a deflationary trap, in which conventional monetary policy was of limited effectiveness. But if Japan is the most extreme case, it is certainly not alone. In the United States, for example, the Federal Reserve has on occasion been induced to maintain an unusually accommodative monetary policy to counteract the "headwinds" created by weakened financial balance sheets. And there are other, similar, cases.

Other dilemmas are created when asset prices rise rapidly. There is no disagreement that asset prices are relevant to monetary policy decisions through their impact on private sector wealth, and thereby on the propensity to spend. But should other potential channels be taken into account? Will potentially unsustainable increases in asset prices have other effects on spending, for example when they are unwound? If this unwinding lies at some uncertain time in the future, say beyond the normal two-year horizon of inflation targeting, should it be ignored or factored into decision making? And if it is a matter of concern to policy makers, should they use monetary policy responses or other instruments to offset the buildup of imbalances, or should they await the corrective phase and take action then? These are complex questions, to which there are no easy answers.

6 Policies to achieve monetary and financial stability

The next question I want to address is whether policies to achieve monetary and financial stability, respectively, can be developed and pursued independently, or whether they need to be coordinated, and if so, how. I will come in the following section to the question of how responsibilities should be assigned.

The majority view is probably that monetary and financial stability, in the sense in which I am defining them in this lecture, are distinct goals that are most effectively pursued by separate policy instruments. Insofar as monetary policy is concerned, the key pol-

icy instrument is the short-term interest rate controlled by the central bank, and the intermediate target is the inflation rate, about two years out. Some central banks have found it helpful to develop a specific inflation-targeting regime. Those that do not use such a framework generally communicate something similar through their public statements.

Financial stability has been pursued through the elaboration of policies of prudential supervision, combined with particular instruments (the "safety net") to protect the system in case of unusual shocks. Increasing attention has been paid of late to improving the risk sensitivity of prudential supervision, and also to limiting possible moral hazard.

There is little doubt that these will continue to be the cornerstones of stability policies. Yet, as implied by the discussion in the previous section, there may be a need to take additional account of the interactions between the two. Monetary policy works through the financial system, so there is a need for the monetary authorities to know how financial institutions are being affected by the prudential supervisory framework. Similarly, the condition and vulnerability of particular institutions depends on the current and future monetary stance. Prudent behaviour by individual institutions (for example, reducing lending when the economic activity seems to be weakening) can be destabilising from the macroeconomic standpoint.

In my view, these considerations mean that it is desirable to find ways of more explicitly taking into account the interaction of monetary and financial system factors in formulating stability-oriented policies. For example, it may be helpful to consider the implications of a rate of credit expansion that is consistent with stability in the price of current output, but allows asset prices to increase at a markedly higher rate. When this occurs, it may point to financial instability down the road and, perhaps, increased difficulty in meeting inflation targets.

Looking at policies of prudential supervision, it may be desirable to reconsider the application of those that inadvertently promote procyclical price movements. These include those that measure perceived risk with relation to the current state of the business cycle. Changing provisioning practices, and encouraging through-the-cycle credit assessments, would help dampen the amplitude of the credit cycle. And the wider use of stress-testing could help limit excessive credit growth during the expansion phase of a cycle.

7 Governance issues: Assigning responsibility for policies to achieve monetary and financial stability

So far, I have been arguing that monetary and financial stability are separate but linked phenomena, and that both are important for the effective functioning of the economy. I have also pointed to some techniques by which the interaction between policies aimed at the two objectives might be taken into account. In addition to this substantive issue, however, there is an important governance question. Which body should be assigned responsibility for each objective, and how should they cooperate with each other?

The answer to this question is much easier in the case of monetary stability than in the case of financial stability. There is by now little disagreement that monetary policy should be in the hands of a central bank that has the necessary autonomy to pursue a policy of price stability.

Things are less clear-cut when it comes to ensuring the stability of the financial system. Traditionally, the central bank assumed this responsibility. Bagehot was the first to explicitly describe the Bank of England's role in this respect, but the model was followed in many other countries.

More recently, however, banking supervision has been separated from monetary policy, and located in a specialised agency, in a growing number of countries.

This raises the question which is the best model for achieving financial stability, and, if the decision is to place supervision in a separate agency, how can the central bank's remaining responsibilities be described and implemented?

The case for separating the regulation of banks from the formulation of monetary policy is that the two functions are conceptually distinct. Indeed one may even get in the way of the other insofar as management focus is diluted, and the pursuit of one sets up a conflict of interest with pursuit of the other. This could be the case, for example, if a central bank with supervisory responsibilities was induced to ease

monetary policy in order to achieve other objectives, such as protecting the solvency of banking institutions.

It is also sometimes argued that a central bank could be tainted by the shortcomings in the performance of its regulatory role and thus rendered less able to perform its monetary policy functions. More plausibly, it can be argued that supervisory oversight now needs to be coordinated among insurance, securities and banking regulators, and that it would take the central bank too far from its monetary and banking expertise to ask it to assume these additional functions. For this reason, it may be best to combine the functions of financial oversight in an integrated regulator that is well placed to treat different types of financial institution on an equal basis.

Against these arguments, there is also a powerful case to be made for leaving banking supervision within the central bank. The central bank has day-to-day contact with the financial markets that is hard to replicate in a supervisory authority, and even if it could, would represent a wasteful duplication of official expertise. Central banks need to have a clear view of the state of the banking sector's balance sheet, in order to better understand how the transmission mechanism of monetary policy will work. And in the event of systemic strains, coordination between the supervisory and central banking authority will be unavoidable, coordination that would be facilitated by having them under the same roof.

Another argument for keeping supervision in the central bank is that of independence from political pressures. In most countries, central banks enjoy a significant measure of independence and respect, hard-won over many years. They are often able to attract a high-calibre staff on the basis of this. Transferring supervisory responsibility to what might be at the outset a weaker institution would put this at risk. Charles Goodhart has noted that this is a particularly relevant argument in emerging market countries.

The foregoing begs the question of whether banking supervisory responsibilities should be regarded as the functional equivalent of responsibility for financial stability. I would argue not, and not simply because the banking sector is only one component of the financial system. Financial stability involves more than simply the prudential management of individual financial institutions. It means, in addition, the avoidance of macroeconomic imbalances that, if left unattended to, will generate financial strains that may find their expression in disruptive movements in financial asset prices and, as a result, potential strains in financial institutions. It also means attention to the market dynamics that can transmit difficulties throughout the system in the event of an exogenous shock.

It can be questioned whether financial supervisors, with responsibilities to ensure the prudent operation of financial institutions under their charge, are adequately equipped to deal with financial instability, thus broadly conceived. Indeed, this is probably why most central banks that have lost explicit responsibility for banking supervision have mostly maintained a more general responsibility for promoting financial stability.

It is not easy to describe what this residual responsibility involves. One can get some idea from both the fact and the content of the "Financial Stability Reviews" that have taken their place of late alongside the "Inflation Reports" of a growing number of central banks. Financial stability, in this conception, seems to include a responsibility to examine potentially unsustainable trends in financial markets, to review the impact on market dynamics of structural changes in the financial industry and the development of new financial instruments, and to consider the evolution of balance sheet developments at a sectoral level, as well as simply on an institutional basis.

Efforts have also been made in a number of quarters to define responsibilities in the event of a systemic threat. Among the major countries, perhaps the most coherent approach seems to be that of the United Kingdom. There, there are procedures for the Financial Supervisory Authority (FSA), the Bank of England and the Treasury to meet on a regular basis at various levels. A memorandum of understanding outlines the procedures to be followed and the relevant responsibilities in the case of a crisis. Financial assistance would have to be furnished through the Bank of England, the judgement of the condition of threatened institutions would come primarily from the FSA, and the decision on whether to commit public funds from the Treasury.

No comparable clarity of responsibility exists in either the Eurozone or in the United States. Indeed it

is legitimate to ask the question of whether a timely solution could be found in either of the latter jurisdictions in the event that financial stability was threatened by the imminent failure of a large financial institution. Developing clearer understandings of the respective responsibilities of public bodies is important unfinished business in the sphere of financial stability. It is hard to achieve focus on such questions when the prospect of systemic instability seems remote. But when such instability arises, it may well be too late.

Jón Steinsson[1]

The implementation of monetary policy and the efficiency of the money markets

In recent years the deviation between central bank policy interest rates and short-term money market rates has been much larger in Iceland than in most other countries. This article explores the causes and the options available to the Central Bank of Iceland for reducing the gap between short-term rates and its policy rate. It discusses monetary policy implementation in other countries, focusing on the impact of the electronic payment systems that they have introduced in recent years. Proposals are also suggested for changes in monetary policy implementation and measures to enhance the efficiency of the financial system.

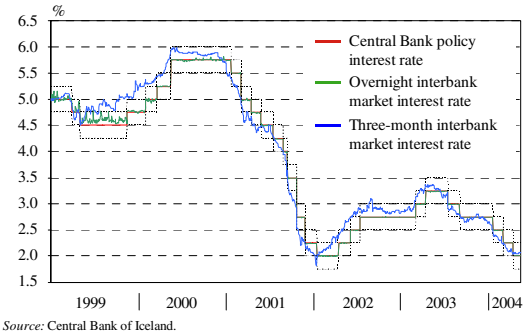
Since March 1998 the Central Bank of Iceland's main instrument has been the interest rate on its repos with credit institutions. Until spring 2001 the Bank used this rate to maintain the exchange rate of the króna within its deviation band. After moving on to an inflation target that spring, the Bank has applied its policy rate towards maintaining the target. Changes in the Central Bank policy rate are transmitted to the economy through the financial markets. The policy rate affects other money market rates, which in turn impact the exchange rate of the króna, asset prices and bank lending. These aggregates ultimately affect demand in the economy, inflation expectations and the rate of inflation. The transmission mechanism of monetary policy is described in Pétursson (2001).

An important element in the transmission mechanism of monetary policy is the relation between the Central Bank policy rate and other short-term money market rates. In other countries, short-term money market rates track Central Bank rates extremely closely. Chart 1 clearly shows that overnight rates in Canada have been virtually identical to the Bank of Canada's key policy rate for almost every single day

Chart 1

Transmission of interest rates in Canada

Daily data January 4, 1999 - May 14, 2004



Source: Central Bank of Iceland.

1. The author is a PhD student at Harvard University and worked at the Central Bank of Iceland Economics Department in the summer of 2004. He would like to thank Hallgrímur Ásgeirsson, Bergur Bardason, Haukur Benediktsson, Ingunn Bragadóttir, Peirre Duguay, Kolbrún Gudlaugsdóttir, Már Gudmundsson, Gerdur Ísberg, Pálína Kristinsdóttir, Tómas Kristinsson, David Longwood, Jón Oddleifsson, Tryggvi Pálsson, Thórarinn Pétursson and Arnór Sighvatsson for their constructive suggestions and informative discussions. The author also thanks the Graduate Education Fund of the Iceland Centre for Research for financial assistance. The views expressed in this article are those of the author and do not necessarily reflect the views of the Central Bank of Iceland.

since the beginning of 2000. Before that time, overnight rates were marginally higher than the policy rate, but never by more than 25 basis points (0.25%). Chart 1 also shows that three-month interbank market rates in Canada track the key policy rate closely, rarely deviating by more than 50 basis points.

The short-term correlation between the central bank policy rate and other short-term interest rates is much weaker in Iceland than in most other countries. Chart 2 shows the development of one-week and three-month interbank market rates.[2] In 2000 and 2001, interbank rates remained much higher than the policy rate for months on end. The deviation was most pronounced towards the end of 2001, at more than 200 basis points between one-week interbank rates and the Central Bank policy rate. Although the gap has narrowed considerably since then, it is still much greater than is the norm elsewhere. Thus one-week rates were 50 basis points above the policy rate at the beginning of 2003, then dropped below it and remained 25 basis points lower for most of 2003. Chart 2 also shows that three-month rates appear to follow short-term interbank rates and not the policy rate.

Deviations between interbank rates and the policy rate have at least two adverse effects. First, they weaken the monetary policy transmission mechanism and introduce an unnecessary element of uncertainty to it. Monetary policy is based on the Central Bank managing interest rates in Iceland's financial markets. The more control that the Central Bank has over interest rate levels, the easier it is for it to manage demand in the economy and attain its inflation target.

Second, a mismatch between interbank rates and the Central Bank's policy rate indicates inefficiencies in the financial system. Such a mismatch means that Icelandic banks finance themselves on different terms. Some raise finance through repo transactions with the Central Bank, but others in the interbank market at completely different rates. This is a sign of flaws in the interbank market as an intermediary between the banks that have excess liquidity and those that can make the best use of it. Given that one role of the Central Bank is to promote an active and efficient financial system, it should preferably do everything in its power to make the interbank market as efficient as possible.

In recent years, major changes have taken place in monetary policy implementation by central banks in many countries. Reserve requirements have been reduced or even abolished and the importance of open market operations has diminished. Sophisticated real-time electronic payment systems have been introduced which now play a key role in monetary policy implementation.

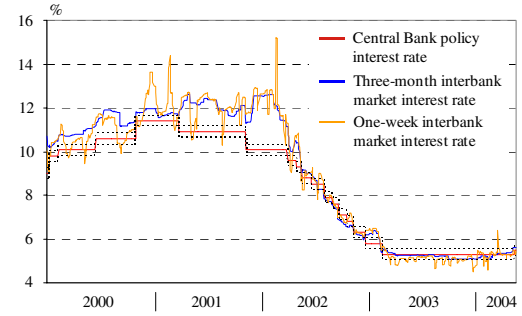
These reforms are a response to the increased importance of electronic transactions and less demand for base money. For a long time, central banks influenced interest rates through open market operations that adjusted the amount of base money.[3] In order to lower interest rates, the central bank sold base money in the interbank market in exchange for other assets such as bonds. Increased supply of base money brought interest rates down. To raise interest rates, the opposite applied. The Central Bank bought money in exchange for other assets. The lower supply of base money caused interest rates to rise.

Rapid technological advances in the financial markets have increasingly enabled banks to transfer capital from assets that are subject to reserve requirements, to others that are not. In addition, the role of

Chart 2

Transmission of interest rates in Iceland

Daily data January 4, 2000 - May 17, 2004



Source: Central Bank of Iceland.

2. Until June 1, 2004, the Central Bank of Iceland's policy interest rate was the 14-day repo rate, which would be preferable for this comparison. However, an interbank market for 14-day loans has only been operative since January 2001. Thus 14-day rates are not available for the entire period shown in Chart 2. Since January 2001, however, 14-day rates have tracked the one-week rates very closely.

3. Base money is defined as notes and coin in circulation, plus cash and deposit money banks' deposits with the Central Bank.

notes and coin has declined significantly. As a result of this development, the banks' demand for base money has been decreasing. Many economists have voiced concerns that this trend may weaken the central banks' control over short-term interest rates until they lose all control when demand for money dries up entirely (see Friedman, 1999).

Others have pointed out, however, that monetary policy implementation can be changed to avoid this problem. More to the point, several central banks have already put such systems into effect. The Bank of Canada, the Reserve Bank of Australia and the Reserve Bank of New Zealand have adopted systems that enable them to have full management of short-term interest rates (see Chart 1) despite conducting virtually no open market operations and despite having abolished reserve requirements, thereby causing demand for base money to plunge.

Electronic payment systems and the implementation of monetary policy

Monetary policy implementation in Canada, New Zealand and Australia differs in many ways from most standard textbook models.[4] In textbook models, the key difference between money and other assets is that (base) money is a non-interest bearing asset. Money is in demand because it facilitates transactions. Technological innovations in financial markets today enable the use of all kinds of interest-bearing assets to facilitate transactions, drastically eroding demand for money. The Bank of Canada has responded by paying interest on monetary deposits in the payment system. Another key feature of textbook monetary models is that central banks influence interest rates with open market operations. However, the Bank of Canada conducts virtually no open market operations.[5] Instead, it keeps the volume of base money in its Large Value Transfer System (LVTS) constant.[6] Thus textbook accounts clearly cannot be relied on for descriptions of monetary policy implementation in Canada. Instead, the system is described in full below.

The LVTS plays a key role in Canadian monetary policy implementation. In effect, the Bank of Canada influences interbank interest rates by controlling deposit and lending rates in the LVTS. In order to understand the relationship between interbank rates and LVTS rates, and how the Bank of Canada can exert a full influence over interbank rates without conducting open market operations, let us look more closely at the way the LVTS functions.

Broadly speaking, banks have current accounts in the LVTS and all large-scale interbank payments are made there. An example will clarify this process. Suppose that Alcan would like to pay Air Canada $50 million for airfares and other services. Suppose also that Alcan is a client of Bank of Montreal and Air Canada is a client of Royal Bank of Canada (RBC). Suppose, for simplicity, that the positions of all banks in the LVTS are zero before this payment is made. The payment is then made in the following manner (see Chart 3): First, Alcan contacts Bank of Montreal and asks it to make this payment. Bank of Montreal debits Alcan's account by $50 million and contacts RBC. Bank of Montreal asks RBC to credit Air Canada's account with $50 million in exchange for Bank of Montreal crediting RBC's account in the LVTS with $50 million. Bank of Montreal then contacts the LVTS and asks it to credit the account of RBC with $50 million in exchange for debiting the account of Bank of Montreal by the same amount.[7]

At the end of all these exchanges, the payment has cleared and Air Canada has been paid. More important from the point of view of the LVTS is that Bank of Montreal's balance has turned negative while RBC's balance is positive. Under the LVTS rules, banks that end the day with a negative balance in it must borrow this amount overnight from the Bank of Canada at an interest rate called the Bank Rate. Banks that end the day with a positive balance in the LVTS receive the overnight deposit rate, which

4. Monetary policy implementation in Canada, New Zealand and Australia is very similar. The remainder of this article will discuss implementation in Canada, although most of it applies to all three countries.

5. The small open market operations conducted by the bank are of a technical nature. These will be discussed separately below.

6. "Base money in the LVTS" refers here to base money less notes and coin.

7. Notice that this transaction is not described in the traditional terms of money being withdrawn from one account and deposited into another account. That terminology is unfortunate since it may imply that money in paper form is changing hands. Such a view can lead to confusion in the context of payments clearing in an electronic payment system in which no paper money exists, only credits and debits.

is the Bank Rate less 50 basis points, as determined by the Bank of Canada.[8]

Chart 3

Example of payment

Alcan	
Assets	Liabilities
-$50 m. in deposits	

Air Canada	
Assets	Liabilities
+$50 m. in deposits	

Bank of Montreal	
Assets	Liabilities
-$50 m. on LVTS account	-$50 m. deposit by Alcan

Royal Bank of Canada	
Assets	Liabilities
+$50 m. on LVTS account	+$50 m. deposit by Air Canada

Suppose that the Bank of Canada's lending rate is 6%, which would make its deposit rate 5.5%. Bank of Montreal will want to pay a lower interest rate than 6% on its $50 million dollar negative balance in the payment system. RBC, however, will want a higher rate than 5.5% on its $20 million positive balance in the payment system. These two banks therefore have an obvious incentive to transact in the interbank market before the close of the day at some interest rate between the lending rate and the deposit rate of the Bank of Canada. For example, if RBC lends the Bank of Montreal $50 million overnight at 5.75%, both banks gain 25 basis points. More to the point, both banks again have a zero position within the LVTS.

Two aspects of this example need to be underlined. First, it shows that the deposit and lending rates in the payment system form a floor and ceiling for interbank rates. Banks that are short on liquidity will not offer to pay higher interest than the payment system lending rates available to them at the central bank. Because banks with excess liquidity are assured of earning the payment system deposit rate, they will not agree to lend for less. Since the interbank rate is strictly in between the lending and deposit rates of the LVTS, all banks have an incentive to adjust their balances for payment flows by trading in the interbank market. They do so in order to end the business day with a zero position in the payment system, to avoid borrowing from the central bank or leaving funds deposited with it. Thus the system ensures the functionality of the interbank market and also that rates there are maintained between the payment system deposit and lending rates.

Second, the example shows that typical transactions within the payment system leave the aggregate balance within it unaltered. If one bank has a positive balance on any given day because its customers have paid less than they have been paid, other banks in the system will have a corresponding negative position.[9] Only two types of transaction alter the aggregate balance of the banking system in the payment system. When public demand for notes and coin changes, e.g. over Christmas, banks need to purchase these from the central bank. Banks pay for the notes and coin by reducing their deposits in the payment system. Such payments therefore change the volume of base money in the payment system.

The Treasury is in a unique position insofar as the central bank serves as its banker. Consequently, Treasury payments affect the aggregate balance in the payment system. Take a simple example: The government would like to pay Air Canada $20 million for airfares. The Bank of Canada then credits RBC with $20 million, and RBC credits Air Canada's account with $20 million. This transaction thereby increases the banking sector's aggregate balance in the payment system by $20 million.

As pointed out above, all banks in the payment system have an incentive to end the day with a zero position. However, this is only possible if the net position (aggregate balance) in the system is zero. A negative balance in the system would leave some banks with a negative position at the end of the day, but none with a positive balance. The banks with a

8. A detailed description of the LVTS is given on the Bank of Canada website, www.bankofcanada.ca.

9. The reader may wonder how total bank lending could ever increase in such a system. The flaw there is to assume that the bank needs to be in possession of the funds that are lent when the loan is granted. This is a misunderstanding, at least after the reserve requirement has been abolished. If Bank of Montreal agrees to lend Alcan $200 million, the process is as follows: Bank of Montreal raises the deposit in Alcan's account by $200 million (an entry that appears on the liability side of Bank of Montreal's balance sheet) and also records a debt of $200 million owed to it by Alcan (an entry that appears on the asset side of Bank of Montreal's balance sheet). In a certain sense, money is therefore created by this transaction.

negative position then begin bidding increasingly higher interbank rates until these are as high as the overnight rates. A positive position in the system, on the other hand, exerts downward pressure on interbank rates until they equal the deposit rate for payment system accounts.

The Bank of Canada has succeeded in preventing fluctuations in the interbank rate by actively managing the aggregate balance in the LVTS on a daily basis so as to keep it constant at zero. It does so with open market operations to neutralise the net impact of public sector flows (such as the Treasury payment in the example above) and fluctuations in demand for notes and coin on the banking sector's aggregate balance in the LVTS.[10]

As Chart 1 shows, the Bank of Canada has been incredibly successful in managing short-term interbank rates after it adopted the system described here at the beginning of 1999. Since the beginning of 2000, interbank rates have never approached the LVTS deposit or lending rates; on the contrary, they have remained very close to the midpoint between them, which is the Bank's target. This means that the Bank of Canada has never needed to make adjustments to the aggregate balance in the LVTS in order to keep interest rates where it wants them. What seems most surprising is that when the Bank of Canada changes its key policy rate, the interbank rates jump straight to a new equilibrium the same day without the Bank of Canada conducting any special open market operations. However, there is actually nothing strange about this. The banks have an incentive to achieve a zero position by trading in the interbank market at rates between the payment system deposit and lending rates. Indeed, it can be argued that they have an incentive to conduct this trading midway between the deposit and lending rates, see Woodford (2001). When these rates move, the interest rate level at which the banks have an incentive to trade moves as well.

10. Initially, the Bank of Canada kept the aggregate balance of the banking sector in the LVTS constant at zero. However, it transpired that the zero target led to slight upward pressure on the interbank interest rate, generally leaving it a couple of basis points above the spread between the LTVS deposit and lending rate. For technical reasons the banks seek to end the day with a low positive balance. Since April 2001 the Bank of Canada has kept base money in the LTVS fixed at $50 million, which has worked better. See Chart 1.

