

Slowdown in inflation requires tight stance

Price developments were more favourable during the third quarter than the Central Bank had predicted in its August forecast. Measured in terms of the 12-month rate of change in the CPI, inflation has therefore decelerated since the spring. The gap has also narrowed between Iceland and its trading partners, where inflation has been exacerbated by factors including the rise in oil prices. However, the inflation outlook for next year has deteriorated, since the króna has depreciated since the end of the summer. The Central Bank is forecasting a rate of inflation of just over 5% between the years 2000 and 2001, but 4.6% during 2001. Assuming an unchanged exchange rate, however, the outlook is for a slowdown in inflation to 3% during 2002. Since the impact of the Central Bank's recent 0.8% rise in its interest rates has only partly been transmitted, this will conceivably suffice to bring inflation down to a similar level to that among trading partners after around two years, as is aimed. But strong and mounting pressure in the labour market and a large current account deficit continue to pose an upside risk for inflation developments. Lending growth has not slowed down and is still far above the level that is compatible with stability. Signs of a marked slowdown in productivity growth are also a cause for concern. Turnover has grown at a slower pace than last year and housing market activity has also decreased considerably. This is among other things the result of higher interest rates, partly because of the tight monetary stance. Poorer prospects for export production, the higher level of interest rates, lower share prices and growing burden of servicing a larger stock of debt, the greater tax burden and less general optimism will probably serve to dampen demand next year. Economic growth is therefore likely to slow down significantly, as has already been forecast. The fiscal stance has been tightened over the past two years and domestic demand would have expanded much more in the absence of tightening. In light of the robust domestic demand and wide current account deficit, it would in fact have been preferable to tighten the stance even further. Next year will witness a slight further tightening in fiscal policy. Following the increase in interest rates on November 1 the monetary stance is quite tight and will remain so until clear signs emerge that the economy is cooling down, and the basis for price stability has improved.

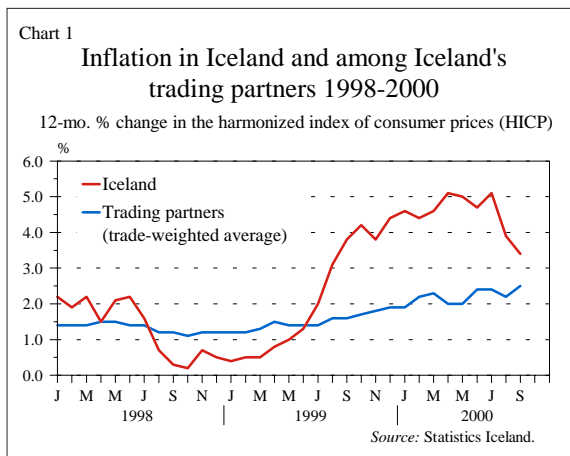
Inflation slows down with the decreasing impact of housing and petrol price rises

Inflation has slowed down somewhat over the past three months measured in terms of the 12-month rise in the CPI. After peaking at 6% in April, inflation was 4.2% at the beginning of October. However, month-on-month price changes have shown sharp

fluctuations. For example, the CPI fell by half a percent in August but rose by 1% in October. In part these swings may be attributed to seasonal price adjustments, for example sales of clothing, which can shift between months. Thus there are reasons to caution against over-interpreting the monthly price changes.

At the same time as inflation has slowed down somewhat in Iceland, it has been accelerating among

1. This article uses data available on November 1, 2000.



the main trading partner countries. In September the CPI had risen by 2.8% over a 12-month period in the euro countries, and by 3.5% in the USA. At the same time, inflation ran at 4% in Iceland, but only 3.4% if measured by the criteria used in the euro countries.² Among Iceland's trading partners, inflation averaged 2.5%. Thus the gap between Iceland and its trading partners has narrowed considerably over the past months, as shown in Chart 1.

The main reason for the recent deceleration in inflation is that prices of components of the CPI which have had the most impact over the past two years, namely housing and petrol, have risen at a somewhat slower pace recently than during the first half of this year and all last year. However, increases in housing and petrol prices still account for a large share of inflation over the past 12 months. Although the rise in housing prices is slowing down, it is still fairly rapid. The annualised rise in prices of residential housing in the Greater Reykjavík Area over the period from May to August measured 8.5% compared with 17.5% over the corresponding period last year and 15% over the twelve months until the end of August.

Petrol prices have also been stabilising. In fact, petrol prices on the whole showed a slight drop from July to October, despite an increase in October, and now account for less than ½% of the rise in consumer prices over the previous 12 months, compared with

1% a year ago. Petrol prices rose at the beginning of November and are now close to their earlier peak. The most recent rise is difficult to explain in terms of higher prices abroad and appears to be a response to domestic cost changes or a higher mark-up. Although petrol price fluctuations will undoubtedly continue, there is little to suggest that they will be as sharp in the near term as during the past year and a half.

At the same time as the impact of housing and petrol prices on the CPI is diminishing, rising prices of domestic services are exerting a growing impact. Excluding public services, these have risen by 6.6% over the past year and now account for almost as large a component of inflation as housing prices, or 1.3% of the rise in the CPI over the past 12 months. This development need not come as any surprise, since services are generally labour-intensive and tend to face limited foreign price competition, which makes them particularly sensitive to changes in domestic costs.

It is interesting to examine the development of prices of imported goods in light of the fluctuations which have characterised the exchange rate of the króna and relative exchange rates of foreign currencies during the year. In September, the króna had depreciated on average by around 4% since December 1999 and 5.5% since April, when it was at its strongest. In October the króna weakened still further. The appreciation which took place early this year does not seem to have had a major effect on price developments during the year, and in some cases prices moved in the opposite direction to exchange rate trends. If market agents regarded the appreciation of the króna until spring as a temporary phenomenon, this may have reduced its price impact, since price alterations invariably entail certain costs. By the same argument, the impact of this summer's depreciation may have been lessened as it only cancelled out previous appreciation which in any case had not been incorporated into consumer prices. It should also be pointed out that relatively little change has taken place in the króna-euro rate, with correspondingly little effect on the price of goods imported from the euro area. The sharp depreciation against the dollar, on the other hand, has had a direct impact on petrol prices, which are denominated in dollars in world markets, and there is no competition from the

2. The difference results in particular from the fact that increases in housing prices are not presented in the same way in the harmonised CPI for the European Economic Area.

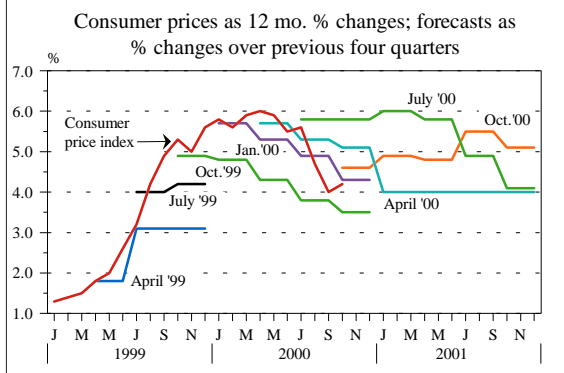
euro countries to impose restraint in the petrol market as in the case of various other commodities.

As pointed out in previous *Monetary Bulletins*, price developments for imported foodstuffs during the second half of 1999 were very much out of alignment with currency movements and foreign price trends. The rises which took place in the price of imported foodstuffs then, despite the appreciation of the króna, have now to some extent been levelled out. Prices of imported foodstuffs in October were similar to a year ago, although with the qualification that the sharp rises of just over a year ago are no longer reflected in the 12-month change in the index. Prices of imported motor vehicles and other imported goods, apart from petrol, are also similar to a year ago. In fact the price of imported motor vehicles dropped temporarily last summer, perhaps partly also due to a reduction in import levies on larger vehicles. Although a change in the pattern for seasonal fluctuations in clothing prices may have affected the most recent measurements, the impact of summer sales should now have levelled out. Clothing prices in October were back to the level before sales began, so the weakening of the króna in the summer apparently did not push prices up beyond the pre-sales level once the sales came to an end.

The slowdown of inflation in August and September was somewhat more marked than the Central Bank had assumed in its forecast in the August *Monetary Bulletin*. Then a rise of 1.8% in the CPI was forecast between Q2 and Q3, but the increase turned out to be 0.5%. Part of the forecasting error may be due to underestimating the impact of summer sales of clothing, coupled with the fall in petrol prices. But much of the discrepancy is difficult to explain in terms of erratic behaviour of specific components. Despite the Q3 overshooting, the average forecasting error over the period from Q1 1999 to Q3 2000 was -0.06% per quarter, since the Bank had underestimated inflation during the preceding quarters.