As pointed out earlier, the reserve banks of Australia and New Zealand conduct their monetary policy along the same lines as the Bank of Canada. Monetary policy implementation in Sweden and the euro area is also based on broadly the same system, although the practicalities are slightly different. The main difference is that instead of managing the overnight rate and conducting open market operations on a daily basis, the ECB and Riksbank employ one-week interest rates and conduct their open market operations with a weekly auction of one-week repos. Broadly speaking, the payment systems in the euro area and Sweden are the same. Both lend overnight to banks which end the day with a negative balance, at rates above the policy rate (50 basis points in the euro area and 75 in Sweden) and pay a deposit rate which is below the policy rate on positive balances that banks may have in the payment system overnight.

In recent years, Iceland's monetary policy implementation has been moving into line with the above-mentioned countries. More specifically, the Central Bank of Iceland has gradually been adopting a system of monetary policy implementation resembling those used by the ECB and Riksbank. Nonetheless, the Central Bank of Iceland has not been as successful as they have, or the central banks of Australia, New Zealand and Canada, in restraining fluctuations in interbank market rates and letting them follow its own policy rate. What is the reason? An attempt will be made to answer this question in the following section.

What causes interbank rates to deviate from the Central Bank's policy rate and what can be done about it?

There are probably two reasons that interbank rates do not follow the policy rate as closely in Iceland as they do elsewhere. One is that Iceland's monetary policy implementation still differs from that in the countries that lead in this field. The other is the result of a number of flaws in the general financial market framework in Iceland.

Four main aspects of monetary policy implementation in Iceland have differed in recent years from arrangements in leading countries:

Real-time gross settlement system

In recent years the payment system has become the cornerstone of monetary implementation in Canada, New Zealand, Australia, Sweden and the euro area. Iceland's own payment system has been under development at this time and is now fairly well advanced. Although shortcomings in the payment system may have contributed to the mismatch between interbank rates and the Central Bank's policy rate in recent years, they are unlikely to do so in the future.

Essentially, the payment system that has been introduced in Iceland closely resembles those used by the abovementioned countries since the second half of the 1990s. From the perspective of monetary policy implementation, the most important features of the payment system are: 1) Collateral is posted for all negative balances, so that if one member encounters difficulties, this will not gridlock payments in the system. 2) The Central Bank determines the deposit and lending rates of the payment system. Members ending the day with a negative balance are automatically lent Central Bank funds at the payment system's lending rate. Those ending the day with a positive balance are automatically paid the overnight deposit rate. 3) At the end of each day, after the cessation of payments, members of the system are allowed time (perhaps half an hour) to trade among themselves in the interbank market in order to adjust their balances to zero so that they do not need to borrow or keep deposits overnight. One important difference between the Icelandic RTGS system and, for example, the Canadian LVTS is that the Bank of Canada guarantees all payments in the unlikely event of more than one system member experiencing difficulties. This rule, combined with the posted collateral, should ensure full security of payments.

The spread in the payment system

The spread between the Central Bank of Iceland's lending and deposit rates has been close to 500 basis points in recent years. As pointed out earlier, the deposit and lending rates in the payment system form a floor and ceiling that interbank rates do not exceed.[11] The huge spread in Iceland gives short-term interest rates great scope for fluctuation. In Canada, New Zealand and Australia this spread is 50 basis points. It is 100 basis points in the euro area and 150 points in Sweden. Such a narrow spread ensures that short-term interest rates never move far from the policy rate set by these countries' central banks. Furthermore, as a result of effective short-term management of the aggregate balance in these countries' payment systems, short-term rates remain close to the midpoint of the range, thus preventing the banks from seeking short-term central bank funding that is significantly in excess of their reserve requirements.

Besides giving interbank rates ample scope for fluctuation, the wide spread in the Icelandic payment system leads to a much wider spread between bids and offers in the interbank market compared with the norm in other countries. In general the spread on one-week bids and offers in the Icelandic interbank market is in the range 25-40 basis points. Elsewhere it measures only a handful of points, and in some cases even 0-1. Iceland's wide spread is caused by the risk that, at the end of the reserve requirement maintenance period, a bank may need to borrow or maintain deposits overnight with the Central Bank if it is short or long in the payment system.[12] Such a wide divergence in the overnight deposit and lending rates from the Central Bank's policy rate means that this risk is high. Banks demand sizeable premia on interbank trading which exposes them to such risk.

Substantially narrowing the spread between overnight lending and deposit rates would be an important step in bringing interbank rates closer into line with the policy rate. It would also be important for enhancing efficiency in the interbank market, by narrowing the spread between bids and offers.

Short-term management of the aggregate balance in the payment system

Changes in short-term management of the aggregate balance in the payment system are another key factor in matching interbank rates more closely to the Central Bank's policy rate. Today, the Central Bank conducts weekly auctions of one-week repos. Between these weekly open market operations,

11. Interbank rates in Iceland have gone beyond the corridor of overnight deposit and lending rates. The causes will be discussed below.

12. At other times than the end of the maintenance period, a bank can allow its required reserve deposit to fluctuate from the average figure where it is supposed to lie.

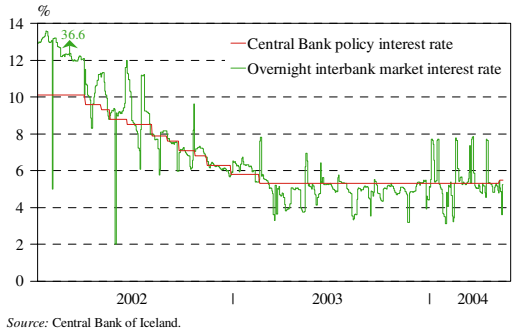
changes in the aggregate balance in the payment system – caused by Treasury flows, reserve requirements and demand for notes and cash – make interbank rates fluctuate within the week, particularly when such changes occur just before the end of the reserve requirement maintenance period.

Two approaches can be used to resolve this problem: 1) *The Swedish approach*: The Riksbank no longer handles Treasury payments. Instead, the Swedish central government is a customer of commercial banks. The Riksbank has also abolished reserve requirements. In combination, these factors lead to much smaller changes in the aggregate balance within the week, with a corresponding softening of fluctuations in interbank rates. 2) *The approach of Canada, Australia and New Zealand*: In Canada, Australia and New Zealand this problem is solved by daily central bank open market operations. The Central Bank of Iceland, for example, could offer daily overnight repos at its policy rate – or simply buy and sell instruments daily with the aim of keeping the aggregate balance in the payment system stable. There appears to be no immediate obstacle to the Central Bank continuing its weekly auctions of one-week repos even if it introduces daily overnight repos. However, the introduction of daily auctions would sharply reduce the importance of the weekly ones.

Chart 4

Overnight rates in Iceland

Daily data January 3, 2002 - May 17, 2004



Source: Central Bank of Iceland.

Reserve requirement

In recent years the leading countries in monetary policy implementation have either abolished reserve requirements or begun paying interest on them which is comparable to interbank rates. The Central Bank of Iceland has not gone so far in reforming its reserve requirements. Nonetheless, it has changed rules on reserve requirements significantly with the aim of reducing the inefficiencies that they cause the banking system. Reserve requirements have been trimmed back and the Central Bank has begun paying interest on required reserve accounts, although these are still lower than its policy rate at any given time.

In effect the spread between required reserve accounts and the policy rate is the premium that banks pay the Central Bank for its services to the financial system. As described above, central banks no longer use required reserves to influence lending growth in the banking system. The sole role of required reserves today is as a source of income for the Central Bank. Raising the required reserve deposit rate would have a negative impact on the Central Bank's profitability. In other countries this is irrelevant, because central bank income in larger economies is much greater than operating costs, even when there is no reserve requirement. The Central Bank of Iceland's other sources of income are much smaller, due to the small size of the Icelandic economy.[13] Hence it is not as easy for the Central Bank of Iceland to abolish required reserves or raise its required reserve deposit rate to parity with the policy rate. A precondition for such measures is that they do not jeopardise the Bank's financial independence.

The drawback to a reserve requirement is that it causes fluctuations in short-term interbank rates just before the end of the maintenance period (see Chart 3). This problem can be avoided with better short-term management of balances along the lines discussed above, and also by narrowing the spread between payment system borrowing and lending rates. Nonetheless, the reserve requirement played no part in the pronounced mismatch between interbank rates and the policy rate which developed in 2000 and 2001.

13. The Central Bank of Iceland's two main sources of income are proceeds from the issue of notes and coin, and returns on investment of the Bank's capital. Proceeds from note and coin issues are insubstantial in Iceland because of the small size of the economy. Income on the Bank's investments is much greater.

Iceland's monetary policy implementation arrangements are not the sole cause of the mismatch between the interbank rate and policy rate. A distinguishing feature of Iceland's financial market is its very few participants. This can result in oligopolistic behaviour and other problems arising from the small size of the market, hindering it from functioning as well as those in other countries. Four explanations are often given for the mismatch between interbank rates and the policy rate: 1) A bank with tight liquidity likewise lacks the collateral to be eligible for Central Bank repos. 2) A bank will not engage in repo transactions with others, since these inform the counterparty about its exposure in certain securities and the counterparty may take advantage of this in its own trading with them. 3) The banks' unsecured credit lines with each other are too low to fulfil demand. 4) The banking sector as a whole lacks eligible securities for use in Central Bank repos.

These problems are far from insurmountable. In all probability, three tweaks to Iceland's financial market arrangements would remove them:

Interbank repos and the Iceland Stock Exchange transaction fee

Shortage of eligible collateral by one bank should not be a problem, since that bank can acquire assets through repos with other banks.[14] Nor should the bank's low unsecured credit lines with each other be a problem. Instead of unsecured lending to each other, the banks ought to be able to conduct repo transactions with each other. Such transactions are in effect the equivalent of secured loans, but with the advantage of being easier to arrange. Icelandic banks should be able to solve the majority of problems that have plagued their financial management in recent years through repo transactions with each other and with other Icelandic financial institutions.

On first impression it is extremely strange that Icelandic financial institutions should not conduct repos with each other on a larger scale. But a closer examination reveals that a number of flaws in Iceland's financial market organisation prevent them from conducting repos with each other to the extent that they should.

The most serious obstacle to interbank repos is the fee that banks have to pay Iceland Stock Exchange (ICEX) for such transactions. ISE charges a fee for trading with securities other than equities amounting to 0.0045% of the trade amount. In repos, both the buyer and the seller need to pay this sum twice, since a repurchase is in effect a double trade. This low percentage is not an obstacle to portfolio trading. However, it is a major hindrance in overnight repo trading of the kind that banks would need to conduct as part of their short-term liquidity management. Gains on such trading are only a fraction of the total trade amount, because of their very short-term nature. Thus the ICEX fee can mean that such trades are not worth the costs they entail, severely complicating the banks' short-term liquidity management.

Let us consider a simple example. Since 2003 the Central Bank has offered the banks 14-day certificates of deposit (7-day since June 1, 2004) at a rate generally 20 basis points below the repo rate. In April 2004 bank A bought CDs on average for 10 b.kr. at an interest rate of 5.1% while bank B conducted repos at 5.3% for much higher amounts. Both these banks could have gained by trading with each other at an interest rate in the range 5.1-5.3%. They would have gained roughly 400 thousand krónur for each 14-day period (based on a trading rate of 5.2% with insubstantial transaction costs). ICEX's total fee for the trade, however, would have been 1.8 m.kr. Thus the cost of the transaction would be several times greater than the profit on it.

The fact that ICEX's transaction fee makes it unprofitable for banks to eliminate a spread of tens of basis points plays a large part in the mismatch between interbank rates and the Central Bank's policy rate. Cutting the ICEX fee to one-hundredth or one-thousandth of its present level in the case of short-term repos is an important step towards improving cash management within the banking sector and levelling out the mismatch between the interbank rate and policy rate.

14. A crucial point here is that commercial banks can post all kinds of assets as collateral in repos with each other, even those that the Central Bank does not define as eligible. The Central Bank's definition of eligible collateral is very narrow. Only Treasury bonds, Treasury-guaranteed bonds, housing bonds and corporate bonds from issuers with an international credit rating are accepted as collateral by the Central Bank. Consequently, for example, bank A, which owns stocks but an insufficient amount of securities that are eligible as collateral for Central Bank transactions, can conduct a repo with bank B, which has plenty of them.

Repos with pension funds

In 2000 and 2001 the banking sector as a whole was sometimes apparently short of eligible collateral. Short-term interbank rates occasionally rose beyond Central Bank overnight rates, even though all banks with eligible securities had the opportunity of funding through Central Bank overnight facilities. Such a situation indicates serious inefficiencies in liquidity management in the Icelandic financial markets. Eligible collateral was always in ample supply. Banks lacking eligible collateral should, for example, have been able to procure assets through repos with pension funds, which held large portfolios.

It was not only the ICEX fee that prevented more trading. In part a repo is a forward contract, with an agreement made about the second half of the transaction when the first is concluded. Pension funds are prohibited by law from forwards trading except as a hedge – for example, to hedge against the inherent exchange-rate risks in their foreign equity portfolios. Normally, however, they may not conduct repos with banks in need of eligible collateral, since such trades do not as a rule provide a hedge, but would be simply aimed at profiting from the banks' need for assets to use as collateral.

The justification for the general ban on forwards trading by pension funds is that they often entail large risks that are difficult for outsiders to appreciate. However, this probably does not apply to short-term repos with the banks. Carrying very low risk, they should represent a desirable way for pension funds to squeeze out a marginal but economical extra return (i.e. without entailing too high a risk). In addition, freedom for pension funds to conduct repos with banks is important for the whole financial sector. Allowing them to do so would give the financial system access to a far greater stock of assets that are eligible for use as collateral. Insofar as the lack of eligible collateral is an impediment to the Icelandic financial sector, such authorisation would enhance its efficiency.

Anonymous interbank repos

Another obstacle to interbank repos is the banks' unwillingness to inform others about their holdings in individual classes of securities.[15] The other banks' knowledge leaves a bank at a disadvantage when it conducts other types of trading with such securities.

Banks should be able to solve this problem by conducting repos with securities that they have obtained in repos with other banks. If the banks were to do this on a large enough scale, bank A could not conclude that bank B owned certain securities that bank A uses in repos. It would be just as likely to have obtained them in a repo with another bank.

The disadvantage of this solution, however, is that the banks would have to conduct extensive trading for the sole purpose of concealing which securities they actually owned. This drawback could be avoided by establishing a formal blind market where banks could conduct anonymous repos with each other. Establishing such a market is probably the best way to ensure that banks do not shy away from repo transactions with each other.

Conclusion

Much greater deviations occur between interbank market rates and the central bank policy rate in Iceland than in the countries that are most successful in implementing their monetary policy. There are two causes. One is that monetary policy implementation in Iceland still differs from that in the leading countries. The other is that some flaws still remain in the organisation of Icelandic financial markets.

Several points have been identified that could easily be improved and, in combination, would probably lead to a significantly narrower spread between interbank rates and the policy rate, or eliminate it completely, without the banks having to step up their funding from the Central Bank. First, the spread between Central Bank overnight lending and deposit rates needs to be narrowed. Today it stands at 450 basis points. It would be desirable to reduce the spread to 50-150 basis points. Second, the Central Bank needs to improve its short-term management of aggregate balances in the payment system. Two ways of achieving this are identified. The simplest approach would be for the Central Bank to conduct daily open market operations. The other approach is to engineer a substantial reduction in fluctuations in

15. Under a repo, A sells B securities in exchange for cash (or other securities) and agrees at the same time to repurchase the same securities from B at a specified date. After the transaction, B therefore knows that A holds these specific securities.

base money by transferring Treasury transactions to commercial banks and abolishing reserve requirements. Third, ICEX needs to reduce its fee for repo transactions to between one-hundredth and one-thousandth of its current level. This would enable banks to conduct short-term repos with each other, greatly facilitating their short-term cash management. Fourth, legislation should be amended to allow pension funds to conduct short-term repos with banks. Fifth, a formal market needs to be established where banks can conduct anonymous repos with each other.

Chart 2 shows that, since May 2002, interbank rates have tracked the Central Bank's policy rate much more closely than they did during the economic upswing of 2000 and 2001. This might invite the conclusion that large-scale deviations of the interbank rate from the policy rate of the Central Bank were a thing of the past. Various improvements have been made in recent years relating to the Central Bank's RTGS system and other aspects of monetary policy implementation. These changes reduce the probability of such large deviations when the system next comes under severe strain. However, the spread between interbank rates and the policy rate has remained as large as almost 100 basis points at times over the past two years. Such mismatches and the volatility that they cause in interbank interest rates leave Iceland's financial markets less efficient than they otherwise might be. The reforms suggested in this article would represent an important step towards boosting the efficiency of Iceland's financial markets.

References

Friedman, Benjamin, (1999). "The Future of Monetary Policy: The Central Bank as an Army with Only a Signal Corps?", *International Finance 2*, 231-338.

Pétursson, Thórarinn G. (2001). "The transmission mechanism of monetary policy", *Monetary Bulletin*, 2001/4, 62-77.

Woodford, Michael, (2001). "Monetary Policy in the Information Economy", in *Economic Policy for the Information Economy*, Kansas City: Federal Reserve Bank of Kansas City, 2001.

Appendix Monetary policy implementation: an international comparison

The central banks of most OECD countries implement their monetary policies along broadly the same lines. They differ in a number of details, however. The following is a comparison of monetary policy implementation in Australia, Canada, Norway, New Zealand, Sweden, the UK, the US, the euro area and Iceland.

The basic concept behind monetary policy implementation in all these regions is the same as that described for Canada in this article. Central bank overnight lending and deposit rates set the corridor for overnight rates. The central bank announces a policy rate which in most cases lies at the midpoint between its overnight lending and deposit rates. The central bank then conducts open market operations and offers repo transactions aimed at matching interbank rates closely to the policy rate.

Table 1 presents a summary of the main features of monetary policy implementation in these regions. Most of them use an overnight policy rate. In Iceland, the euro area and Sweden it is the seven-day rate. In the UK, the Bank of England's 14-day repo rate serves as the policy interest rate. The central banks conduct market operations on either a daily or a weekly basis: weekly in Iceland, Sweden and the ECB, and daily in the others. The spread between overnight lending and deposit rates varies considerably from one country to the next. Excluding Iceland and the US, however, it is between 50 and 200 basis points everywhere. Most of the countries in this comparison have abolished reserve requirements, although the two largest (the US and the euro area) and the two smallest (Iceland and Norway) retain them.

These policy features affect how successful the central banks of these countries are in restraining deviations between interbank rates and their own policy rates. Another factor is the precision of their short-term management of aggregate balances in the payment system. Australia, New Zealand, Canada and Sweden have achieved the best results in this respect.

Table 1 Main features of monetary policy implementation in selected countries

Country	*Policy rate*	*Spread between payment system deposit and lending rates (basis points)*	*Frequency of open market operations*	*Reserve requirement*	*Deviations between interbank and policy rate*
Australia	O/N	50	daily	No	none
US	O/N	variable[1]	daily	Yes	stable
UK	14-day	200-300[2]	daily	No	stable
Canada	O/N	50	daily	No	none
Norway	O/N	200	daily	Yes	stable
New Zealand	O/N	50	daily	No	none
Sweden	7-day	150	weekly	No	none
Euro area	7-day	100	weekly	Yes	At end of maintenance periods
Iceland	7-day	450	weekly	Yes	Stable

1. The Federal Reserve's deposit rate is always zero, while its lending rate is 100 basis points above its policy rate.
2. The Bank of England conducts several rounds of open market operations on each business day. The first two are set at its policy interest rate. In the third round the Bank offers deposits at a rate 100 basis points lower than its policy rate, and a lending rate 100 basis points higher. In the fourth round the spread is raised to 150 basis points.

Már Gudmundsson[1]

The Icelandic currency and financial system

Based on a talk given at a conference to mark the 120th anniversary of Svarfadardalur Savings Bank (Sparisjóður Svarfdæla) on May 1, 2004

This article will give an overview of the 120-year history of the Icelandic financial system and present questions about the future. The occasion is the 120th anniversary of Svarfadardalur Savings Bank (Sparisjóður Svarfdæla, SPS), which was established on May 1, 1884. It was one of the first savings banks in Iceland and is also one of the oldest that is still fully operative.[2] Inevitably this will be a brief survey, but I shall try to shed light on a number of key issues.

What was the economic and monetary landscape in Iceland like when SPS was established in 1884? Iceland was one of the poorest and most underdeveloped countries in Western Europe. At the end of the 19th century, its GDP per capita was lowest among all the countries now classified as Western Europe, with the single exception of Finland.[3] Iceland at that time was part of the monetary system of Denmark, which had been in a currency union with the other Nordic countries since 1873. The Nordic currencies were on a gold standard, i.e. they were convertible into gold at a fixed rate. Consequently, there was free movement of capital between Iceland and Denmark. However, the domestic financial system was extremely underdeveloped. In 1880 the only financial institutions in the country were five savings banks.[4] International comparisons often evaluate the degree of development of financial systems by examining the ratio of broad money to GDP. Broad money consists of notes and coin in circulation and deposits in commercial banks and savings banks. It therefore provides a measure of the scope of monetary transactions and the domestic disposable funds of deposit banks available for lending. In Iceland this ratio was only 5% around the time that SPS was established, and there were constant complaints of a lack of money and credit in Iceland at this time.[5]

Since 1884, Iceland's economy and financial system have been revolutionised. National income per capita is the sixth highest in the world. Iceland is closely integrated with the global economy. Capital movements to and from Iceland have been almost completely deregulated since the beginning of 1995. Iceland has an independent Central Bank which implements monetary policy, and has its own currency, the value of which is determined by market forces.

This development would not have taken place without the growth and evolution of the financial sys-

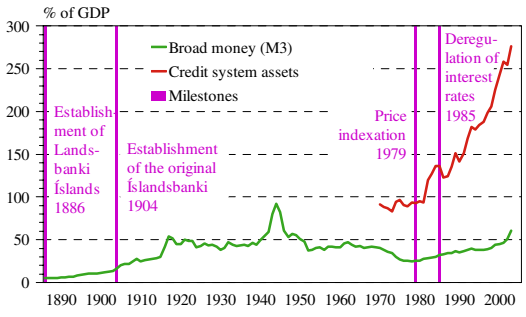
1. The author was Chief Economist of the Central Bank of Iceland when this talk was presented, but is now Deputy Head of the Monetary and Economics Department of the Bank for International Settlements (BIS) in Basel. The views expressed are those of the author and do not necessarily reflect the views of the BIS or the Central Bank of Iceland.
2. The history of the savings banks has been described by Haraldur Hannesson (1984). According to G. Karlsson (1975), the first savings bank in Iceland was established by landless farm workers in Skútustaðahreppur in 1858, but dissolved in 1864.
3. See G. Jónsson (1999), *Hagvöxtur og iðnvæðing – Þróun landsframleiðslu á Íslandi 1870-1945*.
4. See *Hagskinna* (1997).
5. This ratio is currently around 27% on average among the least developed countries in the world, and rarely drops below 10%.

tem. Relative to Iceland's size, it is now very strong. More than 100 financial institutions are operative in Iceland, including 4 commercial banks, 24 savings banks, 51 pension funds and 15 insurance companies. Modern financial markets, such as bond, equity, money and foreign exchange markets, have been created, although in some cases they have not acquired a modern form until the last decade. Broad money is now equivalent to 60% of GDP, while assets of the credit system as a whole, i.e. deposit money banks combined with pension funds, foreign credit, etc., are equivalent to almost three times GDP. The latter ratio is probably more comparable with the 5% ratio of broad money to GDP in 1884, which shows the quantum leap that Iceland has taken in this respect.