Is the slowdown in inflation since April permanent, or is this to some extent a temporary effect? This question can only be answered conditionally. If the króna remains stable, it must be considered fairly likely that the biggest housing and petrol price upswing is over. Indications from the housing market suggest that demand is showing some tendency to

Chart 2
CPI and Central Bank inflation forecasts 1999-2001



ease off, since housing prices are already high in a historical context and the yield on housing bonds has risen considerably from a year ago. However, housing prices could continue to rise for as long as employment prospects do not deteriorate, wages increase in real terms and migration to the Greater Reykjavík Area continues at the present pace. Housing prices have now risen in real terms by around 30% since 1997. There have been instances of similar or even larger upswings in real property prices in the space of a few years, for example in Scandinavia, the UK, Japan and other countries towards the end of the 1980s and in Ireland in recent years. In all these cases the surge in housing prices was caused by severe economic imbalances and was largely or even completely reversed during subsequent periods of consolidation or crisis (with the exception of Ireland, where the upswing is still going on). It is difficult to foresee when or how quickly such a turnaround will happen, but when it does inflation could decelerate quickly provided that other factors remain stable. The main uncertainties about price developments in the near term involve the exchange rate of the króna and wage developments. As far as the exchange rate is concerned, there are opposing forces at work. A tight monetary stance contributes towards keeping the króna strong, but growing downward pressure on the exchange rate results from the unsustainable large current account deficit, deteriorating growth prospects and inflation which is higher than among trading partner countries. The financing of the deficit could prove increasingly problematic as it drags on.

A survey of the public's inflation expectations was conducted in September.³ On average, respondents expected a rate of inflation of 4.5% over the next 12 months, compared with 5.4% in a survey conducted in May. The general public's expectations therefore appear to be in line with those of market agents, which perhaps suggests that the public is well informed. However, its assessment of the prospects for inflation may largely be determined by their assessment of inflation in the past, which was very similar.

Inflation forecast: Inflation will only slow down next year if the króna strengthens or demand pressure eases off faster

The inflation forecast presented here shows signs of having been made following a sizeable depreciation of the króna. As a general rule, Central Bank forecasts assume an unchanged exchange rate from the time they are made, in this case November 1. There are two reasons for this technical assumption. Firstly, experience shows that forecasts of short-term exchange rate changes are of little use when the exchange rate is largely determined by market forces, so the status quo is generally the safest bet. Secondly, the Central Bank does not want to signal its conceivable foreign exchange market operations or interest rate actions through its inflation forecasts, over and above the target range laid down by exchange rate policy ($\pm 9\%$ from a central rate). Because the króna has been falling in recent months, notwithstanding a slight rallying at the beginning of this month, this technical assumption has produced some increase in next year's inflation compared with the August forecast. Offsetting this is the fact that the Q3 result was much better than had been expected, as mentioned earlier. Thus the CPI is now only expected to rise by 4.5% in 2000, as against the 5.6% forecast in August. This implies that the annual average inflation will be virtually unchanged from this year, or 5.1%. An increase of 4.6% is assumed from the beginning to end of next year, or roughly the same rate of inflation as this year. In the final quarter of 2001, some deceleration is expected, bringing inflation down to 3% towards the end of 2002.

3. This survey was conducted by PricewaterhouseCoopers on behalf of the Central Bank of Iceland.

Table 1 Inflation forecast of the Central Bank

<i>Quarterly forecast</i>				
	<i>Percentage change from previous quarter (%)</i>	<i>Index</i>	<i>Annualised quarterly change (%)</i>	<i>Change from same quarter of previous year (%)</i>
2000:1	1.1	196.0	4.3	5.8
2000:2	1.4	198.8	5.9	5.7
2000:3	0.5	199.8	2.1	4.5
2000:4	1.5	202.8	6.1	4.6
2001:1	1.3	205.5	5.4	4.9
2001:2	1.4	208.4	5.7	4.8
2001:3	1.2	210.8	4.8	5.5
2001:4	1.1	213.1	4.4	5.1

<i>Annual forecast (%)</i>		
<i>Year</i>	<i>Year on year</i>	<i>Within year</i>
1997	1.8	2.2
1998	1.7	1.3
1999	3.4	5.8
2000	5.2	4.5
2001	5.1	4.6
2002	3.6	3.1

Shaded area indicates forecast.

Along with a stable exchange rate, this forecast assumes wage increases of just over 7% this year and just over 5% next year. This implies some easing of wage drift next year compared with this year's figure. Productivity is also expected to grow at a rather slower rate than in recent times, or around 1% annually for the next two years.

Based on the above assumptions, the outlook is for inflation to remain considerably higher in Iceland than among its main trading countries for the time being, and unacceptably so. Wage developments are largely determined by wage agreements which have

Table 2 Main assumptions of the inflation forecast

<i>Percent change over year</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>
Contractual wages	5.3	3.8	3.7
Wage drift	2.0	1.5	1.0
Domestic productivity	2.0	1.0	1.0
Import prices in foreign currency terms	3.0	2.5	1.5

already been made, so a considerable improvement in price developments from the base forecast can hardly be expected, unless the króna appreciates relative to the exchange rate assumed in it. Using the same assumptions made in the base forecast but allowing the exchange rate to strengthen by 0.7% from November 1 to the end of the year, 1.5% in 2000 and 2% the following year, inflation would be brought down to just under 4% at the end of next year and 2½% at the end of 2002, when it would be approaching the rate prevailing among Iceland's main trading countries.

A cause of concern is that it may not be realistic to assume that wage drift will remain stable or even ease next year. In order to assess this risk, it is useful to examine the results of a model which forecasts inflation and wage developments taking into account demand pressure and the employment level. On the assumptions made in the National Budget for 2001 about employment over the period 2001-2004, the model predicts wage increases of 11-12% in 2001-2002, and a rise in the inflation rate to just over 8% next year, then a slowdown in the following years. These calculations take no account of the wage agreements which have been made until the end of 2002 or beyond. Thus the results should not be taken literally. What they do underline is the risk of wage drift getting out of control if prevailing demand pressure is not soon curtailed, although influx of foreign labour could conceivably ease labour market pressure somewhat. On the other hand, if domestic demand pressure recedes faster inflation could slow down more swiftly in 2002.

The above analysis may be summarised as follows: Assuming a stable exchange rate, inflation will not slow down significantly from its present level until 2002. It would still be on the high side then, even towards the end of the period. There is a risk of higher inflation if the prevailing labour market pressure does not ease off. Offsetting this is the rise in the Central Bank policy rate on November 1 which could prompt some strengthening of the króna and/or a further easing of domestic demand from present assumptions. Inflation could then slow down somewhat more quickly.

Signs that turnover growth and housing market activity are slowing down

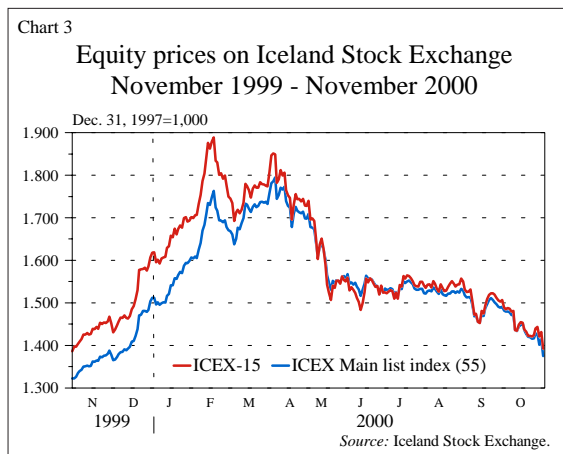
There are various signs that turnover growth has been significantly tailing off in various sectors during the first half of this year compared with last year. According to VAT returns, turnover measured at constant prices during the first half of this year increased by only 1½% compared with 7% last year. It should be borne in mind, however, that lower turnover growth is partly the result of less activity on the export side of the economy. For example, industrial turnover decreased by 2%, which can entirely be attributed to the fisheries. Thus lower growth in turnover does not necessarily imply an easing of domestic demand.

However, there are also unambiguous signs of slower demand growth, especially in private consumption. For example, retail turnover measured at constant prices declined by 1% from the first half of 1999 to the corresponding period this year. This contraction, which was particularly marked during Q1 this year, may nonetheless be partly temporary. During the first months of this year, real wages were lower than the year before and great uncertainty surrounded the wage agreements which may have had a temporary negative impact on consumption. Real wages have risen again since then and the employment situation has remained secure. There is still evidence of considerable growth in wholesaling. Turnover in the first-half of the year increased in real terms by just over 5% between 1999 and 2000. This is, however, only roughly half the increase recorded last year. Other signs point in the same direction. For example, the year-on-year growth in payment card turnover slowed down sharply from 11% for Q1, to only 4½% for Q2. Treasury revenues from VAT tell the same story. Revenue during the period January to August rose year-on-year by 4½% in real terms from same period the year before. Last year the corresponding figure was close to 16%.