In what follows, an attempt will not be made to give a comprehensive answer to how this happened. It is generally acknowledged that financial system evolution and economic progress must go hand in hand, although it is sometimes disputed which came first, the chicken or the egg. I pointed out above that broad money was equivalent to 5% of GDP around the time that SPS was established. Chart 1 shows the development of this ratio since then, and also how the credit system as a whole has expanded since 1970. The establishment of the two commercial banks that in their day were authorised to issue banknotes, namely Landsbanki Íslands in 1886 and the original Íslandsbanki in 1904, gave a powerful impulse to this trend, but the growing number of savings banks also contributed. The ratio was just under 50% shortly before 1920, where it broadly remained until the 1950s apart from a spike during World War II.

Chart 1

Broad money since 1886 and size of the credit system 1970-2003



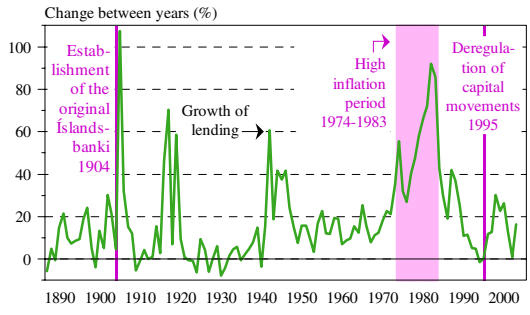
Sources: Statistics Iceland, Central Bank of Iceland.

Mounting inflation and negative real rates of interest in the 1970s, however, sent it tumbling. When the ratio hit a low just before 1980, there had been mounting concern for some time that inflation would undermine the domestic financial system and its ability to fund domestic business, and the share of foreign borrowing in the Icelandic credit system was growing rapidly. This trend was turned around with the introduction of price indexation in 1979, followed by deregulation of interest rates in the mid-1980s. The credit system then mushroomed in the 1990s with financial system reforms and sharp growth of pension funds.

Nonetheless, the development was uneven, as Chart 2 shows. Lending sometimes increased at a normal rate for a growing economy with low inflation. Sometimes it was sluggish, which was both the cause and the effect of business difficulties. Episodes of excessive credit expansion also occurred, either leading to financial instability when loan quality proved inadequate, or coinciding with high inflation, as in the period 1974-1983. The last credit boom took place following the deregulation of capital movements and financial system reorganisation which eventually coupled up with heavy macroeconomic imbalances in 2000. The question is, are we on this path again?

Chart 2

Growth of lending 1887-2003



Sources: Statistics Iceland, Central Bank of Iceland.

The choice of an exchange rate regime obviously exerts a great impact on the development of the economy and the financial system. I mentioned earlier that Iceland belonged to the Nordic currency union around the time that SPS was established. The cur-

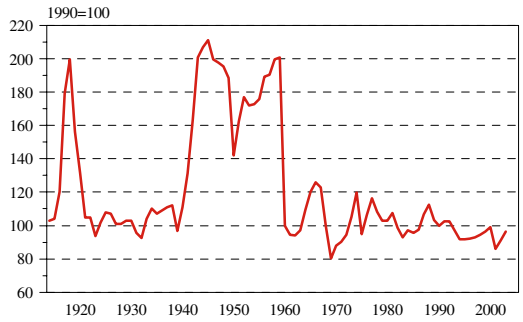
rency union collapsed when the convertibility of Nordic currencies for gold was abandoned at the start of WWI. However, the Icelandic króna kept its parity with the Danish krone until it was floated in 1922. In effect, the Icelandic króna first acquired its independent existence as a currency then. The króna floated until 1925, when it was pegged against sterling. That decision marked the beginning of one of the longest periods of fixed exchange rate in the history of the króna, lasting until a devaluation of 18% in spring 1939. Subsequently the króna was pegged against the dollar, and this arrangement continued until the end of 1973, although the level of the peg was repeatedly altered by the government over that period. During the high inflation period of 1974-1983 the króna virtually floated, despite being officially controlled. From 1983 onwards, experiments were made with using at least temporary exchange rate stability to curb inflation, which was running out of control at that time.[6] Inflation was later brought down to broadly the same level as in Iceland's trading partner countries through a variety of measures in the late 1980s and early 1990s, with a key role played by the decision in December 1989 to fix the króna at a realistic exchange rate.[7] When capital movements were fully deregulated in the mid-1990s, like most other countries Iceland experienced greater difficulty in maintaining a stable exchange rate and the policy could on occasion clearly come into conflict with the objective of price stability. The exchange rate was therefore gradually made more flexible in the closing years of the 1990s and eventually the króna was floated in March 2001. An inflation target was set for the Central Bank of Iceland and it was granted full instrument independence to attain it, first with an agreement with the government and later enshrined in law. Iceland has thus experimented with almost every exchange rate regime. The path lay from currency union and price stability to a floating exchange rate with price stability, but with severe bouts of instability in between. It is not certain that the final word of that story has been spoken.

6. The history of Iceland's exchange rate is discussed, for example, in Nordal and Tómasson (1985) and Gudmundsson, Pétursson and Sighvatsson (2000).

7. For a discussion of inflation, disinflation and the role of exchange rate policy in Iceland, see Andersen and Gudmundsson (1998).

Chart 3

Real exchange rate of the króna 1914-2003

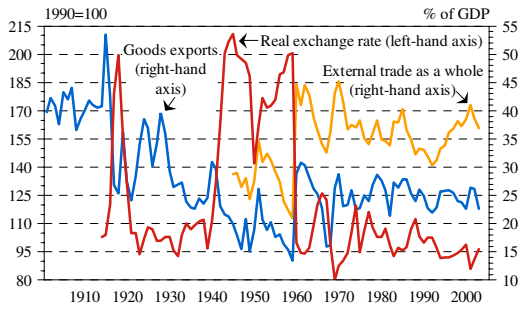


Source: Central Bank of Iceland.

Despite all the upheavals, the real exchange rate of the króna appears to have fluctuated around a stable central value, as shown in Chart 3, excluding the period of the two world wars when Iceland's possibilities for conducting international trade were seriously impaired. Chart 4, however, shows that goods exports declined steadily as a proportion of GDP until almost 1960. For the most part this probably reflects general economic developments and greater prosperity, with a corresponding expansion of the domestic market, rather than wrong exchange rate policy. But the excessively strong exchange rate from the end of World War II, and until the devaluation when the first economic liberalisation began under the "government of restoration" in the early 1960s, apparently hindered foreign trade, and goods exports and external trade as a whole rose in proportion to GDP following the devaluation.

Chart 4

External trade and the real exchange rate of the króna until 2003



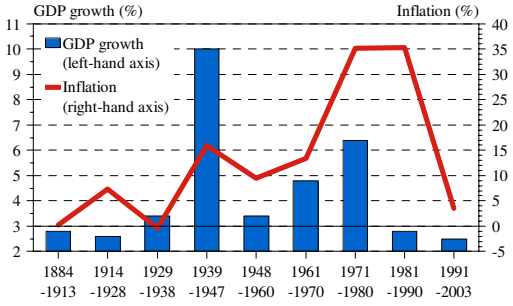
Sources: Statistics Iceland, Central Bank of Iceland.

As mentioned above, Iceland has developed from one of the poorest nations in Europe to the sixth most prosperous in the world in per capita terms. But this trend has been uneven, as Chart 5 shows, and for a long time instability was endemic. Apart from the boom during World War II, economic growth was strongest in the 1950s and 1960s, but this was also the period when inflation gained speed and even ran out of control for some while. In today's more advanced economy, such a robust pace of growth cannot be expected. Without allowing for the impact of temporary imports of labour, Iceland can be expected to sustain an annual output growth of just over 3% without imbalances and inflationary pressures forming.

Chart 5

GDP growth and inflation 1884-2003

Annual average for each period



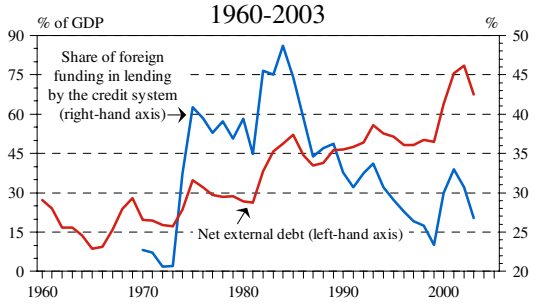
Source: Statistics Iceland.

Output growth in recent decades went hand in hand with continually mounting foreign debt as a proportion of GDP, as Chart 6 shows. To a large extent this reflects a persistent current account deficit over this period. This need not be unnatural in light of the extensive development that took place over these years and the young average age of the population, but debtors are of course more sensitive to shocks than those who owe nothing. Interestingly, despite this development the share of foreign funding in the credit system has been decreasing since the mid-1980s, which reflects rapid growth in the stock of financial saving at domestic financial institutions. This is rather at odds with claims that the króna has been dwindling in importance.

How have the savings banks performed during these developments? As it happens, quite well, as

Chart 6

Net external debt and share of foreign funding in lending by the credit system 1960-2003

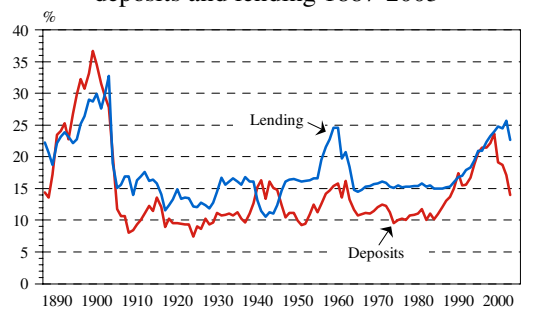


Sources: National Economic Institute, Central Bank of Iceland.

Chart 7 shows. After the original Íslandsbanki had established itself towards 1910, savings banks accounted for around 15% of deposits and, with a few exceptions, remained roughly around that level until almost 1990. Since then the savings banks have been gaining ground.

Chart 7

Share of savings banks in total bank deposits and lending 1887-2003



Sources: Statistics Iceland, Central Bank of Iceland.

It may be worth following up this historical overview by considering the future in light of past experience. There is no question that the inflation target and floating exchange rate that were adopted in March 2001 have produced good results. The inflation target was attained towards the end of 2002 and although inflation has been rising recently it still remains within the tolerance limit, and at least in part is explained by temporary external factors such as soaring oil prices. At the same time, exchange rate developments contributed to better macroeconomic

balance, and the wide current account deficit that built up at the end of the last upswing disappeared in 2002. After the exchange rate completed its adjustment following the systemic reforms, it has been considerably less volatile than is the norm, for example, for larger currencies.

Nonetheless, it cannot be claimed that Iceland has reached home base as far as the exchange rate regime is concerned. Participation in the European single currency would obviously have various advantages for Iceland. One would be to stimulate imports and exports by eliminating the exchange rate risk inherent in a large part of Iceland's foreign trade. Research suggests that increased foreign trade provides an impulse to economic growth, at least in the short run. Access to large capital markets without exchange rate risk would also entail a number of benefits. Competition would be enhanced and costs would decrease, without necessarily raising the risk profile for the financial system as a whole. The reason is that the risk of a localised Icelandic currency crisis would be a thing of the past and the Icelandic financial system would have access to a much wider safety net than today. But such a step would also entail various disadvantages, the greatest being that the possibility of applying an independent monetary policy to respond to localised shocks would no longer be at hand. It is clear that such a step will not be made unless Iceland joins the European Union. That, in turn, would involve a political decision embracing a range of wider factors than the exchange rate regime and monetary policy. However, if the point is reached when that step is taken, to some extent we will then be in the same footsteps as when Svarfadardalur Savings Bank was established 120 years ago.

So what can be said about the future of Icelandic financial institutions? Icelandic banks are currently expanding across borders, which has brought them growth on a scale once thought impossible. If Iceland becomes part of the euro area the result would not only be tougher competition facing Iceland's financial institutions, but also more scope for their international expansion. Nonetheless, it is very likely that there will continue to be a need for localised financial institutions that know the individuals and the small and medium-size enterprises in their community and thus have an advantage in evaluating their creditworthiness. There are few obstacles to savings banks performing that role, but in order to survive, the savings banks, like all other financial institutions, will need to adapt to ever-changing conditions.

References

Andersen, P., and M. Gudmundsson (1998), Inflation and disinflation in Iceland, *Central Bank of Iceland Working Paper No. 1*.

Gudmundsson, M., T.G. Pétursson and A. Sighvatsson, (2000), Optimal exchange rate policy: The case of Iceland, *Central Bank of Iceland Working Paper No. 8*.

Hagskinna. Sögulegar hagtölur um Ísland (Icelandic Historical Statistics). Eds. G. Jónsson and M. S. Magnússon (Reykjavík, 1997).

Hannesson, H. (1984), Um upphaf sparisjóðsstarfsemi á Íslandi (The beginning of savings bank activities in Iceland), in *Afmælisrit Sparisjóðs Svarfdæla 1884-1984*. Ed. H. E. Thórarinsson. Dalvík, Svarfadardalur Savings Bank (Sparisjóður Svarfdæla). pp. 10-25.

Jónsson, G. (1999), *Hagvöxtur og iðnvæðing – Þróun landsframleiðslu á Íslandi 1870-1945* (Economic growth and industrialisation – the development of GDP in Iceland), National Economic Institute.

Karlsson, G. (1975), Fyrsti sparisjóður á Íslandi? (The first savings bank in Iceland?), in *Afmælisrit Björns Sigfússonar*.

Nordal, J. and Ó. Tómasson (1985), Frá floti til flots (From float to float), in *Klemensarbók*, S. Snævarr (ed.), The Association of Icelandic Economists (Félag viðskipta- og hagfræðinga).

Monetary policy and instruments

The target of monetary policy

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

- The Central Bank aims for an annual rate of inflation, measured as the annual twelve-month increase in the CPI, which in general will be as close as possible to 2½%.
- If inflation deviates by more than ±1½% from the target, the Central Bank shall be obliged to submit a report to the government explaining the reason for the deviation, how it intends to respond and when it expects the inflation target to be reached once again. This report shall be made public.[1]
- The Central Bank publishes a quarterly inflation forecast, projecting two years into the future, and explains it in the *Monetary Bulletin*.

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

Main monetary policy instruments

In particular, the Central Bank implements its monetary policy by managing money market interest rates, primarily through interest rate decisions for its repurchase agreements with credit institutions. Yields in the money market have a strong impact on currency flows and thereby on the exchange rate, and in the long run on domestic demand. Broadly speaking, transactions with credit institutions can be classified into fixed trading instruments and market actions.

Fixed trading instruments:

- *Current accounts* are deposits of the credit institutions' undisposed assets. These are settlement accounts for netting between deposit institutions and for interbank market trading, including transactions with the Central Bank. Interest rates on these accounts set the floor for overnight interest rates in the interbank market.
- *Overnight loans* are provided on the request of credit institutions and secured with the same securities that qualify for repo transactions (see below). Overnight interest rates form the ceiling for overnight interest rates in the interbank market.
- *Certificates of deposit* are issued with a maturity of 90 days, on the request of credit institutions. Although they are unlisted, they qualify for repo transactions. Their role is to establish the floor for three-month yields in the money market.
- *Required reserves* are made with the Central Bank by credit institutions which are not dependent on Treasury budget allocations for their operations. The required reserve base comprises deposits, issued securities and money market instruments. The required reserve ratio is 2% for the part of the required reserve base which is tied for two years or longer. The maintenance period is based on the 21st day of each month until the 20th of the following month, and the two-month average reserve is required to reach the stipulated ratio during the period.

Market actions:

- *Repurchase agreements* are the Central Bank's main instrument. Auctions of 7-day agreements are held every week. Credit institutions need to put up securities that qualify as collateral. Fixed-price auctions have been used so far.
- *Certificates of deposit* with a maturity of 7 days are auctioned weekly. Their function is to counteract temporary surplus liquidity in the banking system. The Dutch auction format is used.
- *Securities market trading* is limited to treasury-guaranteed paper and is rarely used.
- *Foreign exchange market intervention* is only employed if the Central Bank considers this necessary in order to promote its inflation target or sees exchange rate fluctuations as a potential threat to financial stability.

Overview of Central Bank interest rates

		Last change		
August 31, 2004	*Current rate (%)*	*Date*	*Percentage points*	*Rate one year ago*
Current accounts	3.75	July 6, '04	0.50	2.8
Overnight loans	8.25	July 12, '04	0.25	7.7
Certificates of deposit (90 days)	5.75	July 12, '04	0.50	4.8
Required reserves	5.00	July 12, '04	0.50	4.1
Repos	6.25	July 12, '04	0.50	5.3

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

Prudential regulation on liquidity ratio and foreign exchange balance

Prudential regulation in financial markets generally aims to contribute to secure and reliable practices in financial services. This is a fairly broad concept, including regulations on requirements for management practices in financial companies, their liquidity, consumer protection and effective internal and external supervision of their activities. In a broad sense prudential regulation also aims to contribute to financial and economic stability. By law, the Central Bank of Iceland sets rules for the liquidity ratio of credit institutions and for their foreign balance. Other prudential regulations in financial markets are either sanctioned by law, or set by a government minister or the Financial Supervisory Authority.[1] The main content of the rules on liquidity ratio and foreign balance is as follows:

Liquidity ratio

A credit institution's liquidity ratio may be defined as the ratio between its liquid claims and liquid liabilities. Rule no. 386 of May 29, 2002 (cf. Art. 12 of the Central Bank Act no. 36/2001), stipulates the liquidity ratio of credit institutions. The regulation aims to ensure that credit institutions always have sufficient liquidity to meet foreseeable and conceivable payment liabilities over a specified period. They are obliged to submit a monthly report to the Central Bank containing data on which calculation of the liquidity ratio is based. Claims and liabilities included in these calculations are classified according to their nature, maturity and risk. The proportion of each category included in the calculation is also specified. For example, all of an institution's cash is considered a liquid claim, but only 5% of overdrafts. The ratio is calculated for four periods, namely liquidity within one month, from one and up to three months, from three and up to six months, and from six and up to twelve months. The ratios of claims to liabilities which fall due or can be liquidated within one month and three months shall not be lower than 1. If an institution fails to fulfil these requirements, the rules provide for per diem penalties which are levied on the shortfall. Credit institutions must also report their liquidity ratios for other periods, although no specific levels are required to be maintained.

Foreign balance

A credit institution's foreign balance may be defined as the difference between its foreign-denominated assets and liabilities, on and off the balance sheet. Foreign balance is therefore a measurement of an institution's foreign exchange risk. Rule no. 387 of May 29, 2002 (cf. Art. 13 of the Central Bank Act no. 36/2001), stipulates the foreign balances of credit institutions and financial intermediaries. The regulation aims to limit foreign exchange risk by preventing the foreign balance from exceeding certain limits. Two types of limit are stipulated in this respect. One is exposure in individual currencies, which may neither be positive (long) nor negative (short) by more than the equivalent of 15% of equity according to the most recently published financial statements. An exception is made for the US dollar and euro, however, where the limit is 20%. The other limits apply to the total foreign exchange position in all currencies, calculated in domestic currency, which is the sum of positions in individual currencies and may neither be long nor short by more than 30% of equity according to the most recently published financial statements. Credit institutions are obliged to submit regular monthly reports on their foreign balances to the Central Bank. Credit institutions with a balance exceeding the above limits shall take immediate measures to adjust it, and it shall be brought inside the permissible limits within three business days. If an institution fails to correct its balance within this time limit, the rules provide for per diem penalties.

1. See the websites of the Ministry of Commerce (http://www.stjr.is/interpro/ivr/ivr.nsf/pages/log) and Financial Supervisory Authority (http://www.fme.is/fme.nsf/pages/index.html).

Economic and monetary chronicle

May 2004

On May 4, Straumur Fjárfestingarbanki hf., an investment bank, was licensed as a securities broker.

On May 6, the Central Bank of Iceland announced that it had decided to raise its policy interest rate (i.e. its repo rate in transactions with credit institutions) by 0.2 percentage points to 5.5% as of May 11. The Bank's other interest rates were also raised by 0.2 percentage points on May 11.

On May 11, the National Debt Management Agency signed agreements with market makers concerning issues of Treasury bonds. From June 1, 2004 six banks have been designated principal market makers: commercial banks Íslandsbanki hf., KB banki hf. and Landsbanki Íslands hf.; investment bank MP Fjárfestingarbanki, the savings banks' clearing house Sparisjóðabanki Íslands, and savings bank Sparisjóður Reykjavíkur og nágrennis.

On May 13, the Housing Financing Fund (HFF) announced it had commissioned Deutsche Bank AG of London to act as advisor and lead manager for the restructuring of its benchmark housing bonds.

On May 19, the Central Bank of Iceland announced changes to its Rules on Transactions with the Central Bank by Credit Institutions Subject to Minimum Reserve Requirements. Under the new Rules, maturities of the Bank's regular market instruments, i.e. repurchase agreements and certificates of deposit, are shortened from 14 days to 7 days, effective as of June 1, 2004.

On May 19, Fitch Ratings affirmed its credit ratings on the Republic of Iceland, awarding AA- for long-term obligations in foreign currency, AAA for domestic obligations and F1+ for short-term foreign debt. The outlook on the ratings was stable.

June 2004

On June 1, the Central Bank of Iceland announced that it had decided to raise its policy interest rate (i.e. its repo rate in transactions with credit institutions) by 0.25 percentage points to 5.75% as of June 8. The Bank's other interest rates were raised on June 11.

On June 7, Moody's Investors Service affirmed its ratings on the Republic of Iceland at Aaa for long-term obligations in foreign and domestic currency and P-1 for short-term obligations in foreign and domestic currency, with a stable outlook.

On June 7, KB banki hf. announced that it had established a London-based asset management business, New Bond Street Asset Management LLP (NBS). NBS will focus on generating a portfolio of floating-rate credit investments for KB banki hf. and managing funds from third parties. Funds under management are expected to reach up to 2 billion euros in the first two years, KB banki hf. announced.

On June 14, KB banki hf. announced that it had acquired the Danish bank FIH A/S from Swedbank. FIH provides medium- and long-term financing to the full spectrum of Danish corporations. The acquisition will double the size of KB banki hf.'s balance sheet. It was conditional upon approval by financial supervisory authorities in both Denmark and Iceland. Acquisition price was 1.0 billion euros, equivalent to just over 84 b.kr.

On June 14, the Housing Financing Fund was awarded ratings from Moody's Investors Service and Standard & Poor's that are matched to the Republic of Iceland's domestic government bond issuance, reflecting the HFF's close links to the Republic of Iceland and its status as a government agency.

On June 18, Stockholm Stock Exchange announced that KB banki hf. was among 13 new companies in

its Attract 40 index. Based on highest turnover rate, the index will be reviewed at the end of 2004.

On June 18, KB banki hf. announced that it had finalised a subordinated bonds issue totalling 450 m. euros, or approximately 40 b.kr., to finance the acquisition of the Danish bank FIH. Of the total issue, 150 m. euros constitute Tier I capital and the remained Tier II capital.

On June 18, the Iceland Stock Exchange (ICEX) Board of Directors approved Deutsche Bank AG London as an ICEX member.

July 2004

On July 1, changes to the Housing Financing Fund, which had been approved by parliament on May 28, went into effect. Issuance of housing bonds and housing authority bonds was discontinued and a new bond series was issued: HFF bonds in an annuity format, payable twice a year, with maturities of 20, 30 or 40 years. The main change was that loans are now disbursed in cash, not with housing bonds. Owners of the main housing bond and housing authority bond series were invited to swap them for HFF bonds, and exchanges were made for a total of 338 b.kr.

On July 1, the interest rate on HFF mortgages was lowered by 0.3 percentage points, to 4.8%. HFF rates were reduced by a further 0.3 percentage points to 4.5% on August 1, and by 0.15 percentage points to 4.35% on September 1. The sharp reduction was the result of a decrease in market yields on HFF bonds.

On July 5, a meeting of shareholders in KB banki hf. agreed to increase its share capital through the issue of 110,137,128 shares with pre-emptive rights. At a price per share of 360 kr., the total value of the issue was 39,649,366,080 kr. The KB banki hf. shareholders' meeting also authorised the Board of Directors to increase its share capital through a subscription of 110,000,000 new shares without pre-emptive rights.

On July 5, the Central Bank of Iceland announced that it had decided to raise its policy interest rate (i.e. its repo rate in transactions with credit institutions) by 0.5 percentage points to 6.25% as of July 6. The Bank's other interest rates were raised on July 11.

On July 14, a new currency basket was announced by the Central Bank following the annual revision on the basis of Iceland's foreign trade in goods and services the preceding year. The new basket took effect on July 16.

August 2004

On August 9, 110,137,128 new shares in KB banki hf., to a nominal value of 1,101,371,280 kr., were listed on the ICEX Main List. The total number of listed shares in the bank thereby increased to 550,685,640, to a nominal value of 5,506,856,400 kr.

On August 12, Islandsbanki hf. made an offer to acquire all the outstanding share capital of Kredittbanken AS of Norway, at a price of NOK 7.25 per share. The offer price is equivalent to just over 3.5 b.kr. for all shares in the bank. The Board of Directors of Kredittbanken recommended to its shareholders to accept the offer, which is conditional upon acceptance by holders of 90% of all issued and outstanding share capital in Kredittbanken and approval by the relevant authorities in Iceland and Norway.

On August 23, KB banki hf. announced plans to offer inflation-indexed mortgage loans with a maturity of 40 years and carrying a fixed interest rate of 4.4%, subject to certain conditions. Subsequently, the other commercial banks and some savings banks and pension funds began offering loans on similar terms. Towards the end of the month the interest rate on mortgage loans was lowered to 4.2%, following an HFF bonds auction.

Tables and charts

Based on statistical information available on August 31, 2004 except for table 2 (September 10) and tables 6 and 9 (September 13).

A list of symbols is on the inside of the front cover.

A Tables

B Charts

Table 1 Main monthly indicators (continued on next page)

	Consumer prices		*Exchange rate*		*Interest rates (end of period, %)*						*Money and credit* [5]			
	% change in CPI over the previous [1]		% ch. in effective exchange rate [1,2]		Short-term rates			Long-term rates			12-month % change			
	1 month	12 months	1 month	12 months	Central Bank repo yield	3-month REIBOR[3]	3-month Treasury bills	5-y. non-indexed T-notes	10-year Treasury bonds [4]	25-year housing bonds [4]	Base money	M3	DMB lending[6]	Foreign liabilities
1998	.	1.7	.	1.6	7.5	8.2	7.6	7.5	4.3	4.7	4.6	15.2	25.6	56.8
1999	.	3.4	.	0.2	9.0	11.7	9.8	9.6	4.7	4.8	75.9	16.9	22.8	15.2
2000	.	5.0	.	-0.1	11.4	12.0	11.5	11.7	5.5	6.3	-10.4	11.2	26.2	33.0
2001	.	6.7	.	-16.7	10.1	12.5	10.0	9.1	5.1	5.9	-14.2	14.9	13.4	-0.2
2002	.	4.8	.	3.0	5.8	6.2	5.8	6.9	4.9	5.2	17.2	15.3	2.0	-0.4
2003	.	2.1	.	6.4	5.3	5.1	4.8	7.5	4.3	4.6	-33.5	23.5	16.5	-5.7
2003														
January	0.4	1.4	2.2	13.3	5.8	6.3	5.8	7.0	4.7	5.0	17.7	12.9	-1.0	9.4
February	-0.2	1.5	1.8	13.2	5.3	5.5	5.3	7.3	4.8	5.0	28.0	12.3	0.7	12.5
March	1.1	2.2	-0.2	12.6	5.3	5.4	5.0	6.9	4.8	5.0	-8.5	12.8	2.5	8.9
April	0.1	2.3	1.2	11.3	5.3	5.3	4.5	7.0	4.6	4.9	2.1	15.6	5.0	12.2
May	-0.2	2.2	1.2	8.9	5.3	5.3	4.8	6.6	4.4	4.8	-10.1	18.9	9.2	17.5
June	0.1	1.8	-1.9	6.5	5.3	5.3	5.1	6.8	4.3	4.6	-13.8	19.3	10.1	28.4
July	-0.1	1.6	-2.2	2.7	5.3	5.3	5.1	6.8	4.2	4.6	-2.5	14.8	11.5	12.0
August	-0.1	2.0	-1.9	0.3	5.3	5.2	4.9	6.5	4.0	4.4	5.6	19.6	13.1	28.2
September	0.7	2.2	-0.0	2.3	5.3	5.2	4.5	6.3	4.3	4.6	-5.4	23.0	12.4	17.3
October	0.5	2.2	0.6	3.2	5.3	5.1	4.6	6.9	4.2	4.6	-1.2	25.5	13.8	-18.9
November	0.1	2.5	0.5	3.1	5.3	5.1	4.8	7.1	4.3	4.6	-17.2	23.7	13.7	-11.7
December	0.3	2.7	0.5	1.7	5.3	5.1	4.8	7.5	4.3	4.6	-33.5	23.5	16.5	-5.7
2004														
January	0.0	2.4	3.3	2.7	5.3	5.3	5.1	7.3	4.4	4.7	-12.5	26.4	20.8	-23.2
February	-0.3	2.3	1.1	2.0	5.3	5.3	5.4	7.0	4.1	4.6	-30.0	22.5	21.4	-31.3
March	0.6	1.8	-1.7	0.5	5.3	5.4	5.0	6.8	3.9	4.4	-28.7	24.5	23.9	-29.9
April	0.6	2.2	-1.5	-2.2	5.3	5.4	5.3	6.8	3.7	4.1	-7.7	21.1	23.5	-13.2
May	0.8	3.2	-0.3	-3.7	5.5	5.8	5.6	7.6	4.0	4.3	-32.4	18.4	19.8	-23.7
June	0.8	3.9	0.7	-1.1	5.8	6.1	6.0	7.6	3.9	4.2	-11.7	19.0	20.1	-21.5
July	-0.5	3.6	0.3	1.4	6.3	6.5	6.0	7.7	3.9	4.7	23.8	24.7	20.5	-37.6
August	-	3.7	0.5	3.9	6.3	6.6	6.5	7.7	3.7	4.7	...	...	...	...

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

Table 1 (continued) Main monthly indicators

	Foreign exchange market and reserves				*Foreign trade and external conditions*					*Labour market*		*Treasury fin.*	*Asset prices*	
	Gross foreign currency reserves:			CB net purchases (b.kr.)	Trade balance (b.kr.)	Merchandise exports (b.kr.)	Merchandise imports (b.kr.)	Marine product prices, 12-mo. % ch.[9]	Real exchange rate of króna[10]	Unemployment	Wages, 12-mo. % change	Fin. balance, % of rev., cum. from beg. of year[11]	12-mo. % changes	
	in b.kr.	as ratio of: Merch. imports[7]	as ratio of: For. short-term liabil.[8]										Equity prices[12]	Housing prices[13]
1998	29.6	2.2	0.8	17.0	-25.5	136.6	162.1	11.8	91.9	2.8	9.4	4.6	9.8	7.8
1999	35.8	2.6	0.9	12.0	-22.9	144.9	167.8	-4.8	93.6	1.9	6.8	8.7	47.4	22.2
2000	34.2	2.1	0.6	-13.9	-38.0	149.3	187.3	-3.0	96.2	1.3	6.6	5.9	-19.3	13.3
2001	36.8	2.1	0.4	-29.5	-6.7	196.4	203.1	1.6	83.6	1.4	8.8	-0.2	-11.2	3.1
2002	37.4	2.5	0.2	4.5	13.1	204.3	191.2	3.3	88.4	2.5	7.2	-5.6	16.7	7.5
2003	58.3	3.6	0.3	43.2	-16.9	182.6	199.5	0.4	93.8	3.4	5.6	-3.4	56.4	9.1
2003														
January	37.1	2.6	0.3	5.5	4.9	16.4	11.4	2.9	93.4	3.8	5.5	-1.5	8.4	9.0
February	36.6	2.5	0.2	2.2	2.0	16.1	14.1	3.0	95.0	4.1	5.6	4.3	8.1	8.9
March	36.3	2.5	0.2	2.5	-0.5	16.7	17.3	1.8	94.9	4.0	5.7	9.3	8.3	10.8
April	38.7	2.7	0.2	2.1	-2.4	14.1	16.5	4.2	95.9	3.9	5.6	8.3	7.5	11.6
May	37.1	2.6	0.2	2.8	-1.7	15.1	16.8	0.5	97.1	3.6	5.6	2.2	14.1	11.4
June	37.1	2.4	0.2	3.5	-3.2	14.3	17.5	-1.6	95.2	3.2	5.6	2.2	14.6	14.8
July	37.1	2.4	0.2	4.4	-5.0	15.0	20.0	-4.7	93.2	3.0	5.7	-2.3	19.4	13.9
August	41.3	2.5	0.2	4.0	-0.9	14.9	15.8	-1.2	91.5	2.9	5.7	-3.7	38.0	14.9
September	46.6	2.9	0.2	4.4	-4.7	14.6	19.2	-	91.6	2.7	5.6	-4.6	39.5	12.6
October	52.0	3.1	0.3	4.4	-2.8	15.8	18.6	0.3	92.5	2.8	5.5	-3.4	48.7	12.4
November	58.0	3.5	0.3	3.8	-0.3	16.0	16.2	1.1	93.1	3.0	5.5	-4.7	52.7	12.7
December	58.3	3.6	0.3	3.7	-2.5	13.7	16.2	-1.4	93.6	3.1	5.4	-3.4	56.4	9.1
2004														
January	56.6	3.4	0.3	7.0	0.2	16.6	16.4	-2.9	96.3	3.7	3.3	-1.2	76.8	8.3
February	57.4	3.5	0.3	1.4	0.0	14.1	14.1	-2.3	97.2	3.6	3.3	8.1	89.3	9.2
March	66.9	3.8	0.3	1.8	-0.2	20.1	20.3	-2.7	96.1	3.5	3.8	-0.5	79.8	9.7
April	65.8	3.7	0.3	1.5	-3.3	16.8	20.0	-5.2	95.6	3.5	4.0	1.0	91.1	13.4
May	66.0	3.8	0.3	1.5	-3.7	14.9	18.6	-3.0	95.5	3.3	4.6	-2.2	82.7	11.4
June	68.7	3.8	0.3	1.8	-6.8	16.3	23.2	-1.7	96.3	3.1	5.1	-2.5	96.9	9.9
July	68.3	3.8	0.3	1.4	-6.4	16.6	23.0	-0.2	96.8	3.0	5.1	...	105.6	12.6
August	...	...	...	1.6	...	...	...	...	96.9	...	...	...	92.6	...

7. Gross foreign exchange reserves at end of period as a ratio of the average monthly value of merchandise imports. Calculated at fixed exchange rates. 8. The denominator is foreign short-term liabilities of credit institutions (deposit money banks and investment banks). 9. Prices in SDR. Annual figures are % changes between annual averages. 10. Real effective exchange rate of the Icelandic króna based on relative consumer prices (a trade-weighted average of trading partners' consumer prices is used). 1980 = 100. 11. Cash basis. 12. The ICEX-15 index from January 1 1998. Earlier the ICEX stock price index. Annual figures are % changes over year. 13. Residential housing in the Greater Reykjavík Area. Annual figures are % changes over year.

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

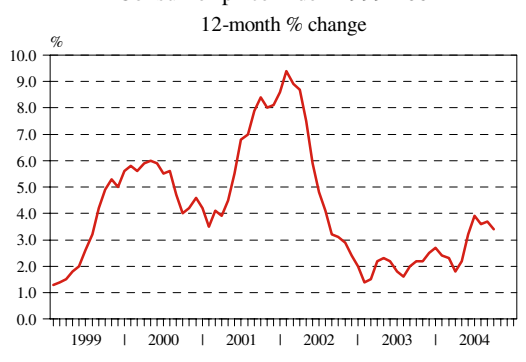
Table 2 Prices

	2004								
	Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*August*	*Sept.*
Consumer price index, May 1988 = 100	230.1	229.4	230.7	232.0	233.9	235.7	234.6	234.6	235.6
1-month % changes:									
Consumer price index	0.0	-0.3	0.6	0.6	0.8	0.8	-0.5	-	0.4
Domestic goods excl. agric. products and vegetables	0.5	-0.3	-0.5	0.1	0.8	0.6	0.1	-0.4	0.6
Agricultural products and vegetables	1.0	-0.5	-0.2	-0.7	1.4	0.5	0.9	1.3	-0.1
Imported goods excl. alcohol and tobacco	-1.6	-0.6	1.2	1.2	0.6	1.1	-1.8	-0.8	0.9
Petrol	1.8	-0.5	-2.0	4.1	3.3	6.2	-2.3	3.3	-0.4
Housing	0.1	0.2	0.6	1.0	1.7	1.6	-0.4	0.6	0.7
Public services	5.9	-2.3	-	-	0.7	0.1	0.6	0.4	-0.6
Other services	-0.1	0.4	0.7	0.2	0.5	-	0.4	0.1	-0.1
Harmonised index of consumer prices (HICP) [1]	-0.2	-0.3	0.7	0.5	0.8	0.5	-0.3	...	...
12-month % changes:									
Consumer price index	2.4	2.3	1.8	2.2	3.2	3.9	3.6	3.7	3.4
Domestic goods excl. agric. products and vegetables	1.5	0.7	0.1	-0.2	1.6	1.7	1.8	1.7	1.6
Agricultural products and vegetables	-0.1	-0.6	-0.3	-0.4	0.8	1.4	3.6	4.5	4.2
Imported goods excl. alcohol and tobacco	0.3	1.0	-0.5	0.3	1.6	3.1	2.4	2.3	1.7
Petrol	1.6	1.5	-5.3	-1.0	8.4	18.5	12.7	16.4	13.0
Housing	7.9	7.1	6.7	7.0	8.0	9.4	7.7	6.9	7.1
Public services	9.1	6.3	5.9	5.9	6.6	6.7	6.5	6.9	5.0
Other services	0.7	1.0	1.7	2.4	2.7	2.3	2.4	2.9	2.9
Harmonised index of consumer prices (HICP)[1]	1.4	1.4	1.0	1.5	2.4	2.9	2.8	...	...
Building cost index for residential buildings	1.3	1.4	2.6	2.7	5.0	5.0	5.2	5.7	...
Housing prices[2]	8.3	9.2	9.7	13.4	11.4	9.9	12.6	...	...
Foreign CPI and commodity prices, 12-mo. % changes									
Consumer price index in USA	1.9	1.7	1.7	2.3	3.1	3.3	3.0	...	...
Consumer price index in euro area[3]	1.9	1.6	1.7	2.0	2.5	2.4	2.3	2.3	...
Commodity prices excl. oil	-9.0	19.2	23.6	57.1	53.4	53.2	53.9	...	...
Petrol prices[4]	-0.1	-6.0	11.5	33.7	46.4	27.7	34.1	42.8	...

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

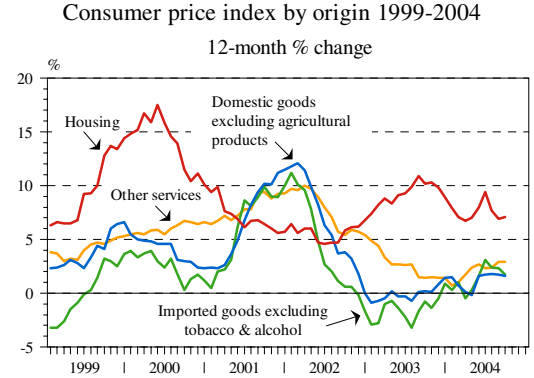
Sources: Statistics Iceland, The Land Registry of Iceland, EcoWin.

Chart 1



Source: Statistics Iceland.

Chart 2



Source: Statistics Iceland.

Table 3 Exchange rate of the Icelandic króna

Monthly averages	2003 Dec.	2004 Jan.	Feb.	March	April	May	June	July	August	3-month % ch. to August 31
Effective exchange rate indices: [1]										
Official index (31/12 '91 = 100)	124.6	120.6	119.3	121.3	123.2	123.6	122.7	122.3	121.7	0.0
Import-weighted index (31/12 '94)	105.6	102.1	100.9	102.7	104.3	104.7	103.9	103.5	103.0	0.0
Export-weighted index (31/12 '94)	106.5	103.2	102.2	103.8	105.3	105.7	105.0	98.3	90.0	15.7
Central Bank quotations: [2]										
U.S. dollar	73.1	69.4	68.5	71.1	73.1	73.4	72.1	71.5	71.5	-1.1
Euro	89.7	87.6	86.7	87.2	87.6	88.1	87.6	87.7	87.1	0.0
Japanese yen	0.677	0.653	0.643	0.655	0.679	0.655	0.659	0.654	0.647	-2.1
Pound sterling	127.7	126.6	128.0	129.9	131.6	131.0	131.8	131.7	130.1	1.3
Danish krone	12.05	11.76	11.63	11.70	11.77	11.84	11.78	11.80	11.72	0.0
Norwegian krone	10.90	10.18	9.88	10.20	10.56	10.73	10.57	10.36	10.46	2.4
Swedish krona	9.95	9.58	9.44	9.44	9.55	9.64	9.58	9.54	9.48	0.1

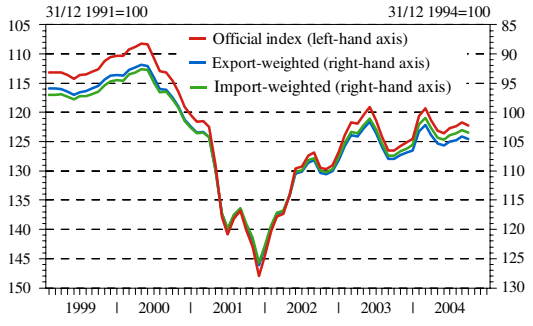
	Between annual averages				*From beginning of year*			*Previous 12 months*		
% changes [3]	*2000*	*2001*	*2002*	*2003*	*Aug. '02*	*Aug. '03*	*Aug. '04*	*Aug. '02*	*Aug. '03*	*Aug. '04*
Official index (31/12 '91 = 100)	-0.1	-16.7	3.0	6.4	8.8	-0.7	0.8	6.1	3.7	2.7
Import-weighted index (31/12 '94 = 100)	0.2	-16.4	3.1	6.6	8.9	-0.7	0.8	6.1	3.7	3.0
Export-weighted index (31/12 '94 = 100)	-0.2	-17.0	3.0	6.2	8.7	-0.6	16.6	6.1	3.6	18.4
Central Bank quotations: [2]										
U.S. dollar	-8.2	-19.3	6.9	19.2	17.5	0.5	-1.7	12.1	9.3	11.0
Euro (Deutschemark before 1999)	6.3	-17.0	1.5	-0.6	5.5	-3.3	2.4	4.2	-1.1	-0.1
Japanese yen	-12.6	-9.1	10.2	10.1	5.6	-1.3	1.0	11.5	7.9	4.6
Pound sterling	-1.7	-15.3	2.6	9.4	9.7	2.5	-2.3	5.4	7.4	-2.1
Danish krone	6.5	-17.0	1.2	-0.6	5.4	-3.2	2.3	3.9	-1.1	0.1
Norwegian krone	3.7	-17.7	-5.2	5.9	-2.1	9.5	2.6	-4.3	10.5	1.8
Swedish krona	2.0	-9.0	0.4	-1.0	4.3	-2.8	3.0	0.2	-0.7	-1.1

1. Based on a trade-weighted (goods and services) basket of trading partners' currencies. 2. Exchange rate of respective currency against the Icelandic króna.
3. Positive sign indicates an appreciation of the Icelandic króna.

Source: Central Bank of Iceland.

Chart 3

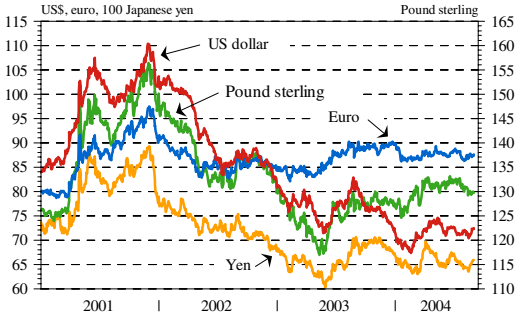
Effective exchange rate indices
January 1999 - August 2004



Source: Central Bank of Iceland.

Chart 4

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



Source: Central Bank of Iceland.