Growth has not slowed down in all sectors of the economy. The growth of turnover in the construction industry in the first half of this year outstripped last year's growth, at 9½% compared with 2½% in the first half of 1999. Nonetheless, there are various signs of less activity in the residential housing market recently. For example, the volume of housing bonds issued for new buildings has decreased somewhat and in real terms the contraction is even greater.

Business profits declined somewhat in the first half, and share prices have fallen

The profitability of businesses can provide an indication of demand trends, especially investments, for the near future. In general, profits tend to fall during the late stage of an economic upswing. Slight evidence of this can be seen in statements of companies listed on Iceland Stock Exchange, for the first half of 2000. A qualification should be made that companies listed on the stock exchange do not represent a typical cross-section of the whole business community, since they are invariably the strongest ones. In fact it is noticeable, considering the reduction in VAT turnover growth mentioned above, that turnover by these companies was 28% greater during the first half of 2000 compared with the corresponding period the previous year. This is twice the rate of growth observed in the first halves of 1998 and 1999. However, this increase in turnover is to a considerable extent explained by take-overs, mergers and



purchases of other companies. In particular, listed fisheries companies appear to have grown at the expense of smaller ones in this sector. Turnover among listed companies is therefore not a reliable indicator of the growth of any sector as a whole. Mergers and acquisitions also make it difficult to interpret the profitability figures in financial statements. A take-over of a relatively unprofitable company, for example, could lead to lower short-term profit, although in the long run the benefits of synergy and rationalisation would be felt.

Operating profit (EBITDA) of companies listed on the ISE amounted to 6.8% of their turnover during the first half of the year. This is actually a fairly good performance considering the growth in turnover. Profit on regular operations was down, however, from 2.8% of turnover to 1.3%. The main reason is a considerable rise in financial expenses. The increase in financial expenses was to be expected following the wave of investments in the past few years, which to a large extent was funded by borrowing. In the period ahead, growth must be sufficient or rationalisation yield sufficiently large extra gross profits to match higher cost of servicing the debt. Should the plans for expansion fail to materialise or rationalisation yield smaller than expected benefits businesses may have to cut back on investments. Profit figures for companies listed on ISE still give no clear indication that a turnaround is close at hand. Profitability of the listed companies is still fairly good on the whole and in some sectors outstrips those of last year.

However, the fall in share prices during the year

Table 3 Financial results for companies listed on Iceland Stock Exchange¹

B.kr.	Jan.-June		% change '99-'00
	1999	2000	
Turnover	132.3	169.7	28.2
Gross profit.....	9.8	11.6	18.6
Depreciation	6.2	7.6	23.3
Financial expenses	0.0	-1.8	.
Profit on regular operations	3.7	2.2	-39.3
Profit before taxes	5.5	2.8	-48.9
Taxes.....	-1.6	-1.1	.
Profit after taxes	3.9	1.7	-56.2
Total assets	280.0	336.4	20.1
Cash flow	7.5	7.5	0.0
Long-term debt.....	95.2	112.1	17.8
<i>Financial ratios (%):</i>			
Gross profit/turnover	7.4	6.8	.
Profit on reg. op. before taxes/turnover	2.8	1.3	.
Profit/turnover	2.9	1.0	.
Equity ratio.....	33.6	30.2	.
Return on total assets	2.6	2.4	.
Return on equity.....	8.2	3.3	.
Turnover/total assets	94.5	100.9	.

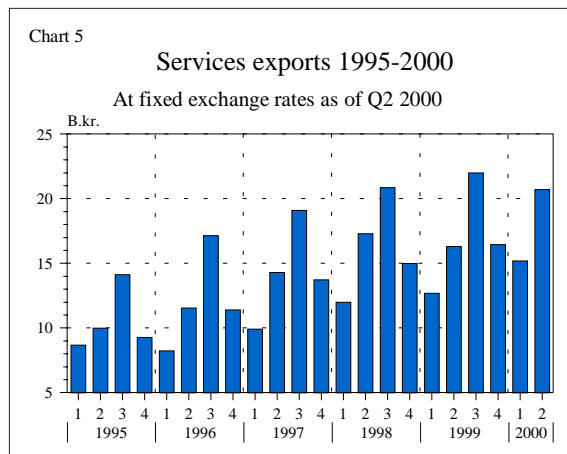
1. All listed companies except in finance and insurance sector.

clearly reflects disappointment in the market regarding profits in the first half of 2000. While buoyant share prices during the first months of the year may above all have reflected over-optimistic expectations among market participants, the fall implies that the source of cheap risk capital has to some extent dried up. Thus the slump in share prices could have a negative impact on investment. It may also reduce consumption through the “wealth effect.”

The growth of merchandise imports was similar to a year ago, but higher oil prices and sluggish exports caused the merchandise trade deficit to widen

Although domestic demand growth has slowed down, the current account deficit has continued to widen this year. Both the merchandise and service accounts have deteriorated from 1999. The current account deficit in the first half of the year amounted to 33.5 b.kr. compared with 22.6 b.kr. during the corresponding period last year. Of the total increase in the deficit of almost 11 b.kr., 7.8 b.kr. was on the merchandise account and 3.1 b.kr. on the service account.

Merchandise trade data are now available for the first nine months of the year. The deficit amounted to 28 b.kr., compared with 19 b.kr. during the corresponding period last year. There are two main explanations why the deficit has widened in spite of slower domestic demand growth. Firstly, exports have been sluggish so far this year. The value of fisheries exports contracted somewhat, as a result not only of poor catches, especially during the first months of the



year, but also falling export prices for fisheries products. In fact this was counteracted by fairly strong growth in manufacturing exports, leaving exports virtually unchanged in volume terms and producing a slight increase in value, by just under 3%. Secondly, a large increase in the price of imported fuel pushed the nominal value of imports up more than volume. More than one-third of the year-on-year increase in import value in January-September can be traced to higher fuel prices. Substantial importation of vessels and aircraft, along with raw material for power-intensive industries, also played some part. Imports of consumer goods rose modestly, or by just over 1% in volume terms, although their composition changed somewhat. Imports of motor vehicles have fallen while imports of other consumer durables and semi-durables are still growing strongly.

Unlike merchandise exports, service exports have been characterised by rapid growth which appears to extend to all main areas: communications, tourism and other services. All the same, the service deficit grew, since the growth of imports outstripped export growth. First-half service exports grew by almost a quarter at constant prices, but imported services by almost a third.

Credit growth is still excessive

One of the clearest signs of overheating of the economy in the past few years has been the exceptionally rapid credit growth. The growth in lending this year has actually not been as rapid as around the middle of last year, but is still highly unsustainable. By the end of September, lending by deposit money banks

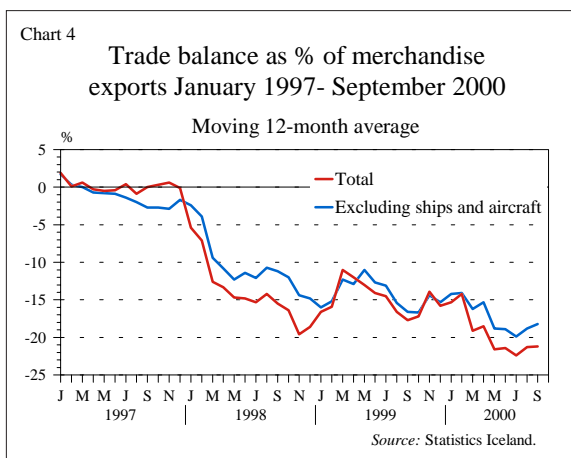


Table 4 Deposit-money bank lending and financing
June-September 1999 and 2000

	<i>Increase in b.kr. June-September</i>		<i>Percent breakdown of the increase (%)</i>	
	1999	2000	1999	2000
Lending	17.2	29.3	100.0	100.0
Deposits.....	6.1	5.0	35.5	17.1
Net securities.....	5.6	16.5	32.6	56.3
Net foreign liabilities ...	11.5	18.8	66.9	64.2
Central Bank, net	-0.9	-1.0	-5.2	-3.4
Other, net.....	-5.1	-10.0	-29.7	-34.1

had increased by 27% (including FBA in 1999) over twelve months. The growth of credit had even picked up speed from the spring, after some slowdown late last year. Over a two-year period, lending has grown by more than 50% in real terms. Excessively rapid growth in lending entails a variety of risks, both for the credit system and the economy as a whole (see article on Financial Stability on page 31). The quality of loans may deteriorate and credit institutions need to fund their lending in foreign markets to an increasing extent, since domestic saving does not meet demand. Foreign borrowing represents a currency risk for credit institutions and domestic borrowers. Over the period June to September, foreign borrowing was behind almost two-thirds of lending, a similar ratio to the same period in 1999. So far, indications of growing currency risk have clearly not deterred foreign borrowing. For as long as financial institutions and businesses they serve do not hesitate to enter foreign credit markets, the tight monetary stance will not be fully transmitted. Central Bank financing, which demands a higher rate of interest, has not contributed to funding credit growth. The development in recent months is shown in Table 4, curtailing the period this year to prevent figures from being distorted by the merger of Íslandsbanki and FBA. It shows that foreign credit continues to account for the lion's share of funding for the growth in lending, while net Central Bank funding is negative.