Table 4 Interest rates

All figures are in %	Annual averages [1] 2001	2002	2003	At end of month 2004 Feb.	March	April	May	June	July	August
Central Bank rates										
Credit institutions' current accounts	6.8	5.5	2.9	2.8	2.8	2.8	3.0	3.3	3.8	3.8
Required deposits	9.4	7.1	4.2	4.1	4.1	4.1	4.3	4.5	5.0	5.0
Overnight loans (discount rates)	12.3	10.7	7.8	7.7	7.7	7.7	7.9	8.0	8.3	8.3
Repurchase agreements	10.9	8.4	5.4	5.3	5.3	5.3	5.5	5.8	6.3	6.3
Yields in the money market [2]										
REIBOR, O/N	12.3	9.3	5.1	5.7	5.2	4.8	5.3	5.7	4.0	6.3
REIBOR, 1-month	12.1	9.0	5.3	5.3	5.3	5.3	5.4	5.8	6.1	6.4
REIBOR, 3-month	12.0	8.9	5.3	5.3	5.4	5.4	5.6	6.1	6.5	6.6
REIBOR, 6-month	11.8	8.8	5.5	5.3	5.4	5.5	5.8	6.5	6.8	6.8
Treasury bills, 3-month	11.0	8.1	5.0	5.4	5.0	5.3	5.5	6.0	6.0	6.5
Treasury bills, 6-month [3]	10.9	7.9	5.0	5.3	5.1	5.3	5.6	...	...	...
Yields in the capital market [4]										
Treasury notes, up to 5 years	10.6	8.1	6.8	7.0	6.8	6.8	7.6	7.6	7.7	7.7
Treasury bonds, 10 years	5.3	5.2	4.4	4.1	3.9	3.7	4.0	3.9	3.9	3.7
Housing bonds, 25 years [5]	5.9	5.7	4.7	4.6	4.4	4.1	4.3	4.2	4.7	4.7
Housing Financing Fund bonds, 20 yrs. [5]	.	.	.	.	.	.	.	.	4.0	3.8
Housing Financing Fund bonds, 30 yrs. [5]	.	.	.	.	.	.	.	.	3.9	3.7
Housing Financing Fund bonds, 40 yrs. [5]	.	.	.	.	.	.	.	.	3.8	3.7
Commercial banks' lending rates [6]										
Average rates on non-indexed securities	18.0	15.4	12.0	11.5	11.5	11.3	11.3	11.6	12.0	12.1
Average rates on indexed securities	10.2	10.1	9.1	8.2	8.2	8.0	8.0	8.0	8.0	8.0
Rates acc. to Interest Rate Act 38/2001 [7]										
Penalty rates	23.7	21.3	17.3	17.0	17.0	17.0	17.0	17.0	17.5	17.5

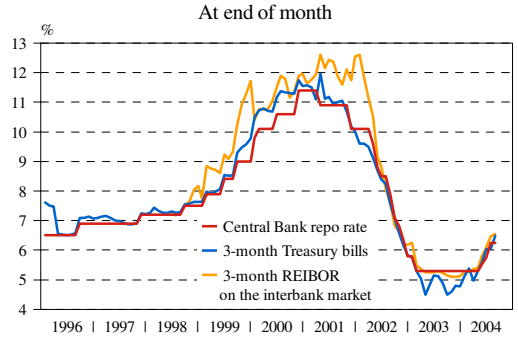
1. Arithmetic averages of end-of-month figures. Central Bank rates are time-weighted averages. 2. REIBOR are interest rates on the interbank market in Icelandic króna. For Treasury and bank bills, yields in trading on ICEX (Iceland Stock Exchange). 3. Treasury bills with the closest maturity to 6 months.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

Source: Central Bank of Iceland.

Chart 5

Short-term interest rates 1996-2004

At end of month

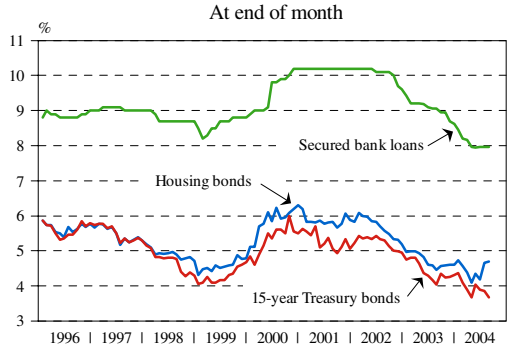


Source: Central Bank of Iceland.

Chart 6

Long-term interest rates 1996-2004

At end of month



Source: Central Bank of Iceland.

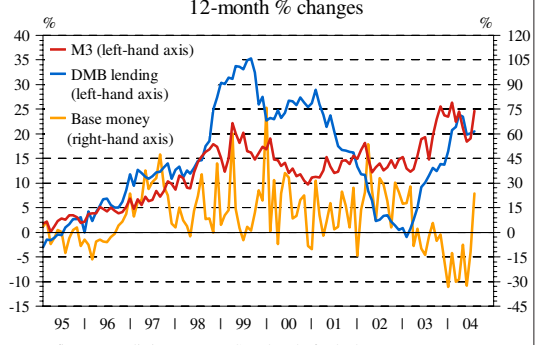
Table 5 Money and credit

Selected items from the balance sheets of the Central Bank, deposit money banks and the banking system	*In b.kr.*	*% change over year*			*1-mo. change in b.kr.*			*12-mo. % change*		
	July 2004	*2001*	*2002*	*2003*	*May'04*	*June'04*	*July'04*	*July'02*	*July'03*	*July'04*
Net foreign exchange reserves	67.8	.	.	.	0.2	2.7	-0.6	.	.	.
Claims on Treasury and gov. inst., net	-16.6	.	.	.	0.5	3.0	9.3	.	.	.
Claims on deposit money banks	27.4	38.7	27.9	-65.2	-14.6	1.4	3.8	105.0	-19.4	-59.0
Base money	46.8	-14.2	17.2	-33.5	-11.9	8.3	16.5	29.0	-2.5	23.8
Notes and coins in circulation	8.7	3.6	3.4	9.5	0.3	-0.1	0.6	2.5	8.9	13.6
Reserves of deposit money banks	38.1	-19.2	22.3	-46.7	-12.3	8.3	15.9	36.8	-5.0	26.4
Deposit money banks[1]										
Central Bank items	10.7	.	.	.	2.9	6.6	12.1	.	.	.
Short-term position, net	-5.4	.	.	.	10.9	0.8	3.5	.	.	.
Credit and listed securities[2]	1,400.6	22.5	3.1	29.6	19.0	55.6	10.9	7.0	15.7	33.0
Credit[3]	1,076.4	19.7	2.6	24.4	13.5	42.4	7.1	4.1	13.5	30.5
Treasury and government institutions	14.7	8.1	1.6	-15.2	0.1	0.4	-1.2	23.4	-28.2	2.7
Non-bank financial institutions	19.8	-45.2	.	.	-0.8	0.5	-0.4	-91.6	.	.
Industries	688.6	15.5	2.1	26.6	2.4	19.4	12.8	2.5	19.6	31.5
Households	187.6	9.9	8.1	15.4	2.6	0.7	-0.8	15.1	1.6	13.7
Foreign sector	155.3	.	63.1	118.2	10.1	21.1	-3.0	47.0	48.1	128.6
Listed securities	174.1	23.9	-3.4	39.8	5.4	13.7	-8.5	7.1	15.2	24.1
Domestic credit and listed securities	1,216.4	17.4	0.9	24.1	10.6	32.7	14.7	6.2	14.1	23.9
Domestic credit	921.0	13.4	2.0	16.5	3.3	21.3	10.1	3.3	11.5	20.5
Deposits	522.2	15.1	15.5	23.8	5.7	12.2	7.3	12.8	14.9	24.9
Bonds	724.3	48.6	1.7	111.3	54.6	-25.9	22.0	19.7	56.2	115.5
Foreign liabilities for on-lending	188.6	-0.2	-0.4	-5.7	-22.2	24.4	-31.7	-11.1	12.0	-37.6
Banking system[1]										
Foreign assets, net	216.7	-33.2	-8.3	-199.5	38.6	1.7	2.3	-25.2	-34.6	-315.4
Domestic credit and marketable securities	1,209.7	17.5	-1.0	23.8	11.6	37.4	26.8	0.8	15.7	25.9
Money supply, M1[4]	131.9	-2.3	23.8	32.0	5.5	-1.2	13.4	9.6	19.7	36.4
M2 (M1 + demand savings deposits)	241.4	11.0	9.3	29.7	9.0	9.0	17.3	5.6	16.3	34.7
M3 (M2 + time savings deposits)	530.9	14.9	15.3	23.5	6.0	12.1	7.9	12.6	14.8	24.7
M4 (M3 + securities issues)	1,255.2	27.1	9.5	58.1	60.6	-13.7	29.9	15.1	30.0	64.8

1. Since March 1998, all percentage changes have been calculated using figures including FBA. This applies to the following items: credit (and subcategories of credit), listed securities, bonds, foreign liabilities and M4. 2. Treasury bills, equities and leasing contracts also included. 3. Lending series have been adjusted retroactively following reclassification under the ÍSAT standard. Data on lending to foreign entities available since January 2001. 4. Sum of notes and coins in circulation and DMBs' demand deposits. *Source:* Central Bank of Iceland.

Chart 7

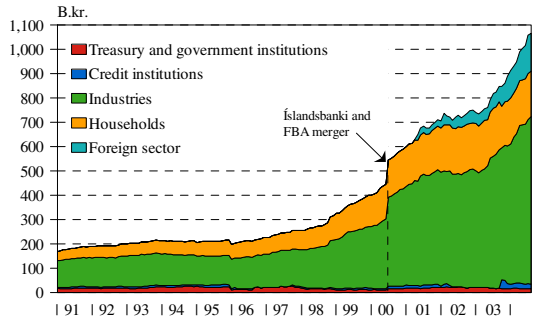
M3, DMB lending and base money 1995-2004



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

Chart 8

Deposit money bank lending by sector 1991-2004[1]



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

Table 6 The credit system[1]

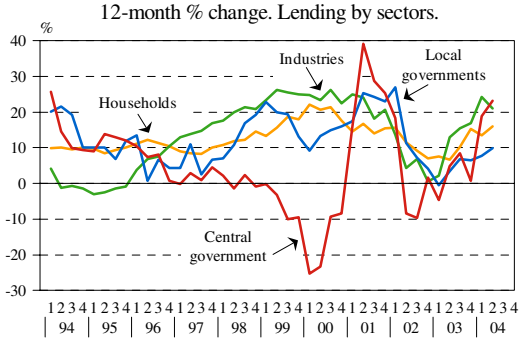
	In b.kr.	% change over year						3-mo. % change		
	June 2004	1998	1999	2000	2001	2002	2003	Dec. '03	March '04	June '04
Assets										
Domestic lending and securities	2,439.4	15.1	17.3	17.3	19.2	3.2	11.0	1.9	6.1	4.5
Banking system[2]	1,183.2	27.2	23.7	44.4	13.8	8.0	24.1	3.6	6.3	6.1
Miscellaneous credit undertakings	620.9	13.2	17.4	-3.8	20.8	-2.0	8.0	2.7	6.0	6.3
Housing Financing Fund	482.9	7.2	13.9	12.0	18.1	11.5	14.1	3.3	4.0	4.2
Credit undertakings subject to minimum reserve requirements[3]	94.3	.	.	-34.9	30.3	-41.4	-19.0	1.6	25.4	21.0
Other credit undertakings[4]	43.7	-78.0	9.2	17.2	16.1	9.0	0.8	-1.5	-0.9	2.3
Pension funds	681.2	8.9	17.9	4.6	16.4	12.2	12.5	3.5	4.3	4.7
Insurance companies	68.4	9.6	10.1	24.1	12.2	6.3	14.8	12.1	5.8	0.6
Mutual and investment funds[5]	221.1	123.5	24.1	-14.0	22.3	39.2	47.0	4.8	11.8	7.1
Foreign credit	1,348.2	19.3	24.0	39.6	30.0	-4.3	30.5	9.2	7.3	9.6
State lending funds	340.5	-3.7	2.2	0.0	31.9	-3.0	-1.8	-1.8	3.6	-1.2
Total of above	4,463.6	15.5	18.3	18.4	21.7	3.1	19.4	4.7	6.3	6.3
Less inter-institutional transactions	-2,024.2	16.0	19.9	20.4	25.8	3.0	32.0	8.5	6.5	8.6
Assets = liabilities	2,439.4	15.1	17.3	17.3	19.2	3.2	11.0	1.9	6.1	4.5
Liabilities										
Domestic liabilities	1,760.4	16.1	21.0	7.2	14.2	6.6	16.4	5.2	6.5	3.5
Notes and deposits	451.1	15.7	16.6	11.1	14.9	13.4	23.1	4.0	3.6	0.9
Securities	244.8	30.2	23.0	9.9	6.6	0.1	34.6	3.7	4.4	8.0
Insurance companies' indemnity fund	54.8	5.8	9.1	11.5	15.6	4.4	4.7	-2.9	12.4	-1.4
Pension funds	874.9	15.2	27.4	9.9	13.7	4.9	18.4	6.0	5.9	5.0
Capital of financial institutions	250.1	5.7	-1.9	14.3	26.0	19.4	19.7	11.3	4.8	7.7
Other items, net	-115.2	.	.	.	.	.	.	.	.	.
Foreign liabilities, net	679.0	12.6	6.6	50.3	30.6	-3.7	-0.9	-6.0	5.1	7.1
Credit by sector:[6]										
Central government	175.4	-0.9	-9.5	-8.4	25.4	1.7	0.7	-4.4	11.4	3.0
Municipalities[7]	118.2	19.3	13.1	15.9	23.0	4.1	6.5	1.6	1.0	3.4
Industries[7]	1,332.7	20.8	24.9	22.5	20.7	0.6	16.9	0.2	9.2	5.3
Households[7]	813.2	14.6	18.0	17.6	15.5	7.0	15.3	6.0	1.2	3.6

1. Partly preliminary or estimated. 2. In May 2003, Glitnir leasing company merged into Íslandsbanki and was thereby reclassified to "Banking system". 3. Credit undertakings subject to minimum reserve requirements comprise: Frjálsi fjárfestingarbankinn hf., Framtak fjárfestingarbanki hf., Lýsing, SP-fjármögnun, Europay, Greiðslumiðlun hf., MP fjárfestingarbanki (since November 2003) and Straumur fjárfestingarbanki (since January 2004). 4. Other credit undertakings comprise: The Agricultural Loan Fund, the Agricultural Productivity Fund, the Municipal Loan Fund and the Regional Development Fund. 5. Since December 2003 investment funds are included. 6. Partly estimated. 7. Since September 2003, lending by sector has been reclassified according to the ÍSAT 95 standard. This produces a lower figure than otherwise for lending to households, and a higher figure for lending to municipalities and industries. *Source:* Central Bank of Iceland.

Chart 9

Growth of credit system lending 1994-2004

12-month % change. Lending by sectors.

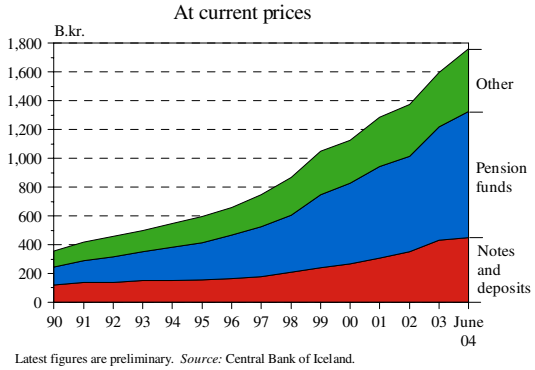


Reclassification of lending in September 2003 based on the ÍSAT-95 standard led to a reduction in household debt figures and an increase in business and municipalities' debt figures. Latest figures are preliminary. *Source:* Central Bank of Iceland.

Chart 10

Credit system liabilities 1990-2004

At current prices



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

Table 7 Financial markets

At end of period	Outstanding in b.kr. 2002	2003	June'04	1-month % change Apr.'04	May'04	June'04	12-month % change Apr.'04	May'04	June'04
Money market[1]	29.2	36.3	38.2	-11.3	15.1	-11.9	-7.6	1.7	4.8
Securities market[2]	759.8	1,175.1	1,379.3	1.4	0.4	4.1	77.6	73.1	58.6
thereof Treasury bonds	55.8	53.1	49.6	-1.7	-1.4	1.1	-0.1	-3.6	-3.2
thereof housing bonds	259.2	307.7	343.7	1.2	1.2	5.5	17.5	18.0	23.2
Market capitalisation of listed equities	529.3	658.8	854.7	3.2	-1.8	8.0	49.4	44.4	55.4
Mutual funds' units (open-end)	133.1	198.1	242.6	4.3	1.3	2.5	54.6	51.0	45.2

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

Table 8 Labour market

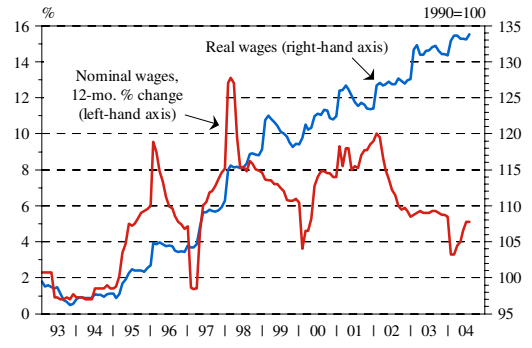
Changes in indices are in percent. Other changes indicate increase/decrease in jobs or permits	Averages 2002	2003	July'04	1-month change May'04	June'04	July'04	12-month change July'02	July'03	July'04
Wage index (1990=100)	195.0	205.9	216.5	0.8	0.6	0.1	6.6	5.7	5.1
Real wages (1990=100) [1]	127.5	131.8	133.8	0.0	-0.1	0.6	2.4	4.0	1.4
Number of new work permits	3,637	3,299	311	79	40	-20	-45	93	-74
Job vacancies, total	221	459	801	107	4	65	-307	322	197
thereof Greater Reykjavík Area	66	104	264	-26	55	61	-259	20	174
Period averages	*2001*	*2002*	*2003*	*May'04*	*June'04*	*July'04*	*July'02*	*July'03*	*July'04*
Number of unemployed	2,009	3,631	4,893	4,900	4,877	4,712	3,530	4,669	4,712
Measured unemployment rate (% of labour force)	1.4	2.5	3.4	3.3	3.1	3.0	2.3	3.0	3.0
Seasonally adjusted unemployment rate	.	.	.	3.1	3.2	3.3	2.6	3.4	3.3

Quarterly measurements	Averages 2002	2003	Q2'04	3-month % change Q4'03	Q1'04	Q2'04	12-month % change Q2'02	Q2'03	Q2'04
Wage index (1990 = 100)	195.0	205.8	214.8	0.5	2.0	1.5	7.5	5.6	4.6
Wages in the private sector	178.6	188.5	196.0	0.5	1.1	2.2	5.7	5.5	4.2
Wages in the public sector and banks	221.9	234.5	245.5	0.5	3.5	0.4	10.2	5.9	4.9

1. Deflated by consumer prices. *Sources:* Statistics Iceland, Directorate of Labour, Central Bank of Iceland.

Chart 11

Nominal and real wages 1993-2004

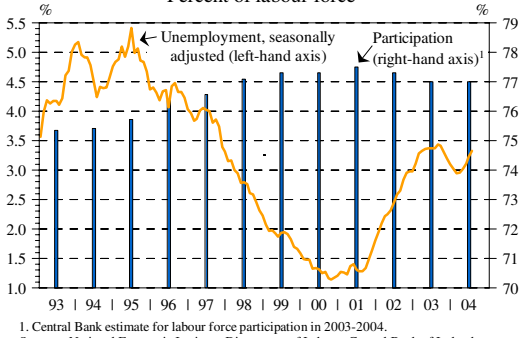


Source: Central Bank of Iceland.

Chart 12

Unemployment and labour participation 1993-2004

Percent of labour force



1. Central Bank estimate for labour force participation in 2003-2004.
Sources: National Economic Institute, Directorate of Labour, Central Bank of Iceland.

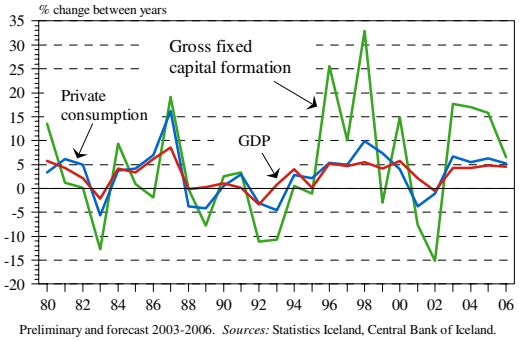
Table 9 National accounts – annual data

In b.kr.	1998	1999	2000	2001	2002	Estimate 2003	Forecast[1] 2004	2005	2006
Gross domestic product (GDP), current prices	569.3	609.6	662.6	744.2	779.3	810.8	866.3	945.0	1,024.3
Current account balance, current prices	-39.5	-42.6	-67.1	-30.1	8.9	-32.8	-76.1	-107.9	-122.8
GDP at 1990 fixed prices	428.2	446.0	471.5	481.8	479.3	500.2	522.1	546.8	571.5
GNP at 1990 fixed prices	418.5	436.6	457.6	465.5	474.3	495.3	511.0	532.8	554.1
Volume changes between years, percent									
Private consumption	9.9	7.3	4.0	-3.8	-1.1	6.7	5½	6¼	5¼
Public consumption	3.4	4.9	4.3	3.2	4.1	3.3	½	2	2
Gross fixed capital formation	32.9	-3.0	14.8	-7.6	-15.1	17.7	17	15¾	6½
Industries	45.8	-5.1	14.9	-15.2	-22.7	26.1	30¼	24¾	7¼
Housing	1.3	0.3	15.2	17.8	5.2	13.3	12	4	3
Public works and buildings	23.4	2.7	14.0	-1.7	-12.2	-0.4	-17	-8½	9
National expenditure	13.4	4.2	6.8	-4.2	-2.9	8.0	7	7¾	5
Exports of goods and services	2.1	4.0	5.0	7.7	3.6	0.3	5	4	6
Exports of goods	-2.6	7.1	-1.3	7.2	6.6	-1.2	5	3¼	7¾
Exports of services	13.8	-2.5	19.3	8.6	-1.9	3.3	4½	5½	2½
Imports of goods and services	23.5	4.2	8.0	-9.0	-2.5	9.6	11¾	11½	7
Imports of goods	24.3	3.2	2.8	-10.0	-3.4	7.3	13	14½	7½
Imports of services	21.2	6.9	21.5	-6.9	-0.8	14.5	9½	4½	5
Gross domestic product (GDP)	5.5	4.2	5.7	2.2	-0.5	4.3	4¼	4¾	4½
Gross national product (GNP)	5.6	4.2	4.7	2.3	0.4	4.5	4¼	4¼	4
Gross national income (GNI)	7.8	4.0	3.7	1.9	2.1	2.7	3½	4¾	4¼
Terms of trade (goods and services)	5.6	-0.8	-2.7	0.3	0.5	-4.2	-3	1¼	¼
Percent of GDP									
Private consumption	57.3	58.9	58.8	54.9	53.8	55.5	56¼	56¾	56½
Gross fixed capital formation	24.6	22.6	24.1	22.2	18.7	21.3	24½	26¾	27½
Current account balance	-6.9	-7.0	-10.1	-4.0	1.1	-4.1	-8¾	-11½	-12
Gross national saving	17.8	15.6	14.3	17.9	19.8	17.0	15½	15½	15½

1. Central Bank of Iceland forecast in June 2004.
Sources: Statistics Iceland, Central Bank of Iceland

Chart 13

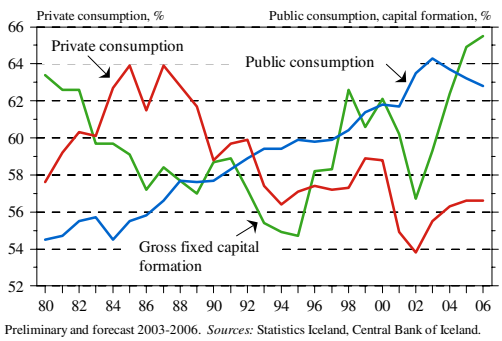
Growth of GDP, private consumption and gross fixed capital formation 1980-2006



Preliminary and forecast 2003-2006. *Sources:* Statistics Iceland, Central Bank of Iceland.

Chart 14

Private consumption, public consumption and gross fixed capital formation as % of GDP 1980-2006



Preliminary and forecast 2003-2006. *Sources:* Statistics Iceland, Central Bank of Iceland.

Table 9 (continued) National accounts – quarterly data

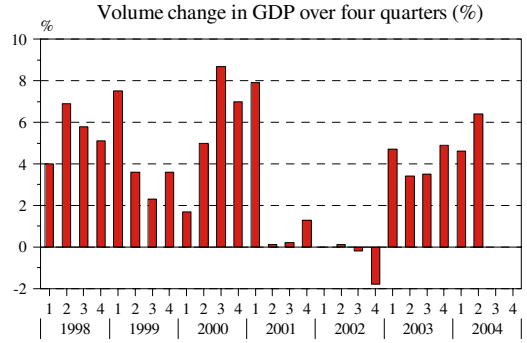
In b.kr.	Private consumption	Public consumption	Gross fixed cap. format.	Changes in stocks	National expenditure	Exports	Imports	GDP
2001: Q2	103,401	43,990	38,085	53	185,529	71,684	-74,897	182,316
2001: Q3	101,103	44,372	44,955	622	191,051	84,146	-84,131	191,066
2001: Q4	107,597	47,148	39,884	-20	194,610	82,602	-73,478	203,734
2002: Q1	99,009	47,809	35,501	-339	181,980	76,495	-71,239	187,236
2002: Q2	106,479	49,355	36,124	-896	191,061	79,239	-75,333	194,967
2002: Q3	103,758	49,408	37,145	825	191,136	80,789	-75,342	196,583
2002: Q4	109,902	52,297	36,797	229	199,224	72,279	-70,995	200,508
2003: Q1	105,489	51,505	33,026	-858	189,162	71,143	-67,337	192,968
2003: Q2	114,190	53,357	42,536	-369	209,715	67,615	-78,305	199,025
2003: Q3	111,147	52,906	48,001	27	212,082	80,177	-87,375	204,884
2003: Q4	119,171	55,859	48,867	-3,396	220,501	68,876	-78,503	210,874
2004: Q1	114,920	54,342	38,968	3,274	211,503	72,574	-77,433	206,644
2004: Q2	125,004	56,605	53,408	-1,677	233,340	76,465	-94,520	215,285
Volume change from same quarter in prev. year (%)								
2001: Q2	-4.3	5.0	-23.2	-0.3	-7.7	2.7	-16.4	0.1
2001: Q3	-5.2	-1.5	-5.2	0.8	-3.7	1.2	-8.1	0.2
2001: Q4	-6.9	2.5	-21.1	-2.2	-10.4	13.7	-19.8	1.3
2002: Q1	-5.5	3.1	-23.5	1.7	-6.9	3.1	-14.0	0.0
2002: Q2	-1.5	2.9	-10.6	-0.7	-3.2	11.8	2.4	0.1
2002: Q3	0.8	4.9	-17.5	0.3	-2.5	2.4	-3.2	-0.2
2002: Q4	1.9	5.8	-6.6	0.2	1.2	-2.1	6.7	-1.8
2003: Q1	6.5	3.2	-7.6	0.0	2.9	5.1	0.4	4.7
2003: Q2	7.3	3.9	20.5	0.6	9.8	-5.1	10.5	3.4
2003: Q3	6.3	3.0	26.3	-0.7	9.0	2.5	16.0	3.5
2003: Q4	6.5	3.1	31.0	-1.0	9.3	-1.2	10.8	4.9
2004: Q1	7.9	1.9	17.1	0.2	8.5	3.8	14.3	4.6
2004: Q2	6.5	2.2	21.0	-0.1	8.7	7.4	12.9	6.4

Source: Statistics Iceland, Central Bank of Iceland

Chart 15

Quarterly economic growth 1998-2004

Volume change in GDP over four quarters (%)

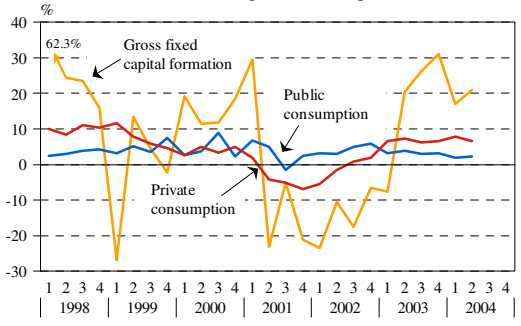


Preliminary 2003. Estimate 2004. *Source*: Statistics Iceland.

Chart 16

Components of economic growth 1998-2004

Volume change over four quarters (%)



Preliminary 2003. Estimate 2004. *Source*: Statistics Iceland.

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

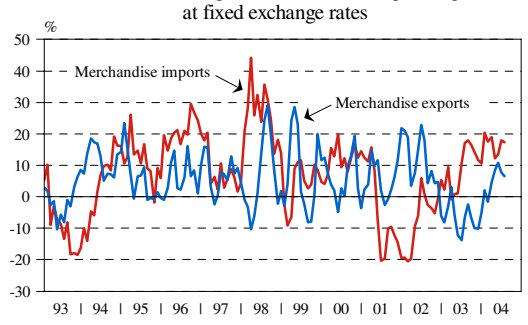
	In b.kr.					% change from previous year[2]		
Trade in goods and services	*2000*	*2001*	*2002*	*2003*	*Jan.-July'04*	*3-mo.*	*6-mo.*	*12-mo.*
Trade balance	-38.0	-6.7	13.1	-16.9	-20.2	.	.	.
Merchandise exports fob.	149.3	196.4	204.3	182.6	115.6	5.8	6.6	0.8
Excluding ships and aircraft	146.1	193.1	202.0	181.2	115.2	6.0	6.9	1.9
Marine products	94.5	121.8	128.6	113.7	70.6	-1.2	4.6	0.2
Aluminium and ferro-silicon	31.6	44.4	43.5	40.3	24.8	16.5	6.2	0.2
Other industrial products	15.1	19.0	14.5	21.6	15.8	14.9	13.4	8.4
Merchandise imports fob.	187.3	203.1	191.2	199.5	135.7	18.1	16.0	16.8
Excluding ships and aircraft	177.5	190.1	180.0	195.7	131.2	11.8	15.1	17.6
Consumption goods	59.3	60.8	59.5	66.3	43.4	13.3	16.1	.
Investment goods	44.3	44.4	38.6	46.1	30.9	7.4	17.4	23.5

	In b.kr.					% change from previous year[2]		
Services and income balance	*2000*	*2001*	*2002*	*2003*	*2004/Q2*	*3-mo.*	*6-mo.*	*12-mo.*
Services balance	-9.5	1.7	1.8	-7.8	-4.5	.	.	.
Services exports	82.4	106.5	104.5	105.2	28.5	14.8	8.1	7.8
Transportation	40.8	50.9	51.7	51.3	16.5	30.2	25.6	16.8
Travel	18.0	22.9	22.8	24.5	6.0	8.1	10.6	12.8
Other receipts	23.6	32.7	30.0	29.4	6.0	-9.2	-20.5	-10.9
Services imports	-91.9	-104.8	-102.7	-113.0	-33.0	16.0	13.5	15.7
Transportation	-32.7	-37.1	-39.3	-40.0	-12.2	31.4	23.6	16.3
Travel	-37.1	-36.4	-33.4	-39.8	-12.5	24.1	26.1	26.7
Other expenditure	-22.1	-31.3	-30.0	-33.2	-8.2	-9.1	-9.9	2.4
Balance on income	-19.4	-24.9	-8.1	-8.0	1.7	.	.	.
Receipts	11.6	16.9	27.9	28.8	12.5	97.5	39.1	7.0
Compensation of employees	5.5	5.8	5.4	6.2	1.2	-18.8	-8.6	2.5
Interest payments	3.5	3.4	4.9	4.4	1.8	68.0	69.9	26.0
Dividends and reinvested earnings[3]	2.6	7.8	17.6	18.2	9.4	153.2	49.8	4.1
Expenditures	-31.0	-41.9	-36.0	-36.7	-10.7	8.9	13.3	9.6
Compensation of employees	-0.8	-0.5	-0.7	-0.5	-0.2	15.5	41.8	13.9
Interest payments	-28.5	-41.1	-34.2	-31.7	-9.1	9.2	4.4	0.6
Dividends and reinvested earnings[3]	-1.6	-0.3	-1.1	-4.6	-1.5	6.4	69.1	101.8
Current transfer, net	-0.8	-1.0	1.2	-1.2	-0.3	18.5	-5.0	-211.8
Current account balance	-67.1	-30.1	8.9	-32.8	-16.7	.	.	.

Chart 17

Merchandise trade 1993-2004

12-month % changes of 3-month moving averages at fixed exchange rates

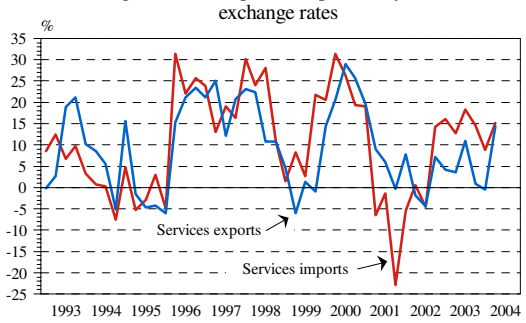


Latest data are preliminary. *Sources:* Statistics Iceland, Central Bank of Iceland.

Chart 18

Exports and imports of services 1993-2004

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



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

Table 10 (continued) Current account balance[1]

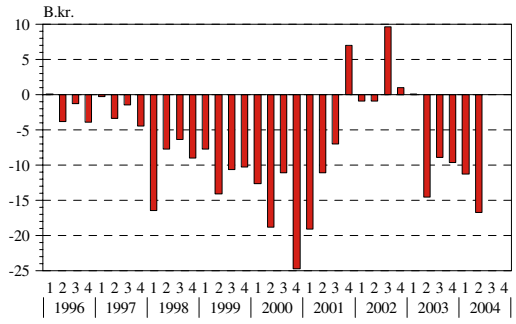
	In b.kr.					Change from prev. year (in b.kr.)[2]		
	2000	2001	2002	2003	2004/Q2	3-mo.	6-mo.	12-mo.
Capital and financial account	71.9	18.6	2.9	28.4	15.6	.	.	.
Capital transfer, net	-0.2	0.4	-0.1	-0.4	-0.3	-0.2	-0.3	-0.5
Financial account[4]	72.2	18.3	3.1	28.8	15.9	-1.2	7.8	29.6
Financial account excl. reserves	66.4	13.1	17.3	55.6	-	-30.4	-37.8	-15.2
Direct investment, net	-17.5	-16.4	-17.8	-6.9	-20.9	-9.5	-27.6	-15.5
Abroad	-31.0	-33.7	-29.6	-26.8	-21.6	-18.0	-34.7	-32.2
In Iceland	13.4	17.3	11.8	19.9	0.7	8.5	7.1	16.7
Portfolio investment, net	39.4	60.8	22.2	236.0	67.3	-6.1	79.0	234.3
Assets	-50.4	-5.6	-30.0	-45.3	-8.8	-2.4	-19.5	-29.0
Equities	-49.9	-5.8	-25.7	-40.6	-7.4	-2.4	-19.3	-30.2
Debt securities	-0.4	0.2	-4.3	-4.7	-1.4	0.1	-0.2	1.2
Liabilities	89.8	66.5	52.2	281.3	76.1	-3.7	98.4	263.3
Equities	-3.4	4.3	1.5	-2.6	-1.0	0.9	2.8	0.7
Debt securities	93.1	62.2	50.7	283.9	77.0	-4.6	95.6	262.5
Other investment, net[4]	44.6	-30.9	4.4	-176.9	-27.6	17.3	-33.4	-158.5
Assets	-7.1	-47.1	-30.4	-148.7	-70.9	-28.4	-45.6	-140.1
Liabilities	51.7	16.2	34.8	-28.1	43.2	45.6	12.2	-18.3
Reserve assets	5.8	4.8	-5.7	-23.4	-2.9	-2.8	-10.1	-30.7
Net errors and omissions	-4.8	11.5	-11.9	4.4	1.1	.	.	.
Memorandum items:								
Long-term borrowing, net	143.0	36.3	45.1	78.9	45.1	9.7	50.1	73.9
Assets	-0.5	-42.1	-40.4	-176.9	-75.2	-31.3	-56.0	-171.8
Monetary authorities	7.0	4.8	-5.7	-23.3	-3.0	-2.9	-10.2	-30.8
General government	-	-	-	-	-	-	-	-
Deposit money banks	-4.1	-18.5	-33.3	-155.7	-69.3	-30.7	-41.0	-143.6
Other sectors	-3.5	-28.4	-1.4	2.1	-2.9	2.4	-4.8	2.6
Liabilities	143.5	78.4	85.4	255.8	120.3	41.0	106.2	245.7
Monetary authorities	9.4	-5.8	4.8	-15.9	-0.0	6.0	11.8	5.7
General government	16.2	42.2	17.5	-4.8	-7.2	-7.8	2.9	-3.3
Deposit money banks	73.9	12.9	54.2	264.1	121.1	46.0	96.1	242.2
Other sectors	44.0	29.1	8.9	12.4	6.4	-3.2	-4.6	1.1

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

Chart 19

Quarterly current account balance 1996-2004

At current exchange rates

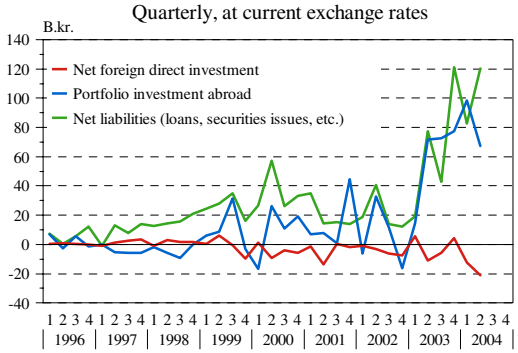


Latest data are preliminary. *Source:* Central Bank of Iceland.

Chart 20

Selected financial account items 1996-2004

Quarterly, at current exchange rates



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

Table 11 International investment position

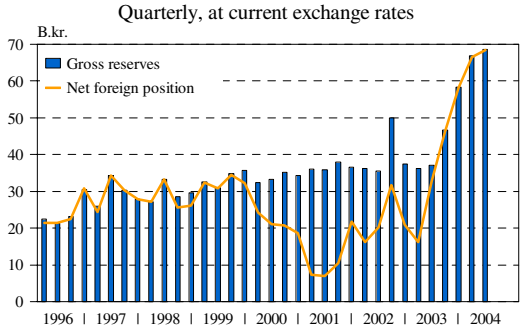
	Position at end of period, in b.kr.								
	1999	*2000*	*2001*	*2002*	*2003*	*Sept.'03*	*Dec.'03*	*March'04*	*June'04*
International investment position	-302.3	-448.7	-587.5	-570.2	-550.1	-578.8	-550.1	-566.2	-596.6
Total assets	244.1	315.8	421.5	395.4	676.8	537.4	676.8	747.2	841.7
Direct investment abroad	33.0	56.2	86.8	87.5	118.7	108.3	118.7	127.2	146.7
Equity capital	16.6	41.0	66.8	67.6	107.3	94.6	107.3	106.4	122.9
Other capital	16.4	15.2	19.9	19.9	11.5	13.7	11.5	20.8	23.8
Portfolio assets	138.8	186.3	202.9	159.7	241.7	210.2	241.7	269.0	281.8
Equity capital	125.4	179.7	188.4	149.3	226.1	195.6	226.1	252.6	263.9
Debt securities	13.4	6.6	14.6	10.4	15.5	14.6	15.5	16.3	17.9
Other investment assets	36.6	39.1	95.2	111.1	258.3	172.6	258.3	284.3	344.7
Reserves	35.8	34.2	36.6	37.2	58.1	46.4	58.1	66.7	68.5
Total liabilities	546.4	764.5	1,009.0	965.7	1,226.9	1,116.1	1,226.9	1,313.5	1,438.3
Direct investment in Iceland	34.9	41.5	70.8	63.3	74.9	61.8	74.9	76.5	81.7
Equity capital	25.3	33.1	63.4	55.9	54.9	55.7	54.9	56.2	61.0
Other capital	9.6	8.5	7.4	7.4	20.1	6.1	20.1	20.3	20.6
Portfolio liabilities	227.4	346.7	468.0	468.3	754.7	664.8	754.7	879.1	956.9
Equity capital	6.0	1.2	5.6	7.9	5.9	5.0	5.9	7.0	8.1
Debt securities	221.4	345.5	462.4	460.4	748.8	659.8	748.8	872.1	948.8
Other investment liabilities	284.2	376.2	470.2	434.1	397.2	389.5	397.2	357.8	399.7
Long-term debt	229.2	289.0	377.0	296.2	251.5	269.7	251.5	234.5	248.4
Short-term debt	55.0	87.2	93.2	137.8	145.7	119.8	145.7	123.3	151.3
Memorandum items:									
Equity capital, net	117.6	193.1	198.7	165.5	264.0	237.0	264.0	296.3	320.8
Net external debt position	-419.9	-641.8	-786.2	-735.8	-814.1	-815.7	-814.1	-862.6	-917.4
Monetary authorities	32.2	18.6	21.7	20.8	58.1	46.2	58.1	66.5	68.3
General government	-138.2	-167.4	-239.6	-226.9	-218.6	-221.9	-218.6	-225.1	-217.1
Deposit money banks	-145.2	-329.5	-377.4	-368.0	-483.0	-476.6	-483.0	-541.3	-602.3
Other sectors	-168.6	-163.4	-191.0	-161.7	-170.6	-163.5	-170.6	-162.7	-166.3
Percent of gross domestic product[1]									
International investment position	-49.4	-63.8	-75.7	-78.9	-69.3	-70.9	-69.3	-65.5	-69.4
Net external debt[2]	68.6	91.2	101.2	101.8	102.6	100.0	102.6	99.8	106.6
External debt position[2]	82.5	102.5	120.1	123.8	144.5	128.6	144.5	142.3	156.8
Long-term debt	67.1	83.6	97.4	94.7	109.7	98.0	109.7	112.8	122.0
Short-term debt	15.4	18.9	22.7	29.1	34.8	30.6	34.8	29.5	34.8

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

Chart 21

Reserve assets and Central Bank net foreign position 1996-2004

Quarterly, at current exchange rates

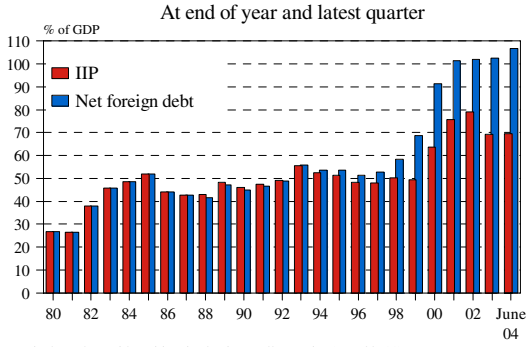


Latest data are preliminary. *Source:* Central Bank of Iceland.

Chart 22

International investment position 1980-2004

At end of year and latest quarter



IIP is shown here with positive sign but is actually negative (see table 11).
Source: Central Bank of Iceland.

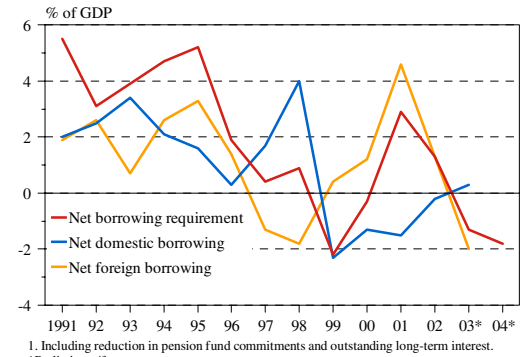
Table 12 Summary of Treasury finances[1]

In b.kr.	Accruals basis 2000	2001	2002	Jan.-Dec. 2002	2003	% ch. from prev. year	March-June 2003	2004	% ch. from prev. year
Revenues	224.7	237.4	259.2	233.8	259.8	11.1	86.4	84.8	-1.8
Expenditures	229.0	228.7	267.3	246.8	268.7	8.9	85.4	92.2	7.9
Financial balance	-4.3	8.6	-8.1	-13.0	-8.9	.	1.0	-7.4	.
Miscell. short-term accounts	6.0	-6.1	-14.4	1.7	9.8	.	-0.5	-1.2	.
Net lending	3.3	-12.6	11.3	10.6	6.5	.	1.5	6.3	.
Equity transactions	-3.2	-11.5	0.7	-3.4	4.5	.	4.0	-0.2	.
Balance before financing	1.9	-21.5	-10.5	-4.1	11.8	.	6.0	-2.4	.
Pension funds	7.6	-18.8	-4.2	-9.0	-7.5	.	-2.5	-5.4	.
Net borrowing	-8.2	41.6	13.5	10.6	-6.0	.	0.8	2.5	.
Short-term domestic	-3.9	6.0	0.0	0.0	8.5	.	5.0	-0.8	.
Long-term domestic	-12.5	1.8	3.0	0.1	1.6	.	2.9	5.2	.
From abroad	8.2	33.9	10.5	10.5	-16.0	.	-7.2	-2.0	.
Cash balance	1.3	1.4	-1.2	-2.5	-1.6	.	4.2	-5.3	.
Revenues and expenditures									
Total revenues	224.7	237.4	259.2	233.8	259.8	11.1	86.4	84.8	-1.8
Personal income taxes, gross	44.1	52.5	55.1	52.6	55.8	6.1	18.1	20.4	12.8
Other income and property taxes	25.3	27.0	27.5	25.5	28.1	10.4	4.6	7.2	54.7
Value-added tax	71.9	72.1	76.3	73.6	80.3	9.0	24.6	28.1	14.0
Taxes on commodities & imports	18.1	15.9	15.4	15.6	17.5	12.4	5.5	7.2	29.3
Payroll taxes	19.7	21.9	23.4	22.6	25.2	11.5	8.3	9.3	12.7
Other taxes	21.5	22.3	22.9	22.1	23.7	6.8	6.6	6.9	5.1
Interest, dividends and rent	13.2	16.6	18.7	11.3	11.0	-3.2	5.0	4.1	-16.4
Profits from asset sales	3.8	1.1	11.7	4.4	11.6	164.9	11.8	0.0	-100.0
Other revenues	7.1	7.9	8.3	6.0	6.7	11.1	2.0	1.7	-16.2
Total expenditures[2]	229.0	228.7	267.3	246.8	268.7	8.9	85.4	92.2	7.9
Expenditure on goods and services	102.0	91.7	116.8	106.7	120.6	13.1	40.3	43.1	7.1
Current transfers	91.6	96.1	112.6	101.7	108.7	6.9	33.0	36.0	9.2
Interest payments	15.2	17.9	16.0	17.8	14.9	-16.0	4.5	6.8	50.5
Maintenance	5.3	5.7	6.1	4.9	5.0	2.1	1.7	1.3	-18.7
Capital expenditures	14.9	17.3	15.8	15.8	19.4	23.4	6.0	4.9	-19.0

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

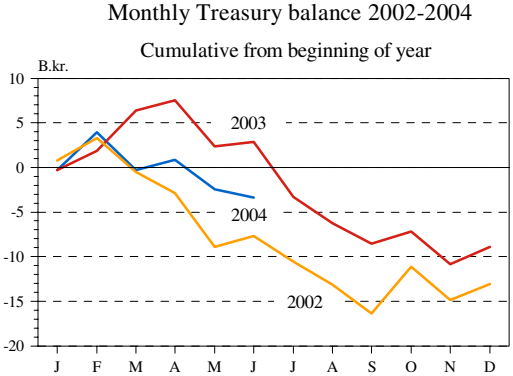
Source: State Accounting Office.

Chart 23



1. Including reduction in pension fund commitments and outstanding long-term interest.
*Preliminary/forecast.
Sources: Treasury accounts, Treasury budget proposal 2004, Central Bank forecast.

Chart 24



Source: State Accounting Office.