Data for lending by the credit system as a whole⁴ is available for the first half of the year. Total lending grew by somewhat less than that for the banks alone,

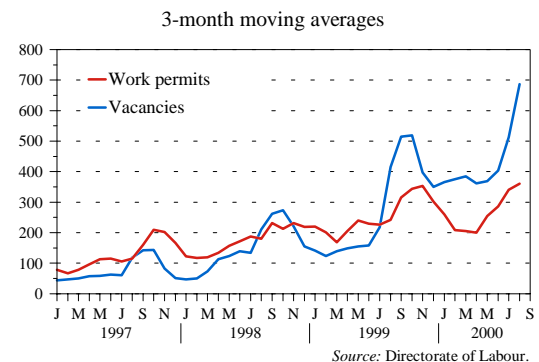
as has been the case in recent years, or 17% over the preceding 12 months. Lending growth had remained stable for around a whole year. Lending to businesses had increased by 26%, the same amount as in the same period in 1999. Lending to households had grown by 19%, which is a somewhat higher rate of growth than the preceding year, while lending to the treasury and government institutions decreased by almost a quarter in the space of 12 months.

Signs of mounting labour market tension, but wage drift still moderate

Despite signs of a slowdown in growth this year compared with 1999, tension continues to build up in the labour market. Unemployment has been steadily falling this year. In September it measured 0.9%, or 1.1% after seasonal adjustment. As unemployment falls, tension grows in the labour market, and perhaps more than proportionally. As the reserve of labour becomes nearly depleted, it becomes more difficult to find people with the requisite skills, education or experience. Growing numbers of vacancies at employment agencies give some indication of how much the pressure in the labour market has increased recently. Vacancies have surged in recent months. The same pattern occurred in summer 1999, but the numbers are larger now, and larger than at any time during the current expansion. The NEI's labour mar-

Chart 6

Work permits and listed vacancies 1997-2000



Source: Directorate of Labour.

4. In addition to the banks, the credit system comprises sectoral investment credit funds, the Housing Financing Fund, pension funds, insurance companies, leasing companies, securities houses and state loan funds.

Box 1 Revision of the national accounts

Iceland's national accounts have been revised on the basis of the ESA 95 standard which applies in the European Economic Area, and the new United Nations SNA 93 standard. Broadly speaking these standards are consistent with each other, although ESA 95 is in some respects more detailed. As a member of the EEA Iceland is committed to adopting European Union standards. The reform involves some movements between subcomponents of the aggregates, namely private consumption, government consumption and gross fixed capital formation, and the recording of central government pension liabilities has been changed as well. However, the revisions affect the measure of GDP only modestly. It measures slightly higher in the first half of the 1990s, by 0.2% to 1.2%, and 0.5 to 2% lower after that. The largest change is in 1999, which in fact partly involves a revision of preliminary figures.

Changes in the various components of GDP are substantially greater, in particular because of changes in the classifications of private consumption versus fixed gross capital formation. Private consumption thereby measures 2% to 5% lower during the first part of the period, and 6% to 8% in the second part. This reduces the share of private consumption from just under 63% of GDP to just under 59%, while gross fixed capital formation rises by 1.5% to 2.5%. The reduction in the share of private consumption has most significantly been affected by a change in classification allocating a larger part of expenditure on the operation of private cars to capital investment. Changes in

the classification of housing rent and consumption expenditure in restaurants and hotels also lead to a reduction in the share of consumption. Offsetting these changes is a new treatment of the activities of non-profit institutions.

Gross fixed capital formation increases by 9% to 14% after the revision. In addition to the abovementioned changes in the breakdown between private consumption and capital formation, software, which was previously recorded as intermediate consumption, is now counted as capital formation. Various tools and office equipment are also classified as investment rather than inputs. Commissions charged on property ownership transfers are now included in investment, and housing improvements are classified under capital formation.

The revision results in an increase in general government consumption expenditure of 4% to 5%, raising its share in GDP by ½% to 1%. Transport infrastructure is now depreciated under government consumption. VAT refunds to government entities in connection with the purchase of professional services are recorded gross under purchased services. Tools and office equipment are now counted as investment expenditure, thereby increasing capital formation, but subsequently depreciated under government consumption. Contributions to various cultural activities which were recorded as subsidies are now treated as government consumption. Central government pension liabilities, formerly recorded as government final consumption, are now split between interest charges and income transfers.

ket survey in September 2000 shows the same picture. Employers surveyed nation-wide wanted to increase their staffing by 630, more than in September last year, despite the fact that employers outside the Greater Reykjavík Area wanted to cut back by 390. Demand for labour is running highest in the construction industry and services. The survey therefore reveals that not only is demand for labour growing, but also the imbalance between the Greater Reykjavík Area and other parts of the country.

To a growing extent, Icelandic companies and institutions have been forced to seek foreign labour to fill various service and production posts. From January-September, 2,549 new and extended work permits were issued, compared to 2,047 over the cor-

responding period in 1999. Net migration to Iceland over the same period amounted to 1,122 individuals, mainly foreign nationals. This is marginally more net immigration than at the same time in 1999. A recent survey estimates the number of foreign nationals in Iceland at more than 7,000, around 2,000 more than three years ago. This immigration may have proved crucial for keeping the lid on labour market pressure.

Growth slows down, but the outlook for the current account deficit has deteriorated

The national economic forecast for 2001, on which the budget for the year is based, was presented in October. One of the main changes from the previous NEI forecast, published in June, involves higher

Table 5 Comparison of the National Economic Institute economic forecasts

Annual volume percent changes unless otherwise stated

<i>Publication month:</i>	<i>Oct.'97</i>	<i>Mar.'98</i>	<i>Oct.'98</i>	<i>Oct.'99</i>	<i>Oct.'00</i>	<i>Oct.'98</i>	<i>Mar.'99</i>	<i>Oct.'99</i>	<i>Oct.'00</i>	<i>Oct.'99</i>	<i>Mar.'00</i>	<i>June'00</i>	<i>Oct.'00</i>	<i>June'00</i>	<i>Oct.'00</i>
<i>Forecasting period:</i>	<i>1998</i>					<i>1999</i>				<i>2000</i>				<i>2001</i>	
Private consumption.....	5.0	5.5	10.0	11.0	10.0	5.0	6.0	6.0	6.9	2.5	4.0	4.0	4.0	2.0	2.6
Public consumption.....	3.0	3.0	3.0	3.7	3.4	3.0	3.4	3.4	4.9	2.5	3.5	3.5	3.5	2.5	3.0
Gross fixed capital formation	1.3	11.6	27.3	23.4	26.6	-10.0	-5.3	-0.1	-0.8	2.1	8.4	10.5	11.1	-3.5	-1.5
National expenditure	3.9	6.1	12.8	12.1	12.3	1.5	3.1	4.0	4.7	2.4	4.7	5.1	5.3	1.0	1.7
Exports of goods & services	4.6	3.1	1.5	2.4	2.2	8.5	8.2	8.3	5.5	2.6	1.8	0.9	2.6	-1.1	-0.9
Imports of goods & services	5.9	7.2	22.6	22.1	23.3	0.0	2.7	3.4	6.1	2.0	4.1	4.7	7.0	-2.0	-0.3
Gross domestic product.....	3.5	4.6	5.2	5.1	4.5	4.6	5.1	5.8	4.4	2.7	3.9	3.7	3.6	1.6	1.6
National income	3.7	4.7	7.1	7.7	6.7	4.1	3.1	4.8	4.6	2.7	4.0	3.7	3.6	1.2	1.6
Curr. account bal., % of GDP	-3.4	-2.9	-6.6	-5.7	-6.7	-4.0	-4.9	-4.6	-6.5	-4.2	-7.2	-7.8	-8.0	-7.2	-7.9
Inflation (between years)	3.0	2.7	1.5	1.7	1.7	2.0	2.4	3.2	3.4	3.9	5.3	5.5	5.0	4.5	4.0
Unemployment rate.....	3.6	3.6	2.9	2.8	2.8	2.7	2.0	2.0	1.9	2.0	1.7	1.7	1.5	2.0	1.8
Merchandise exports	5.0	2.8	-3.7	-2.1	-2.1	9.0	7.4	9.7	7.4	2.2	1.5	-0.2	1.0	-3.0	-3.1
thereof export production..	7.8	7.4	4.5	1.2	0.8	8.1	5.3	8.0	5.1	4.1	4.2	2.6	3.0	-2.6	-1.6
Merchandise imports.....	6.9	8.7	24.8	22.3	24.2	-2.0	5.0	2.1	5.0	0.9	3.8	4.7	5.7	-4.0	-1.8
thereof general imports	4.6	8.5	25.4	17.9	18.5	-0.4	3.6	0.7	3.6	-1.2	2.3	1.8	3.5	0.9	0.9
Current account bal. (b.kr.)	-6.3	-8.1	-28.2	-25.1	-25.0	-13.8	-22.4	-17.9	-22.4	-15.2	-27.0	-30.1	-32.6	-26.0	-32.3
Export of services.....	3.6	3.7	13.8	13.0	12.1	7.4	2.6	5.5	1.5	3.5	2.4	3.3	6.0	3.0	3.6
Import of services.....	3.2	3.4	17.4	21.5	21.1	5.2	9.5	6.7	8.8	4.5	4.7	4.7	10.5	2.9	3.4
Balance on services (b.kr.)..	-1.3	3.8	1.9	-0.5	-1.3	3.6	-5.5	-1.0	-5.7	-1.0	-5.5	-4.8	-7.9	-4.2	-8.1
Net factor income (b.kr.).....	-11.0	-12.2	-12.1	-6.9	-11.1	-14.3	-14.2	-9.9	-11.6	-12.2	-17.1	-23.0	-12.9	-23.0	-15.9
Curr. account balance (b.kr.)	-19.0	-16.9	-38.6	-33.5	-38.5	-24.9	-42.8	-29.3	-40.4	-28.9	-50.5	-54.7	-54.0	-53.8	-56.9

Sources: National Economic Institute and Central Bank of Iceland.

growth of external trade, especially on the import side. Imports are now forecast to increase by 7% from the previous year, compared with the 4.7% forecast in June. Despite the widening deficit on the trade in goods and services, a marginally narrower current account deficit is shown in nominal terms than forecast in June. This is entirely explained by a change in the methods for accounting for factor income, as discussed later. As a proportion of GDP, the deficit is projected to widen slightly to 8%. Recently, the NEI announced a review of its methods for compiling the national accounts, a summary of which is included in Box 1.⁵ As a result of these changes, capital formation as a proportion of GDP measures somewhat higher now, by almost 3% for

the past two years. All the same, this hardly changes the overall picture in comparisons with other countries, which have made similar accounting revisions. National saving is still very low at less than 16% of GDP, since the accounting changes do not affect assessment of the current account balance.

Because crucial decisions with far-reaching consequences for the Icelandic economy are based on the national economic forecast made in October, it is one of the most important economic forecasts every year. Thus there is good reason for making a critical evaluation of its reliability. The accompanying table presents a summary of NEI forecasts for 1998-1999. It shows that considerable changes are invariably

5. These reforms are explained in more detail in National Economic Insti-

tute press release no. 4/2000 from August 24 and in the National Economic Forecast for 2001.

made from the first forecasts until economic statistics for the year in question are broadly known.

As the Icelandic economy is quite open and susceptible to erratic external shocks, substantial uncertainty in forecasts is to be expected. However, a noticeable feature of forecasts from recent years is that the roots of uncertainty appear to lie in particular on the demand side. In fact, there has been a persistent tendency to underestimate the strength of domestic demand in recent years. In 1998-2000 national expenditure, especially capital formation but also private consumption, were hugely underestimated at the outset. Thus in 1998 capital formation grew by a quarter in excess of the first forecast, and 9% in 1999. The forecast underlying the National Budget for 2001 sees 11.1% growth in capital formation during the present year, compared with 8.4% in the March forecast and 2.1% in the one made in October 1999. Private consumption growth has also been significantly underforecast in recent years, especially in 1998 when it grew by 10%, twice the level originally forecast.

It is important to take this experience into account in drawing conclusions about future developments. Forecasting errors can stem from a variety of causes: Models used may be at fault, there may be a tendency to adopt over-pessimistic assumptions, or the use of discretion, which invariably affects the final outcome, may increase the error instead of enhancing the forecasts, as intended.⁶ Conceivably, robust demand growth in recent years is to some extent driven by structural changes in the Icelandic economy. Hence, statistical relationships estimated on the basis of historical data may no longer be fully applicable. It should be mentioned in this context that the OECD and IMF forecasts have turned out closer to the real outcome than the NEI's forecasts, although they too have underestimated the strength of domestic demand and the size of the current account deficit.⁷

6. On National Economic Institute forecasting see Tryggvi Felixson and Már Guðmundsson, "Athugun á efnahagsspám Þjóðhagsstofnunar fyrir árin 1974 til 1986". Fjármálatíðindi 35:1, 1988. See also Björgvin Sighvatsson, "Þjóðhagsreikningar og þjóðhagsspár í ljósi reynslunnar", Fjármálatíðindi 43:1, 1996.

7. The Central Bank has also made unofficial (unpublished) forecasts in recent years which have likewise indicated larger current account deficits and demand.

The repeated underforecasting of domestic demand prompts the question whether next year's forecast is cast in the same mould. In the present forecast, the expected growth of national expenditure has already been upped from 1% to 1.7% and the contraction in capital formation reduced from 3.5% to 1.5%. The current account deficit is forecast to amount to 7.9% of GDP, compared with 7.2% in the June NEI forecast, despite the fact that new accounting methods produce a smaller deficit than would otherwise be the case. Although the outlook for growth of domestic demand 2001 has already been revised upwards it should be borne in mind that the longer that economic imbalances persist, the probability of a turning-point which could even entail a drop in output increases. The timing of such watersheds is in general difficult, since to some extent it depends on the expectations of market players.

A soft or hard landing?

Following a prolonged period of imbalances, a return to a more balanced growth path is eventually inevitable. The question is whether this will be a soft or hard landing. In its medium-term scenario until 2005, the NEI projects a growth rate of GDP which, while remaining positive, will run below the economy's long-term potential for several years. Unemployment is expected to remain low. However, inflation is projected to slow down to around 2½% towards the end of the period. Notwithstanding slower growth, the current account deficit is expected to persist and the accumulation of external debt to continue. In this scenario, net external debt will rise rapidly to reach 85% of GDP at the end of next year and 100% at the end of the period. An underlying assumption is that private saving will continue to decline, which may be doubtful over such a long period.

In short, external imbalances are expected to persist, despite the approach towards internal balance. Hence "soft landing" is not quite an appropriate term, since a landing, in the sense of a return to sustainable economic growth, is not visible during the period in question. The adjustment needed in order to achieve sustainable external balance has in effect been postponed beyond 2005. For such large external imbalances to persist for as long as projected in the medium-term scenario would be exceptional, as will be discussed later, although perhaps not inconceiv-

Box 2 Measuring the output potential of the economy

The output potential of an economy is defined as the level of output consistent with full utilisation of all production factors. Potential output is therefore determined on the production side of the economy, i.e. by its capital stock, labour use and available technology. Consequently, potential output is determined by how successful the economy is in utilising these factors of production.

In the short run, aggregate demand of the economy can cause it to operate at a production level different from its potential. If the level of output is above capacity, a positive output gap develops which is reflected in excess demand for goods and labour. Eventually the positive output gap forces up wages and prices, causing inflation to rise. An economy operating below its output capacity, on the other hand, develops a negative output gap which, all things being equal, eases inflationary pressures.

Potential output plays an important role in assessments of the medium-term economic outlook and in implementation of economic policy, including monetary policy. Economic growth which is caused by increasing output capacity, for example when new technology boosts productivity, need not necessarily put pressure on prices. Demand-driven growth which generates a positive output gap, on the other hand, poses a risk of accelerating inflation. Demand-driven growth in excess of long-term growth capacity need not, however, necessarily lead to higher inflation if there is slack in the economy, i.e. if underutilised factors of production are available. Thus, potential output and the cyclical position of the economy are among the key assumptions in assessments of the medium-term price outlook.