Table 13 Public sector finances[1]

In b.kr.										*Estim.*
General government	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*[2]	*2004*
Revenues	179.7	197.2	213.2	242.9	278.6	301.1	328.5	352.0	373	414
Expenditures	193.1	205.0	213.3	240.0	264.0	284.6	327.2	355.4	387	405
Financial balance	-13.4	-7.7	-0.1	2.8	14.6	16.6	1.3	-3.4	-14	9
Net debt	179.3	191.5	196.5	180.7	147.0	158.7	199.3	182.2	164	156
Gross debt	267.6	274.4	279.4	280.5	271.5	278.0	354.6	340.7	329	315
Central government										
Revenues	141.3	155.7	162.4	183.9	213.8	228.7	245.4	257.3	278	306
Expenditures	152.9	163.0	159.6	177.8	198.2	211.7	240.9	262.0	289	299
Financial balance	-11.6	-7.3	2.7	6.2	15.6	16.9	4.6	-4.7	-11	7
Net debt	155.4	168.2	172.3	151.3	118.8	127.4	168.8	130.6	133	124
Gross debt	232.6	239.2	241.6	237.8	226.0	228.5	298.3	281.1	270	254
Local government										
Revenues	40.9	46.9	55.5	62.9	69.9	77.7	89.5	101.2	107	115
Expenditures	42.3	47.4	58.5	67.2	72.8	80.3	94.8	101.4	106	115
Financial balance	-1.4	-0.4	-3.0	-4.3	-2.9	-2.6	-5.3	-0.2	1	0
Net debt	25.1	24.2	25.0	30.1	28.7	31.7	30.7	32.8	31	31
Gross debt	35.6	35.7	38.4	43.3	46.1	49.8	56.6	60.2	60	61
General government, % of GDP										
Revenues	39.7	40.6	41.5	42.7	45.7	45.4	44.1	45.2	46.0	47.3
Expenditures	42.7	42.2	41.5	42.2	43.3	42.9	44.0	45.6	47.7	46.3
Financial balance	-3.0	-1.6	0.0	0.5	2.4	2.5	0.2	-0.4	-1.6	1.0
Net debt	39.3	39.0	37.8	31.6	23.5	23.5	25.8	23.2	20.0	17.5
Gross debt	58.7	55.9	53.8	49.0	43.4	41.1	45.8	43.4	40.1	35.4

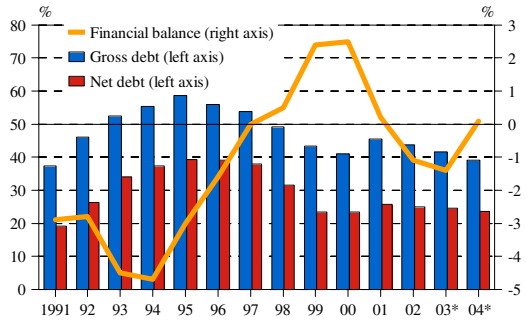
1. The public sector includes the central and local governments and the social security system. Revenues and expenditures are here itemised according to the UN system of national accounts and deviate from the Treasury accounts on accruals basis or (within the year) on cash basis shown in Table 12. The main differences are that by SNA standards i) in each year only pension liability increases due to activities during that year are shown; ii) instead of showing depreciation of tax claims as expenditures, a precautionary deduction is made on the revenue side; iii) profits from the sale of government assets are not shown as revenues. Instead, they are shown as a part of lending and borrowing transactions. 2. The figures for general government revenues and expenditures do not match the total of the respective central and local government figures for 2003. General government data are as published by Statistics Iceland, based on sources including the unpublished national accounts. Statistics Iceland has not published data on central and local government debt, revenues and expenditure for 2003; aggregates are estimated here using data available at the time of going to press.

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

Chart 25

General government balance and debt 1991-2004

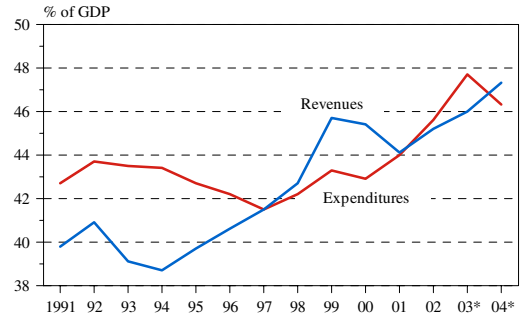
Percent of GDP



*Preliminary/forecast. *Sources:* Ministry of Finance, Statistics Iceland, Central Bank estimates.

Chart 26

General government revenues and expenditures 1991-2004



*A change in the presentation of accounts in March 2004 caused both ratios to rise by 3-5%.
Sources: Statistics Iceland and Central Bank of Iceland estimates for 2004.

Table 14 Turnover[1]

M.kr.	January-April 2002	2003	2004	% ch. on prev. year, Jan.-April[2] 2002	2003	2004
Industries, total	98,731	98,731	106,646	-14.9	-1.8	5.7
Industries, excluding fish processing	63,147	63,147	68,025	-5.8	-1.8	5.4
Industries, excl. fish proc. and power-intensive	49,558	49,558	54,958	-3.5	-1.8	8.6
Retail trade	54,657	54,657	58,836	1.5	0.1	7.3
Wholesale trade	87,641	91,331	108,805	-2.7	3.5	17.9
Wholesale trade, excluding fuels	75,244	78,692	95,839	-2.4	4.7	21.4
Construction	19,324	21,838	27,902	-21.5	10.9	25.1
Total	398,090	392,162	449,667	2.0	-3.3	12.2
Total, excluding fuels	385,693	379,524	436,701	1.2	-1.5	14.7

1. Based on VAT reports. Figures are not comparable with the period before 1998 due to new methodology. 2. Based on price-adjusted turnover, deflated by the consumer price index. *Sources:* Statistics Iceland, Central Bank of Iceland.

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

Real effective exchange rate (1980=100)	Annual averages 1999	2000	2001	2002	2003	Q2 2004	% change on prev. year Q4'03	Q1'04	Q2'04
based on relative consumer prices (CPI)	93.6	96.2	83.6	88.4	93.8	95.8	1.1	3.7	-0.7
based on relative unit labour costs (ULC)	89.5	90.8	79.2	83.9	87.9	92.1	-2.9	12.1	0.0

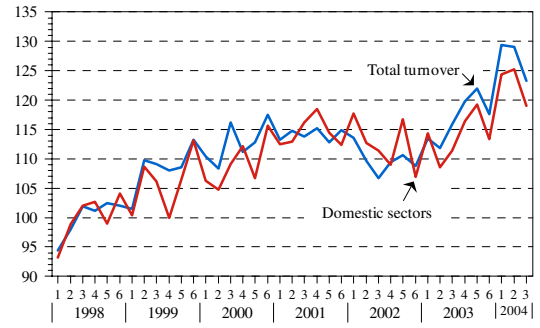
% change on previous year	1996	1997	1998	1999	2000	2001	2002	Prelim. 2003	Forecast 2004
Nominal effective exchange rate	0.0	1.2	1.5	0.0	0.2	-16.6	2.5	6.2	1.2
Foreign consumer prices	2.0	2.1	1.6	1.6	2.3	2.2	1.8	2.1	1.3
Domestic consumer prices	2.3	1.8	1.7	3.4	5.1	6.6	4.8	2.1	3.3
Real exchange rate based on relative CPI	0.3	0.9	1.6	1.8	2.9	-13.1	5.7	6.1	3.2
Foreign productivity	1.5	1.5	1.2	1.2	1.9	1.2	1.0	1.1	1.4
Domestic productivity	2.1	2.0	2.9	1.4	3.3	1.1	-0.1	5.1	2.0
Foreign wages	3.5	3.2	3.0	3.3	3.2	3.3	3.1	3.0	2.8
Domestic wages	5.2	5.8	7.1	5.5	5.7	8.0	5.8	5.5	5.0
Real exchange rate based on relative ULC	1.1	3.3	4.1	1.7	1.4	-12.7	5.9	4.8	2.7

1. Latest values are preliminary. *Source:* Central Bank of Iceland.

Chart 27

Turnover volume 1998-2004

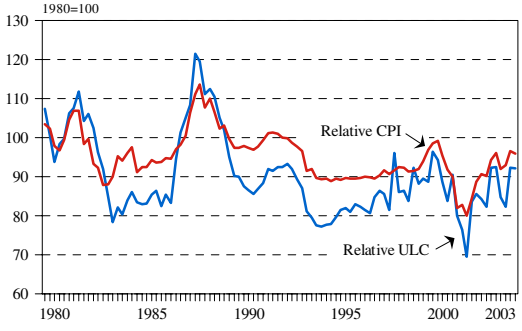
At constant prices



Sources: Statistics Iceland, Central Bank of Iceland.

Chart 28

Quarterly real effective exchange rate of the Icelandic króna 1980/Q1 - 2004/Q2



Latest values are preliminary. *Source:* Central Bank of Iceland.

Table 16 Real estate market and asset prices

Real estate market [1]	*2001*	*2002*	*2003*	*July '04*	*1-mo. % change June '04*	*1-mo. % change July '04*	*12-mo. % change July '02*	*12-mo. % change July '03*	*12-mo. % change July '04*
Residential housing price index[2]	151.8	158.9	177.7	202.6	1.1	1.3	3.7	13.4	11.3
Apartment housing price index[3]	156.0	161.1	180.7	202.7	1.4	0.5	3.4	14.3	10.0
New housing loans at market prices (b.kr.)[4]	28.6	32.2	49.6	...	36.1	...	5.2	31.6	...
Number of Housing Fin. Fund loan applications[5]	2,846	2,535	3,271	218	28.1	-4.5	-21.1	28.1	44.4
Fish quota prices (period averages. kr./kilo)									
Price of long-term cod quota (kr./kilo)	709	930	1,223	1,080	-	-	42.9	20.0	-10.0
Price of short-term cod quota (kr./kilo)	117	156	132	120	-4.2	4.3	29.2	-19.4	-4.0

Equity market	*At end of year*				*August 31,*	*% change to August 31, 2004*			
Equity prices, Dec. 31, 1997 = 1,000	*2000*	*2001*	*2002*	*2003*	*2004*	*1-mo.*	*3-mo.*	*6-mo.*	*12-mo.*
ICEX-15	1,305.9	1,159.0	1,352.0	2,114.3	3,390.2	8.9	27.2	29.0	92.6
ICEX-MAIN (The Main List index)	1,303.3	1,180.8	1,436.2	2,075.2	3,180.4	8.3	23.5	25.3	80.0
ICEX industry indices Dec. 31, 1997 = 100									
Fisheries	74.5	86.7	107.3	100.0	111.0	1.9	2.5	5.8	12.3
Finance and insurance	163.4	157.9	164.3	252.4	457.4	10.6	33.1	40.9	112.2
Transport	117.6	80.5	118.8	139.4	232.6	7.2	24.1	25.4	79.3
Industry and manufacturing	156.3	120.3	142.8	172.8	264.1	2.6	22.0	32.5	65.9

1. Changes are based on 3-month moving averages. 2. Greater Reykjavík Area (GRA). January 1994=100. 3. GRA. January 1996=100. 4. Percentage changes are price-adjusted using the price index for residential housing in the GRA. 5. Housing Financing Fund applications for new housing and renovation.

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

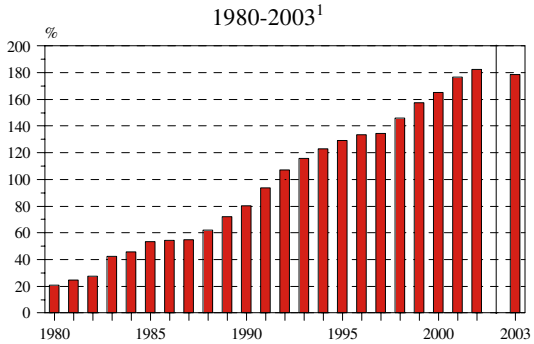
Table 17 Households and firms: assets and debt

B.kr. unless otherwise stated	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*Preliminary 2002*	*Preliminary 2003*	*% change 2002-2003*
Household assets in resident. housing and cars[1]	648.8	676.0	724.1	842.6	953.2	1,043.9	1,108.3	1,235.8	11.5
Assets in pension funds	302.0	345.6	398.2	507.3	557.3	640.1	664.6	786.0	18.3
Household debt with the credit system[2]	350.7	386.2	442.6	510.6	613.8	710.4	758.6	776.0	15.3
Household debt as % of disposable income[2]	133.4	134.7	146.1	157.3	165.4	176.8	182.4	178.5	.
Firms' debt with the credit system[2]	359.2	420.7	509.4	668.8	813.3	962.3	978.9	1,185.6	21.1
Debt of firms in fisheries sector	116.1	123.5	139.7	160.3	165.2	195.5	191.9	185.5	-3.3

1. National Economic Institute national wealth estimates. 2. Due to reclassification of lending within the credit system, household debt is 50.3 b.kr lower than would otherwise have been the case at the end of 2003 and corporate debt 27.9 b.kr. lower, compared with the former classfication. Year-on-year changes are based on the former classification. *Sources:* National Economic Institute and Central Bank of Iceland.

Chart 29

Household debt as percentage of disposable income 1980-2003[1]

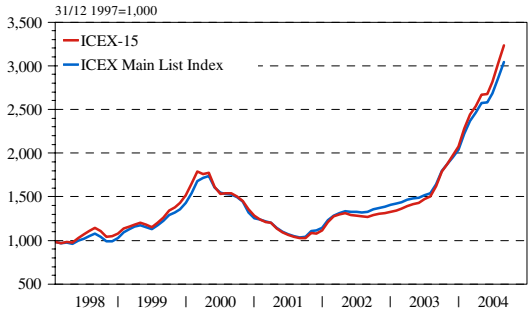


1. New classification from 2003. See footnote 2 to table 17. Latest values are preliminary.
Source: Central Bank of Iceland.

Chart 30

Equity prices 1998-2004

Daily equity prices



Source: Iceland Stock Exchange (ICEX).

Table 18 Icelandic firms' financial accounts

Accounts of publicly listed firms[1]	*Jan.-Dec.*		*% of turnover*		*Jan.-June*		*Change*	*% of turnover*	
All amounts in b.kr	*2002*	*2003*	*2002*	*2003*	*2003*	*2004*	*'03-'04*	*2003*	*2004*
Profit before financial exp. & depreciation	33.4	34.8	11.6	10.9	18.2	23.9	5.7	12.5	13.8
Fisheries	10.8	8.4	23.6	21.1	4.9	5.7	0.8	22.5	22.9
Transport	2.6	3.2	10.6	10.8	0.6	1.9	1.3	5.2	9.2
IT industry	8.1	9.8	22.7	23.7	4.5	5.8	1.3	22.7	23.6
Industry and manufacturing	8.7	9.9	13.4	11.2	6.4	8.8	2.4	17.4	19.1
Profit after taxes	16.7	16.1	6.5	5.1	8.6	9.2	0.6	5.9	5.3
Fisheries	8.7	3.5	19.0	8.8	2.9	1.9	-1.0	13.2	7.4
Transport	2.3	4.4	9.6	14.6	0.1	0.3	0.2	1.1	2.2
IT industry	1.2	1.6	3.5	3.8	0.7	2.3	1.6	3.5	9.2
Industry and manufacturing	5.3	5.8	8.1	6.6	4.3	4.6	0.3	11.6	10.0
Equity ratio	37.0	35.5	.	.	33.4	32.2	.	.	.
Return on equity	13.0	15.5	.	.	11.2	13.1	.	.	.
Sample size at end of period	24	24	.	.	31	31	.	.	.

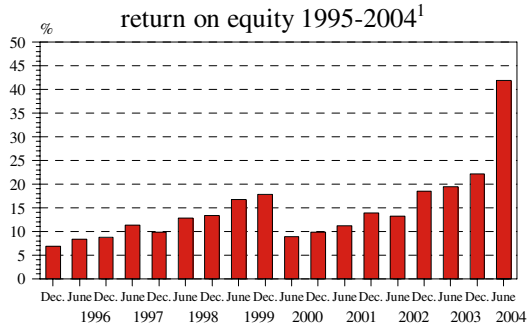
Accounts of commercial banks and savings banks[2]					*% change*	*Jan.-June*		*% change*
All amounts in b.kr.	*2000*	*2001*	*2002*	*2003*	*'02-'03*	*2003*	*2004*	*'03-'04*
Net interest income	21.1	29.4	29.6	36.0	21.6	16.6	22.2	33.7
Other operating income	13.4	10.3	27.9	45.6	63.5	19.6	40.8	108.1
Net operating income	34.6	39.6	57.5	81.6	41.9	36.2	63.0	74.0
Operating expenses	22.7	25.4	34.1	44.9	31.5	20.9	27.0	29.2
Provisions for bad and doubtful debts	4.0	7.4	9.3	13.2	41.9	5.9	6.7	13.0
Value adjustments	1.7	-	-	-	-	-	-	-
Taxes	1.9	-0.1	1.2	2.9	144.1	1.6	4.3	165.9
Profit	4.4	6.9	12.5	18.6	48.4	7.7	21.3	176.5
Total assets at end of period	789.7	941.0	1,161.1	1,597.3	37.6	1,345.3	1,886.3	40.2
Stockholders' equity at end of period	49.1	60.8	84.5	113.5	34.4	86.2	133.2	54.5
% at end of period								
Return on equity	9.8	13.9	18.5	22.5	.	19.9	41.5	.
Cost ratio [3]	65.6	64.0	59.4	55.0	.	57.8	42.9	.
Capital ratio	9.7	11.3	12.2	12.3	.	10.9	13.1	.
Capital ratio excluding subordinated loans	6.6	8.0	9.1	9.2	.	8.1	9.0	.

1. Companies listed on Iceland Stock Exchange (ICEX), excluding the finance and insurance sector. Paired comparison. 2. The sample includes the largest commercial banks (three) and the six largest savings banks. 3. Operating expenses as a percentage of net operating income.

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

Chart 31

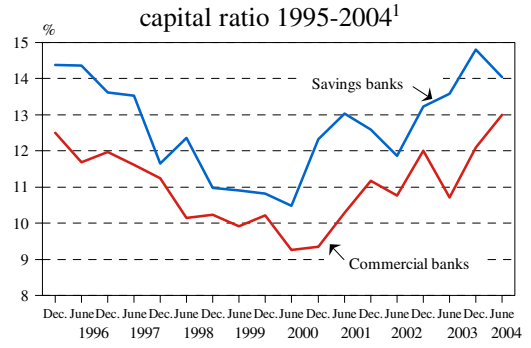
Commercial banks and savings banks: return on equity 1995-2004[1]



1. The commercial banks and six largest savings banks. From 1998 FBA is included and before that the Fisheries Investment Fund and Industrial Loan Fund. *Sources:* Financial Supervisory Authority (FME) and banks' and savings banks' annual/interim reports.

Chart 32

Commercial banks and savings banks: capital ratio 1995-2004[1]



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

Table 19 International comparison

Based on latest monthly data for each region:	*EU-25*	*EMU-12*	*USA*	*UK*	*Japan*	*Sweden*	*Norway*	*Finland*	*Denmark*	*Iceland*
Inflation in previous 12 months	2.3	2.3	3.0	3.0	-0.1	0.6	-0.1	-0.1	-0.4	3.7
Unemployment[1]	9.0	9.0	5.4	4.8	4.9	5.7	4.5	9.0	6.2	3.3
Economic growth[2]	2.2	2.0	2.8	3.7	4.5	3.3	2.9	2.5	2.5	4.9
Long-term interest rates (nominal yield)[3]	.	3.5	3.5	5.0	0.7	4.0	3.6	3.4	3.7	7.7
Long-term interest rates (real yield)[3, 4]	.	.	0.9	1.9	.	1.8	.	.	.	3.7
Short-term interest rates[5]	.	2.0	1.6	4.9	0.0	2.0	1.9	2.1	2.0	6.5
In 2003 (unless otherwise stated):										
GDP per capita based on PPP, in thous. US$[6]	.	25.6	36.1	27.9	26.9	27.3	35.5	26.5	29.2	28.4
Gross saving, % of GDP[7]	.	.	14.6	14.7	25.7	21.6	30.8	24.2	22.7	15.8
Gen. government fin. balance, % of GDP	.	-2.7	-4.8	-3.2	-8.0	0.5	9.0	2.1	1.2	-1.4
Gen. government gross debt, % of GDP	.	76.2	62.8	51.6	157.3	61.5	34.4	51.6	50.1	41.3
Gen. government expenditure, % of GDP	.	49.0	35.7	42.6	37.7	58.2	48.4	50.6	56.1	47.9
Current account balance, % of GDP	.	0.4	-4.9	-1.7	3.1	6.3	13.0	5.7	3.0	-5.6

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

Table 20 International economic developments

							Prelim.	*Forecast*	
Annual economic growth (%)[1]	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*
World	4.2	2.8	3.7	4.7	2.4	3.0	3.9	4.6	4.4
Euro area	2.3	2.9	2.8	3.5	1.6	0.9	0.4	1.8	2.1
United Kingdom	3.3	3.1	2.8	3.8	2.1	1.7	2.3	3.3	2.6
United States	4.5	4.2	4.4	3.7	0.5	2.2	3.1	4.4	3.6
Japan	1.8	-1.2	0.2	2.8	0.4	-0.3	2.7	4.3	1.9
Other emerging markets and developing countries[2]	5.3	3.0	4.0	5.9	4.1	4.6	6.1	6.0	5.9
Annual growth in world trade (%)	10.4	4.4	5.9	12.5	0.1	3.1	4.5	6.8	6.6
Consumer price inflation (%)									
Euro area	1.6	1.1	1.1	2.0	2.4	2.3	2.1	2.1	1.8
United Kingdom	1.8	1.6	1.4	0.8	1.2	1.3	1.4	1.5	1.8
United States	2.3	1.5	2.2	3.4	2.8	1.6	2.3	2.7	2.4
Japan	1.7	0.6	-0.3	-0.9	-0.8	-0.9	-0.2	-0.1	0.0
Unemployment, % of labour force									
Euro area	10.8	10.2	9.4	8.5	8.0	8.4	8.8	8.9	8.7
United Kingdom	7.1	6.3	6.0	5.5	5.1	5.2	5.0	2.8	2.7
United States	4.9	4.5	4.2	4.0	4.8	5.8	6.0	5.5	5.3
Japan	3.4	4.1	4.7	4.7	5.0	5.4	5.3	4.8	4.6
Gen. government fin. balance, % of GDP[3]									
Euro area	-2.6	-2.3	-1.3	0.1	-1.7	-2.3	-2.7	-2.8	-2.7
United Kingdom	-2.2	0.1	1.1	3.9	0.7	-1.6	-3.2	-2.9	-2.9
United States	-0.8	0.4	0.9	1.6	-0.2	-3.3	-4.8	-4.7	-3.9
Japan	-3.8	-5.5	-7.2	-7.5	-6.1	-7.9	-8.0	-7.1	-6.6
Long-term interest rates[4]									
Euro area	5.9	4.7	4.6	5.4	5.0	4.9	4.1	4.1	4.7
United Kingdom	7.1	5.5	5.1	5.3	4.9	4.9	4.5	5.1	5.6
United States	6.4	5.3	5.6	6.0	5.0	4.6	4.0	4.5	5.3
Japan	2.4	1.5	1.7	1.7	1.3	1.3	1.1	1.4	1.7

1. Real GDP percent change between years. 2. In May 2004, the IMF revised its world economic classifications into two categories of countries. The category 'Other emerging market and developing countries' comprises 146 countries. 3. General government, e.g. central government, local governments and social security transactions. 4. Yields on ten-year Treasury bonds. *Sources:* Consensus Forecasts, International Monetary Fund, OECD.