The problem, however, is that potential output cannot be observed from available data. Potential output and the output gap therefore need to be estimated using statistical methods. Output gap assessments are therefore subject to a high degree of uncertainty. Various methods have been suggested and the outcomes from several of them are presented here. In all cases it is assumed that actual output can be divided into a trend and a cycle part. Previously, the trend was commonly treated as a fixed time trend. The problem with that method is that potential output is forced to grow at a fixed growth rate and therefore cannot decrease. It also assumes that all shocks are temporary, despite the fact that most economists today agree that many shocks have permanent effects on potential output.

This method has therefore largely been abandoned.

The Hodrick-Prescott (HP) filter represents an attempt to solve these problems and is also very simple to apply. Instead of assuming that potential output grows at a fixed rate, it allows for a more flexible growth rate. However, the growth rate tends to be very smooth. The main problem with this method is that estimation of trend output involves the use of future as well as historical data. Thus it is not particularly suitable for forecasting potential output. The end-point estimates also tend to be highly sensitive to forecasts of future values.

Another method is based on using a production function for the economy.¹ This usually involves a Cobb-Douglas specification of the production function

$$(1) \quad Y_t = A_t N_t^a K_t^{1-a}$$

where Y_t is the output level of the economy at constant prices, A_t is total factor productivity of the economy (i.e. aggregated productivity of labour, capital and other factors of production), N_t is labour input and K_t the capital stock, while a is the share of wages in the total value added in the economy and is assumed to be constant over time (using the value 65% which is roughly the average wage share over the period).

In estimating potential output, total factor productivity represents the share of output not explained by the production factors in equation (1). The HP-filter is then applied to A_t to derive the trend process for total factor productivity. The actual capital stock is generally used, since it is very smooth and the HP-filter would yield virtually the same process. However, many methods can be used for assessing the labour trend. The simplest is to apply the HP-filter to actual labour input. Another approach would be to divide the labour supply into its components

$$(2) \quad N_t = H_t L_t (1 - u_t)$$

1. Further approaches can also be used for estimating the output gap. These include multivariate time series analysis (see, for example, Box 1 in Monetary Bulletin 2000/2) and state of space models (see e.g. the article by Lúdvík Elfasson (1998), "Mæling á íslenskri hagsveiflu á ársfjórðungsgrunni" [Estimating the Icelandic Business Cycle at Quarterly Frequency], Central Bank of Iceland Economics Department, unpublished manuscript). These and other methods are being developed at the Economics Department to enable regular publication of output gap figures for Iceland.

where H_t is the participation ratio, L_t is the number of individuals of working age (15-64) and u_t is the unemployment rate. Actual data for the participation rate and working age population are generally used, since both series are quite smooth.² An attempt is then made to measure the underlying unemployment level in the economy, i.e. the level which is consistent with constant inflation (known as the natural rate of unemployment or the non-accelerating inflation rate of employment, NAIRU). This concept is closely connected with potential output since both are linked to the location in the business cycle corresponding to zero pressure on inflation. Estimation of this equilibrium unemployment rate is subject to the same uncertainty as estimation of potential output. One approach would be to apply the HP-filter to actual unemployment. Another possible approach would be to use an unemployment rate thought to reflect the underlying structure of the domestic labour market. Here, NAIRU is assumed to be 2.5%. An unemployment rate of less than 2.5% means that the labour market is subject to pressure, while unemployment of more than 2.5% means that labour is underutilised.

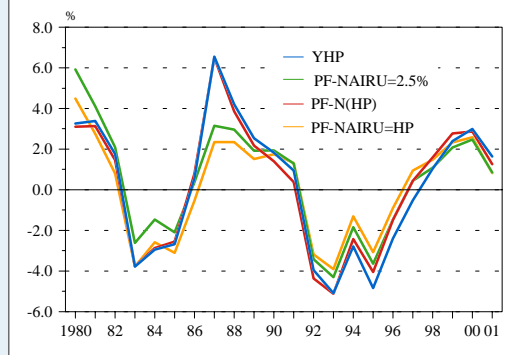
Chart 1 shows different assessments of the output gap in Iceland over the period 1980-2001.³

1. Potential output estimated by applying the HP-filter to Y_t (YHP)
2. Based on the production function approach, applying the HP-filter to N_t (PF-N(HP))
3. Based on the production function approach, with NAIRU = 2.5% (PF-NAIRU=2.5%)

2. The drawback is that it assumes all changes in labour participation to be permanent, for example the increase in 1987 and in the past few years.

3. The underlying trends are estimated using data for the period 1963-2005 to minimise the impact of the end-points. The data source is the National Economic Institute.

Chart 1
Different measures of the output gap



4. Based on the production function approach, with NAIRU estimated with the HP-filter (PF-NAIRU=HP)

As the chart shows, alternative methods yield different estimation of the output gap, although the business cycle development is quite similar. The greatest divergence is in 1987 where two methods assume that only part of the increased labour participation was permanent while the others assume it to be entirely permanent. Considerable slack was present in the economy over the periods 1983-1985 and 1992-1996. Actual output, however, has been in excess of potential since 1998. The output gap peaks this year, ranging from 2½-3%, depending on the method used.⁴ According to this assessment and the underlying National Economic Institute forecast, the output gap will disappear in 2002-2003.

4. If the increase in labour participation in recent years is permanent, the lower figure can be expected to be more realistic. If it is only partly permanent, the higher value is probably more accurate.

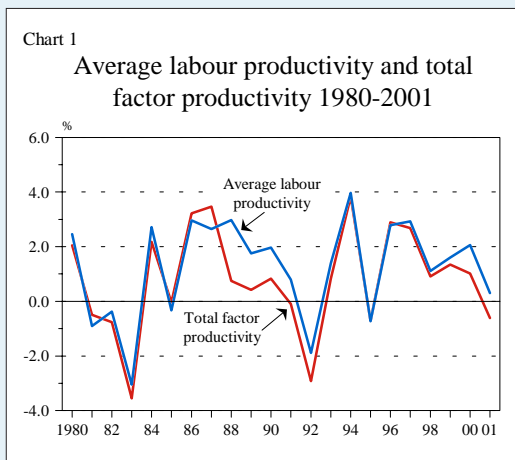
able. In any case, the net foreign asset position would deteriorate to such a degree that a decline in the equilibrium real exchange rate of the króna would have to be assumed, unless exports rose for unforeseeable reasons. Postponement of adjustment might therefore also imply a more abrupt adjustment, when it finally happens.

The presentation of internal economic balance in the medium-term scenario from the National Budget

may also be questionable. Unemployment is forecast to be 1.8% next year, which is below reasonable estimates of the NAIRU. Even though unemployment is expected to climb slightly and pass 2% over the period 2000-2005, it is rather doubtful that inflation will remain as low as projected, given the low rate of unemployment. As long as the present tensions in the labour market continue, there is a serious risk that wage drift will gain momentum. Labour market ten-

Box 3 Productivity developments in Iceland

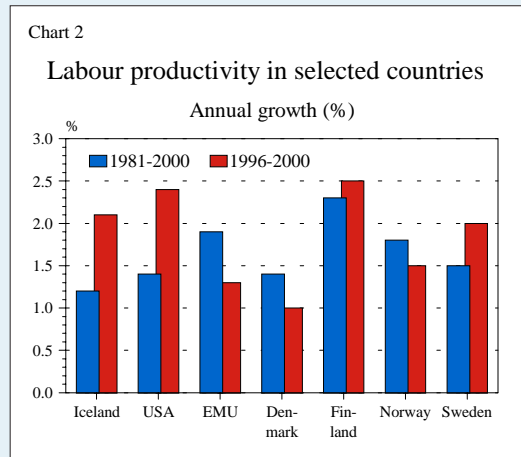
It is often argued that advances in information technology and telecommunications (sometimes referred to as the “new economy”) have led to much greater productivity growth during the current upswing in the USA than in previous decades. This has enabled the US economy to grow much faster than before without generating inflationary pressures. It is worth examining whether there are any signs of a similar pattern in Iceland. Chart 1 shows productivity developments in Iceland over the past twenty years.



As the chart shows, productivity grew fairly rapidly in Iceland at the start of the present upswing in 1996-1997. As the business cycle comes to its latter stages, however, productivity growth has been slowing down. This is consistent with the features of typical business cycles, activating an ever-increasing part of the labour force, rather than a technology-driven boom of the type under a strong impact from the “new economy”.

The chart also shows measurements of total factor productivity in the economy (see Box 2). As can be seen, growth in total factor productivity has closely matched average productivity of labour for the bulk of the period. However, average growth of productivity of labour ran higher at the end of the last decade and again during the past 2-3 years on account of a heavy buildup in the capital stock.

Chart 2 shows how productivity growth in recent years has been running above the average for the past two decades. A similar development has taken place in other



countries. On this scale, Iceland’s productivity growth has ranked with the highest recorded anywhere.

Since measured productivity is strongly influenced by the business cycle it is difficult to use it to assess the underlying productivity trend in the economy. In such cases it is more natural to focus on the economy’s output capacity. Measures of potential output are described in Box 2. Using an average of estimated potential output reveals the following development.

There has been relatively weak growth in underlying productivity of labour and total factors over the past two decades, as the accompanying table shows. Underlying productivity of labour has apparently grown by an average of 1½%, but total factor productivity by 1%. Faster

Productivity developments in Iceland
(annual growth in %)

	1971-1980	1981-1990	1991-2000	1996-2000
Labour productivity	3.7	1.0	1.4	2.1
Labour productivity trend	2.7	1.2	1.3	1.4
Total factor productivity	2.8	0.6	1.0	1.8
Total factor productivity trend	1.8	0.9	0.9	1.0

Labour productivity trend is obtained by using the average of potential output measures and labour demand as in Box 2. Total factor productivity trend is obtained by an HP-filter (see Box 2).

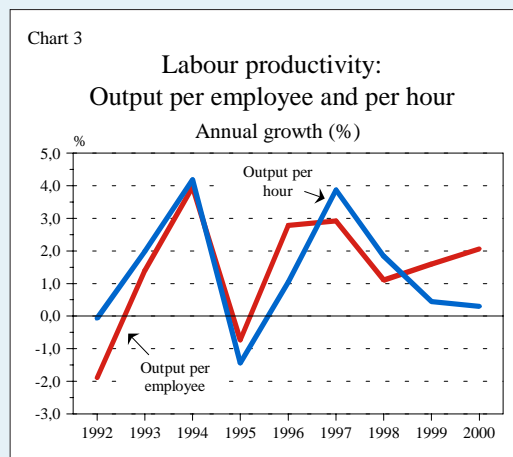
productivity growth has therefore been recorded in recent years than is consistent with the underlying growth potential of the economy.

The same pattern seems to emerge from output per hour worked, which showed strong growth during the first years of the current upswing but has been slowing down somewhat over the past two years.¹

Output per hour worked grew on average by 1½% over the period 1996-2000. In the USA, on the other hand, output per hour worked rose by an average of 2½% at the same time. According to estimates for the period 1999-2000, output per hour worked is expected to grow by less than ½% each year in Iceland, but by 3% in the USA.

Thus the “new economy” is hardly making its presence felt in productivity growth in Iceland so far. Nonetheless, the trend resembles that elsewhere, apart from countries such as the USA, Finland and Ireland. What makes Ice-

1. Data for working hours per week are based on the Statistics Iceland labour market surveys. In spite of familiar shortcomings, this survey should present a good picture of the development of hours worked over a longer period.



land’s relatively low productivity growth per hour worked over the past two years a particular cause for concern is the intense pressure in the domestic labour market, which has led to large increases in wages. If productivity growth fails to keep pace with wage rises, there is a risk that inflation will prove more difficult to keep under control.

sions by no means seems to be on the wane. Labour-intensive projects are in the pipeline in the Greater Reykjavík Area and elsewhere. Public sector wage negotiations could crank pressure up even further. Excess demand can be expected to peak during the current year with output in the range 2-3% above long-term potential (see Box 2). On the NEI’s assumptions, internal balance will be restored in the period 2002-2003. The question remains, however, whether this will come too late to avoid a wage-price spiral. In order to avoid that, it may be necessary to accept a temporary fall in output below potential.

Such an adjustment could conceivably occur automatically to some extent. NEI projections imply that national saving will keep on declining in the coming years, despite substantial saving by the public sector. After measuring 19% of GDP at the beginning of the 1990s, national saving dropped to 16% of GDP last year and is expected to fall still further until 2005. Shrinking saving is entirely explained by a drop in private saving. There are grounds for doubting that this will actually happen, since it implies that households will continue to finance consumption by accumulating debt. In fact, household debt has been growing rapidly this year, at a faster pace than in the

preceding years. Household debt is projected to grow by 19% in nominal terms from last year to reach 163% of disposable income, which is a 17% higher proportion than in 1999. Thus there is at present no evidence that household debt accumulation is moderating, despite the considerably higher estimated debt servicing burden.

Higher rates of interest, however, encourage households to cut back on borrowing and repay debt. The heavier burden of servicing the debt, caused by both growth in the debt stock and rising interest rates, demands that consumption will grow more slowly than disposable income in the course of time. From the mid-1990s until last year, the cost of servicing household debt rose from roughly 20% to 30% of disposable income. This year it may be expected to rise to 35% of disposable income and continue to rise in the following years. The timing of a turnaround is difficult, but eventually private consumption will come under increasing pressure. Once it happens the adjustment may be rather sudden, for example when unemployment starts to rise again or if interest rate rises sharply. Household debt, however, is offset by substantial assets, but the lack of data leaves the extent difficult to assess. For example, ownership of

securities has grown significantly in recent years. but if large-scale selling of such assets by households took place it would hit their prices. Share prices have slipped considerably this year, which may dampen consumption.

According to the NEI forecast, capital formation will contract somewhat next year with the completion of work on the Nordural aluminium smelter. From 2002-2004, a further contraction is foreseen in industrial investment, but will be partially offset by greater investment in residential accommodation. Capital formation is sensitive to changes in the interest rate, exchange rate and expected growth. Moreover, substantial uncertainty surrounds potential large-scale investment projects. As in the recent past capital formation may show large fluctuations in the coming years. On the one hand, high rates of interest could spark a much sharper contraction in investment than is currently expected, and exchange rate fluctuations could have a strong effect on the investment of companies which recently have funded investments with foreign or foreign currency-denominated loans in recent years. On the other hand, investment in power-intensive industry and hydropower projects could just as easily be stepped up. If the construction of the Noral smelter is realised as provisionally planned, a strong impact could be felt in 2002 and construction activity would peak in 2005.⁸ If no major construction projects are launched for power-intensive industries in the next two years, however, domestic demand could conceivably shrink by more than currently forecast.

A slowdown in domestic demand growth or even a contraction could contribute to a narrower current account deficit than in the NEI projections, although this landing would be far from soft. Nor is it possible to rule out higher export growth than is currently assumed. Exports of various manufactured and technological goods have been quite brisk recently. Service exports, including know-how-based sectors, also look promising. Some indication of the scale of the impact from the growth in these sectors can be seen from the fact that exports of goods and services in the first half of 2000, excluding power-intensive

industries, were more than 7 b.kr. higher than during the corresponding period in 1999, while exports of marine products were down by just under 4 b.kr. The growth of services and emerging companies in the industry and technology sector thus prevented a contraction in merchandise exports. However, it should be borne in mind that robust exports may to some extent be matched by sharp growth in service imports, so that the net contribution to the current account balance might not be as large as it appears. A further qualification is that the growth of emerging exports has been rather volatile in recent years. The emerging export sector therefore does not seem to have sufficient impact to change the outlook substantially and offset the fairly bleak prospects for exports of marine products in the near term.

There has been some discussion about whether the impact of the “new economy” is being felt in Iceland and elsewhere. In some quarters it has been argued that accelerating productivity growth could ease inflationary pressure and relieve tension in the labour market, and help to boost exports and narrow the current account deficit in the course of time. No in-depth analysis has been made of this topic in Iceland, but it will be covered more extensively later in *Monetary Bulletin*. Preliminary studies, however, have not revealed an above-normal rate of growth in productivity, so far at least (see Box 3), although various instances of the growth of know-how-based industries can be cited in Iceland. Thus it is imprudent to depend on such notions when formulating a strategy to tackle the problem that the economy currently faces.

How much of a problem is the current account deficit?

As repeatedly stated in the *Monetary Bulletin*, the Central Bank views the current account deficit as one of the major threats to economic stability in the years to come. A correct analysis of its nature and scope is vital. Opinions are divided, however, about how to measure the deficit. In its forecast for 2001 the NEI introduced a new method for assessing factor income from abroad. Earlier this year, the Central Bank changed its accounting method to bring it as closely as possible into line with international standards. The Bank has decided to adhere to a strict interpretation of these standards, since the NEI’s method distorts

8. See: Report of the Working Group on The Impact of the Noral Project on Iceland’s Economy and Infrastructure, National Economic Institute, October 2000.

Box 4 Iceland's current account deficit in an international context

Broadly speaking, large and persistent current account deficits have originated from three sources: Firstly, fiscal mismanagement; secondly, external shocks; and thirdly, overheating in the private sector following the deregulation of the financial sector and international capital movements.