Table 21 Historical economic indicators (continued on next page)

	Consumer prices [1]		*Króna effective exchange rate*[2]			*Interest rates (%)*			*Money and credit* % change over year			Ratio of gr. reserves to merch. imports[6]	External debt, % of GDP[7]	Growth of real GDP(%)
	Consumer price index	CPI inflation (%)	Nominal exchange rate[3]	Real exchange rate[4] Relative CPI	Relative ULC	Gov. bonds average yield[5]	Banks' secured lending (real yield) Non-ind.	Indexed	M3	DMBs' lending	Credit system lending			
1975	1.4	49.4	7.5	92.4	96.9	3.9	-15.7	.	29.0	32.1	46.4	1.3	42.8	0.7
1976	1.8	32.4	8.5	103.3	106.4	5.8	-7.4	.	32.5	26.8	32.2	2.2	40.7	6.0
1977	2.4	30.3	9.7	113.1	114.2	3.5	-9.5	.	43.9	40.5	41.8	2.0	37.6	8.8
1978	3.5	44.0	13.9	105.3	106.6	3.3	-13.4	.	48.7	47.3	62.8	2.6	39.2	5.9
1979	5.0	44.5	18.7	100.0	100.7	3.5	-15.4	.	55.9	58.1	46.4	2.5	39.7	4.9
1980	8.1	61.8	25.9	100.0	100.0	3.5	-8.3	2.3	65.4	66.4	71.1	2.4	35.9	5.7
1981	12.2	50.8	34.7	104.4	106.3	3.2	-1.7	2.5	70.5	72.2	54.1	3.0	36.5	4.3
1982	18.4	51.0	54.5	95.8	102.2	3.5	-9.4	2.9	58.0	92.0	100.2	2.1	46.4	2.1
1983	33.9	84.2	100.0	90.3	84.3	3.8	-14.2	3.0	78.7	85.6	82.9	2.5	57.2	-2.2
1984	43.7	29.2	116.3	94.7	83.4	7.0	3.4	5.5	33.4	43.0	40.2	2.1	60.2	4.1
1985	57.9	32.4	148.7	93.2	84.5	6.9	-2.3	5.0	47.6	29.7	35.2	2.8	63.6	3.3
1986	70.2	21.3	171.0	95.0	86.4	8.5	4.3	5.2	35.0	19.1	20.1	3.6	56.5	6.2
1987	83.4	18.8	177.3	104.1	109.0	8.7	4.7	7.7	35.2	42.1	31.4	2.4	49.4	8.6
1988	104.6	25.4	202.6	109.4	113.4	8.7	11.8	9.2	24.0	37.2	34.0	2.4	51.3	-0.1
1989	126.7	21.1	254.7	100.6	98.1	7.4	6.5	7.8	27.2	25.2	33.8	3.0	56.8	0.3
1990	145.5	14.8	283.7	97.3	87.4	7.0	9.3	8.0	14.9	11.0	12.5	3.3	55.2	1.1
1991	155.4	6.8	283.6	99.9	89.6	8.1	10.0	9.2	14.4	11.6	15.4	3.2	56.0	0.1
1992	161.2	3.7	285.0	99.8	92.5	7.4	11.8	9.3	3.8	5.3	11.8	4.0	58.8	-3.3
1993	167.8	4.1	308.8	94.4	84.3	6.7	11.5	9.1	6.5	5.0	11.1	4.3	66.7	0.8
1994	170.3	1.5	324.8	89.3	77.6	5.0	9.5	7.9	2.3	-1.3	4.5	2.6	63.4	4.0
1995	173.2	1.7	322.3	89.4	81.0	5.6	10.1	8.7	2.2	0.0	5.9	2.4	63.4	0.1
1996	177.1	2.3	322.9	89.7	81.9	5.5	10.5	8.9	6.8	11.8	9.3	3.0	62.9	5.2
1997	180.3	1.8	318.7	90.5	84.5	5.3	11.1	9.0	8.7	16.8	11.8	2.6	64.8	4.7
1998	183.3	1.7	313.6	91.9	88.0	4.7	11.8	8.8	15.2	25.6	15.1	2.2	70.0	5.5
1999	189.6	3.4	313.1	93.6	89.5	4.4	8.0	8.6	16.9	22.8	17.3	2.6	82.5	4.2
2000	199.1	5.0	313.3	96.2	90.8	5.1	12.7	9.5	11.2	26.2	17.3	2.1	102.6	5.7
2001	212.4	6.7	376.3	83.6	79.2	5.1	9.3	10.2	14.9	13.4	19.2	2.1	120.3	2.2
2002	222.6	4.8	365.2	88.4	83.9	5.2	13.1	10.1	15.3	2.0	3.2	2.5	123.9	-0.5
2003	227.3	2.1	343.3	93.8	87.9	4.4	9.0	9.1	23.5	16.5	11.0	3.6	144.5	4.3

1. Annual averages (May 1988=100) and changes between years. 2. Annual averages. Exchange rate of the króna against a trade-weighted average of foreign currencies. 3. 1983=100. 4. 1980=100. ULC= unit labour cost. 5. Annual average yield of indexed Treasury bonds of all maturities. Yields on Iceland Stock Exchange from 1987. Before that, primary market yields. 6. Gross foreign exchange reserves at end of period as a ratio of the average monthly value of merchandise imports. Calculated at fixed exchange rates. 7. Gross debt. Direct investment capital excluded.

Table 21 (continued) Historical economic indicators

	Components of GDP (% change from previous year)			*External trade (% change from prev. year)*				*Gen. government (% of GDP)*[8]			*Labour market (% of labour force)*		*Wages (% change from previous year)*	
	Private consump-tion	Gross fixed cap. formation	National expendi-ture	Goods & services (volume changes) Exports	Imports	Terms of trade	Curr. acc. balance (% of GDP)	Financial balance	Revenues	Expen-ditures	Unem-ployment	Labour particip.	Real wages[9]	Real disposable income
1975.....	-9.6	-8.8	-5.5	2.6	-12.8	-11.1	-10.2	-2.7	33.0	35.7	0.5	72.2	.	-15.1
1976.....	5.4	-2.7	-3.5	13.1	-3.6	7.8	-1.5	1.1	32.1	31.1	0.5	73.4	.	2.3
1977.....	12.9	11.5	15.0	8.9	20.6	7.0	-2.3	-0.2	30.5	30.7	0.3	72.5	.	15.5
1978.....	9.0	-5.8	2.1	15.2	3.7	0.3	1.2	0.1	31.0	30.9	0.3	73.6	.	8.5
1979.....	2.8	-1.5	3.5	6.3	2.5	-8.6	-0.7	0.9	32.4	31.4	0.4	73.0	.	2.0
1980.....	3.4	13.5	5.7	2.7	3.0	-2.8	-1.9	1.3	33.8	32.5	0.3	74.1	.	1.1
1981.....	6.2	1.2	5.6	3.2	7.1	-0.5	-4.0	1.3	34.9	33.6	0.4	76.8	0.7	5.5
1982.....	5.0	0.1	5.0	-8.9	-0.6	-0.8	-7.9	1.7	36.0	34.3	0.8	77.6	1.7	2.2
1983.....	-5.6	-12.7	-8.6	11.0	-9.7	-1.3	-1.9	-2.0	34.0	36.1	1.0	77.4	-16.7	-12.5
1984.....	3.7	9.4	6.4	2.4	9.2	0.6	-4.6	2.2	35.4	33.1	1.3	77.6	-3.1	-2.5
1985.....	4.2	1.0	2.7	11.1	9.4	-0.9	-3.9	-1.7	34.0	35.7	0.9	79.3	1.2	10.8
1986.....	6.9	-1.9	4.5	5.9	0.9	5.4	0.5	-4.0	33.7	37.8	0.7	80.9	5.7	9.5
1987.....	16.2	19.1	15.7	3.3	23.3	4.3	-3.4	-0.9	33.9	34.7	0.4	84.1	9.0	25.8
1988.....	-3.8	-0.1	-0.6	-3.6	-4.6	-0.8	-3.5	-2.0	37.4	39.5	0.6	80.1	2.2	-2.7
1989.....	-4.2	-7.8	-4.4	2.9	-10.3	-3.9	-1.3	-4.6	37.5	42.0	1.6	78.7	-9.1	-9.4
1990.....	0.5	2.6	1.5	0.0	1.0	-2.0	-2.1	-3.3	38.2	41.4	1.8	77.5	-4.9	-4.6
1991.....	2.9	3.3	3.8	-5.9	5.3	3.5	-4.0	-2.9	39.8	42.7	1.5	76.2	1.4	2.1
1992.....	-3.1	-11.1	-4.5	-2.0	-6.0	-0.6	-2.4	-2.8	40.9	43.7	3.0	75.5	-0.8	-1.9
1993.....	-4.6	-10.7	-3.8	6.5	-7.8	-3.9	0.7	-4.5	39.1	43.5	4.4	75.3	-2.6	-7.6
1994.....	2.8	0.5	2.1	9.5	4.1	0.4	1.9	-4.7	38.7	43.4	4.8	75.4	-0.3	0.0
1995.....	2.2	-1.1	2.3	-2.2	3.9	1.3	0.7	-3.0	39.7	42.7	5.0	75.7	2.8	3.8
1996.....	5.4	25.6	7.1	9.8	16.5	-3.1	-1.8	-1.6	40.6	42.2	4.3	76.4	4.0	4.1
1997.....	5.0	10.0	5.5	5.3	7.7	2.1	-1.8	0.0	41.5	41.5	3.9	76.6	3.6	2.5
1998.....	9.9	32.9	13.4	2.1	23.5	5.6	-6.9	0.5	42.7	42.2	2.8	77.1	7.6	8.7
1999.....	7.3	-3.0	4.2	4.0	4.2	-0.8	-7.0	2.4	45.7	43.3	1.9	77.3	3.3	3.0
2000.....	4.0	14.8	6.8	5.0	8.0	-2.7	-10.1	2.5	45.4	42.9	1.3	77.3	1.6	1.3
2001.....	-3.8	-7.6	-4.2	7.7	-9.0	0.3	-4.0	0.2	44.1	44.0	1.4	77.5	2.0	1.6
2002.....	-1.1	-15.1	-2.9	3.6	-2.5	0.5	1.1	-0.4	45.2	45.6	2.5	77.3	2.2	-0.1
2003.....	6.7	17.7	8.0	0.3	9.6	-4.2	-4.1	-1.6	46.0	47.7	3.4	77.0	3.4	2.8

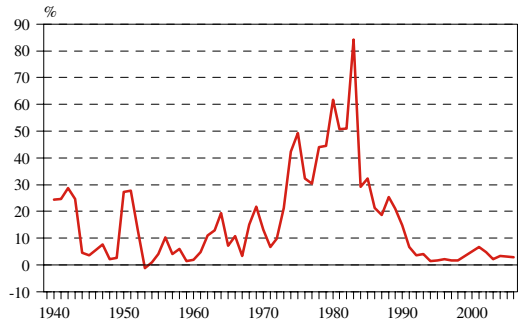
8. Central and local governments and the social security system. 9. Deflated by consumer prices.

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

Chart 33

Consumer price inflation 1939-2006

% change between annual averages

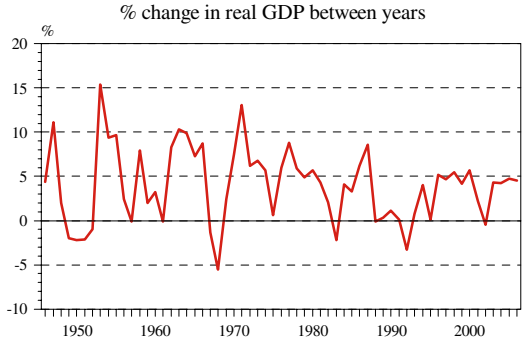


Central Bank forecast for 2004-2006. *Sources:* Statistics Iceland and Central Bank of Iceland.

Chart 34

Economic growth 1945-2006

% change in real GDP between years

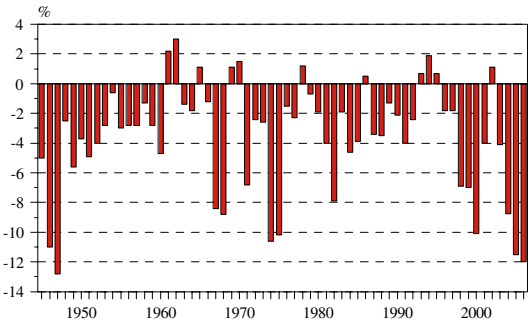


Preliminary/forecast 2003-2006. *Sources:* Statistics Iceland and Central Bank of Iceland.

Chart 35

Current account balance 1945-2006

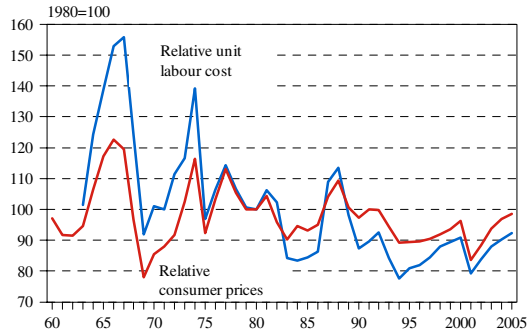
% of GDP



Preliminary/forecast 2003-2006. *Sources:* Statistics Iceland and Central Bank of Iceland.

Chart 36

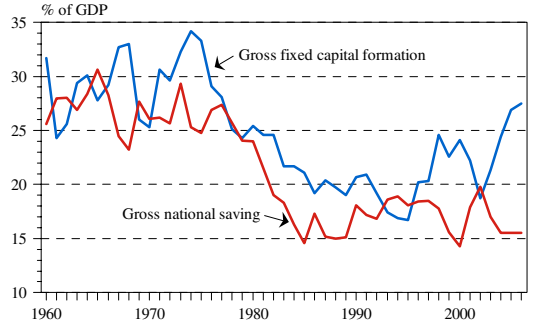
Real effective exchange rate of the Icelandic króna 1960-2005



Preliminary/forecast 2003-2005. *Source:* Central Bank of Iceland.

Chart 37

Gross national saving and fixed capital formation 1960-2006

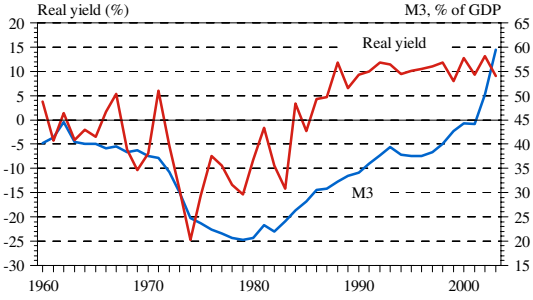


Preliminary/forecast 2003-2006. *Sources:* Statistics Iceland and Central Bank of Iceland.

Chart 38

Real yield and broad money 1960-2003

Real yield on non-indexed bank loans and M3 as percent of GDP



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

Table 22 Structural indicators for the Icelandic economy

I. Population and labour force (thous.)	*1970*	*2003*
Population at end of year	204.8	290.6
under 16 years of age	70.6	70.4
16-74 years of age	127.3	204.3
above 74 years of age	7.0	15.8
Average popul. growth in prev. 5 years (%)	1.1	1.1
Labour force (thous. man-years)	82.7	146.4
Males	54.7	84.1
Females	28.0	62.3

II. Employment by industry (%)	*1970*	*2001*
Agriculture	12.4	3.3
Fisheries	6.6	3.9
Fish processing	7.8	5.1
Manufacturing industry	15.2	12.1
Construction, electricity and water	11.3	10.3
Wholesale & retail trade, restaur. & hotels	13.5	16.7
Transport, storage and communication	8.4	6.7
Finance, insurance, real estate, business serv.	4.0	9.5
Producers of government services	12.4	18.9
Other services	8.3	13.4

III. Merchandise exports	*1970*	*2003*
By category (%):		
Marine products	77.1	62.3
Manufactures	18.4	33.9
thereof aluminium and ferro-silicon	13.2	22.1
Agricultural products	3.4	1.9
By regions (%):		
United States	30.0	9.3
European Union	52.8	72.1
Other	17.2	18.7

IV. National income and expenditure	*1970*	*2003*[1]
Gross domestic product (GDP), b.kr.	0.4	810.8
GDP, billion US$	0.5	10.6
National income per capita, thous. US$	2.0	36.2
GDP per capita, thous. US$, PPP-converted [2]	2.7	29.4
Gross capital formation, % of GDP	25.3	21.3
Gross national saving, % of GDP	26.1	17.0
Net national saving, % of net national product	13.8	5.2
Exports of goods and services, % of GDP	46.4	35.5
Public consumption, % of GDP	12.7	26.3
Gen. government total expend., % of GDP[3]	28.9	47.7
Total taxes, % of GDP[3]	28.9	39.0

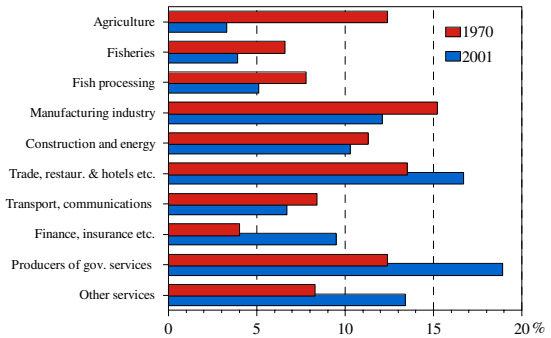
V. Capital and indebtedness *% of GDP unless otherwise stated*	*1970*	*2003*[1]
Fixed assets, % of GDP	3.4	3.4
Fixed assets, billion USD	1.8	37.2
Net external debt	20.1	102.6
Debt service, % of export revenue	11.3	61.6
General government total debt	13.0	40.1
General government net debt	-2.3	20.0
Broad money (M3)	37.5	59.8
Credit system total lending	484.8	269.6
to industries	53.6	141.9
to households	21.2	95.1
Market capitalisation of listed equities	.	81.3

1. Preliminary data. 2. Converted to US dollars at an exchange rate that eliminates the difference in price levels between the countries. 3. National accounts basis.

Sources: Iceland Stock Exchange, National Economic Institute, OECD, Statistics Iceland, Central Bank of Iceland.

Chart 39

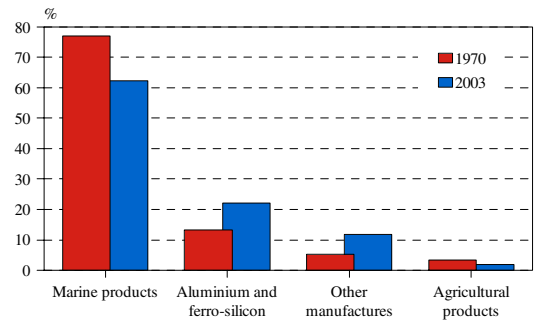
Employment by industry in 1970 and 2001



Source: Statistics Iceland.

Chart 40

Merchandise exports by category 1970 and 2003



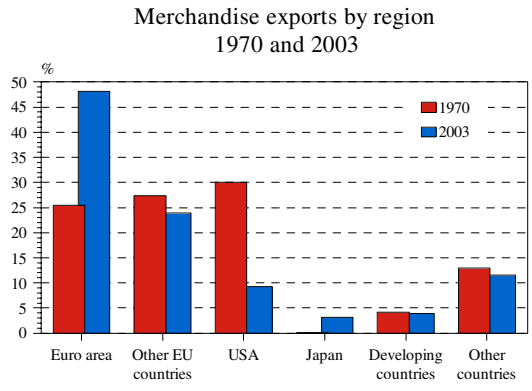
Source: Statistics Iceland.

Table 23 Merchandise exports and imports by regions[1]

	Share of total (%)						In b.kr.	
						Jan.-July		Jan.-July
Merchandise exports, fob	*1970*	*1980*	*1990*	*2000*	*2003*	*2004*	*2003*	*2004*
European Union	52.8	52.3	70.7	67.4	72.1	74.4	131.6	86.0
Euro area	25.4	30.2	37.6	42.3	48.2	48.7	87.9	56.2
Other EU countries	27.4	22.0	33.1	25.1	23.9	25.8	43.7	29.8
United Kingdom	13.2	16.5	25.3	19.3	17.5	18.3	32.0	21.2
Other Western European countries	2.8	2.3	3.4	7.8	7.8	5.5	14.3	6.3
Eastern Europe and former Soviet Union	9.6	8.8	2.9	1.4	2.6	3.2	4.8	3.7
Russia	6.8	5.4	2.5	0.4	0.6	1.0	1.0	1.1
United States	30.0	21.6	9.9	12.2	9.3	9.5	16.9	11.0
Japan	0.1	1.5	6.0	5.2	3.2	3.6	5.9	4.2
Other OECD countries	0.5	0.6	0.5	2.0	0.3	1.4	0.6	1.6
Developing countries	4.2	12.9	5.5	3.0	3.9	1.5	7.2	1.7
Other countries	0.0	0.0	1.1	1.0	0.8	0.9	1.4	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	182.6	115.6
Merchandise imports, cif								
European Union	64.9	58.0	59.9	57.0	56.9	60.6	123.2	89.3
Euro area	32.0	33.2	35.5	33.5	34.9	34.3	75.6	50.5
Other EU countries	33.0	24.8	24.4	23.6	22.0	26.4	47.6	38.8
United Kingdom	14.3	9.5	8.1	9.0	7.4	7.1	16.1	10.5
Other Western European countries	5.4	8.1	5.2	9.7	8.7	11.0	18.9	16.2
Eastern Europe and former Soviet Union	10.4	10.9	6.5	5.7	10.4	8.2	22.6	12.0
Russia	7.2	9.7	5.0	1.8	2.8	1.1	6.1	1.7
United States	8.2	9.4	14.4	11.0	7.4	11.1	16.1	16.4
Japan	2.9	4.0	5.6	4.9	3.8	4.0	8.3	5.9
Other OECD countries	0.4	5.8	3.7	4.5	2.3	2.8	4.9	4.1
Developing countries	7.2	2.7	3.1	5.6	9.0	1.1	19.6	1.6
Other countries	0.6	1.1	1.4	1.5	1.4	1.2	3.0	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	216.5	147.3

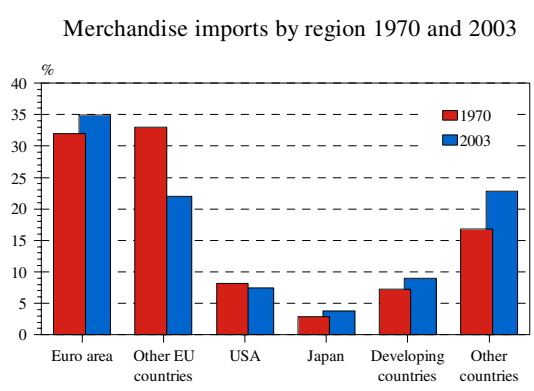
1. In data prior to the year 2000, country groups are based on the year 2000.
Source: Statistics Iceland.

Chart 41



Source: Statistics Iceland.

Chart 42



Source: Statistics Iceland.