One of the most common causes of heavy current account deficits among the OECD countries in recent decades has been public sector deficits. Treasury deficits, for example, were the main cause of the large current account deficit in Greece from 1979-86, Ireland from 1976-85 and Portugal from 1980-83. A typical scenario then was burgeoning public sector outlays during an economic boom which the government failed to counter with a corresponding cut in spending when setbacks occurred. The consequence is a growing public sector deficit which fuels the current account deficit. When the situation gets out of hand, a hard landing is necessary, producing a contraction. This was by and large the sequence of events in the above cases.

External shocks have been another main cause of wide current account deficits in OECD countries in past decades. These, for example, were the root of New Zealand's large deficit from 1974-78, when its terms of trade deteriorated by more than 40% in the space of two years. The collapse of export markets in the Soviet Union and unfavourable terms of trade developments played a major role in Finland's large current account deficit over the period 1989-92, although overheating of the economy was also involved for the first part of the period. Both countries experienced deep depressions afterwards. External shocks were the simultaneous cause of both a current account deficit and an economic downswing, but in Finland the depression proved deeper than otherwise would have been the case, because significant imbalances had already developed before the shocks struck.

Recent heavy current account deficit periods are more difficult to analyse, since they have only originated in fiscal mismanagement and external shocks to a much lesser extent. Thus the sustained deficits in Mexico from 1991-94, Thailand from 1990-97 and the Czech Republic from 1996-97 were apparently largely sparked off by overheating

of the domestic economy whose roots lay in large-scale investment and capital inflows prompted by strong investor confidence in these countries. In all three cases investors suddenly lost their faith in these economies and began withdrawing their capital. External conditions proved crucial, however, insofar as low interest rates in the industrialised countries first prompted large capital inflows which rebounded when interest rates rose again and conditions in the investment target countries became shakier. Weaknesses were present in economic policy management in these countries then, but hardly serious enough to merit such consequences. It should also be pointed out that in the cases of Mexico and Thailand their real exchange rates were seriously distorted before the currency crisis struck. The Thai baht, for example, was pegged to the US dollar, even though the country conducted most of its trade with Asia. Over the eighteen months before the currency crisis struck in Thailand the dollar strengthened by 50% against the yen, hitting the competitiveness of Thai companies hard. These countries' current account deficit periods came to an end with currency and bank crises accompanied by a sharp contraction in the economy.

In the instances described above, sustained current account deficits ended in a serious crisis or at least a contraction.¹ This is not absolute, however. One example of a benign current account deficit was in Norway from 1975-1978, equivalent to more than 7% of GDP then and peaking at 12% in 1978. The deficit was caused by large-scale capital formation in the oil industry. Once the oil industry had been developed the current account deficit narrowed very fast and since that time Norway has shown a surplus on average, since the investment has yielded substantial export revenues.

1. To show the scale of the difficulties they encountered, real income fell in Greece by 20%, unemployment rose by 10 percentage points in Ireland from 1980 to 1987, in the Czech Republic from just under 5% to almost 9% from 1997-1999 and in Finland from 3.5% to 18% within the space of a few years. The crisis struck Finland the hardest, cutting GDP by 15%. In Mexico economic growth shrank by almost 7% in 1995.

comparisons with other countries.⁹ Measured using the Central Bank's accounting methods, the current account deficit this year would be 1% of GDP higher than the NEI figure.

The nature of the current account deficit in recent years has differed in a number of ways from earlier ones. For a start, such a large deficit has never persisted for so long. Over the past 40 years, the current account deficit has only exceeded 5% of GDP four times, and only once reached 8% for two consecutive years. Another distinctive feature of the recent deficit is that it is generated under fairly favourable external conditions. When the deficit ran at just over 8% of GDP in 1967 and 1968, this followed a collapse in the herring stock. In 1971, large capital formation in fact played a part in producing a current account deficit of almost 7% for one year, when some contraction also took place in exports. During the period 1974-75, when the current account deficit exceeded 10% of GDP for two years running, the terms of trade deteriorated by 18% at the same time as public sector expenditure increased. Finally, catch failures in 1981 and 1982 pushed the deficit up to 7% of GDP in the latter year. What distinguishes the deficit in recent years is that neither catch failures nor deteriorating terms of trade can be blamed. Admittedly, the 1971 deficit occurred under fairly favourable conditions whereby an improvement in the terms of trade offset a drop in exports. Then a 42% growth in capital formation can be regarded as the main cause of the deficit. In that sense conditions in 1971 resembled those in 1997, when capital formation linked to power-intensive industry and hydropower projects played a major part. Over the past three years, however, private consumption has played a larger role, especially in 1998 and 1999.

Another feature of the present period is that a major deficit has been run up despite an initially very favourable real exchange rate for export industries. For example, the real exchange rate index (1980=100) based on unit labour costs stood at 139 in 1974, when the current account deficit climbed to 10½% of GDP, while at the start of the current period it was 88.¹⁰ Since then, in fact, the real exchange

rate has risen considerably, but is still close to the average for the past 20 years. This situation represents both strengths and weaknesses. The strength lies in the fact that there is no pressing need to devalue the króna in order to improve the competitiveness of export industries. Rapid growth of emerging export sectors indicates a satisfactory competitive position. Thus there is less likelihood that a lack of competitiveness will undermine market confidence in the stability of the exchange rate with the accompanying risk of a currency crisis. On the other hand, its weakness lies in the fact that there is no simple solution to the external imbalance which has emerged in the economy. Under present circumstances, devaluing the króna is likely to lead above all to a rise in inflation, with less impact on real exchange rate and exports. Options are therefore confined to constraining domestic demand and boosting national saving, which will best be achieved by further increasing the already sizeable public sector operational surplus, or by identifying ways to stimulate private sector saving and cut back overoptimistic expectations.

For some indication of just how serious a problem the current account deficit is, it may be interesting to look at periods of large deficits in other countries, analyse their causes and consequences and try to learn from their experience. Box 4 on p. 19 discusses several current account periods in other OECD countries plus Thailand.¹¹ An attempt is made to identify whether any comparable country has sustained a current account deficit for as long as Iceland without later running into a currency crisis or at least serious economic difficulties. This study underlines the characteristic features of the present current account deficit period, namely that it cannot be attributed either to external shocks or a slack fiscal stance. In fact, in Iceland such a huge current account deficit has never before gone hand-in-hand with a substantial public sector surplus.

Iceland's current account deficit may be benign insofar as it is produced by investments in export sectors it, rather like Norway's deficit in the 1970s. Part of the deficit may be traced to investments in the high-tech sector, e.g. biotechnology and software

9. See box on page 9 of Monetary Bulletin 2000/2.

10. This change is too large to be explained by changes in the equilibrium real exchange rate.

11. Mexico and the Czech Republic have now joined the OECD.

Table 6 Treasury finances overview

% of gross domestic product	1998	1999	Projections	
			2000	2001
A Revenues excluding privatisation profits.....	30.9	33.1	32.5	32.3
B Expenditures excluding pensions, interest and investment.....	24.1	24.9	24.2	24.1
C Expenditures excluding pensions and interest.....	26.8	27.7	26.8	26.6
A-B.....	6.8	8.2	8.3	8.1
A-C.....	4.1	5.4	5.7	5.7

Sources: Ministry of Finance and National Economic Institute.

design.¹² Available data on these activities, however, are inadequate. Nonetheless, in recent years the deficit seems to have had more in common with episodes of large current account deficits in countries which had recently liberalised their capital markets, with accompanying capital inflows and high private sector expectations for economic growth.¹³ The difference is that the capital inflow into Iceland has in recent years been driven by foreign borrowing rather than equity investment. Other countries' experience serves as a warning that a current account deficit is not necessarily less cause for concern even if it is caused by the private rather than the public sector, as has been argued in the *Monetary Bulletin* before. On the whole, international experience can be said to suggest that a relatively painful landing is necessary, even if a serious crisis can be avoided.

The scenario for the years to come is highly uncertain, since some kind of adjustment is inevitable, while the timing of turning-points in economic developments is always difficult to pinpoint. Crucial

12. When companies invest in high-tech sectors where research and development account for a large part of activities, they are mainly paying employees salaries in order to create valuable know-how. Revenues from such investments do not begin to flow in until long after the investment has been made. In the meantime, the nation may appear to be living beyond its means, even though an productive investment is actually involved.

13. This applies, for example, to the current account deficits of Mexico, Thailand and the Czech Republic in the 1990s. In this respect conditions in Iceland also resemble the expansionary period in Scandinavia following deregulation there. However, Iceland's deficit is much greater than it was anywhere in Scandinavia, apart from Finland, where it was amplified by external shocks.

factors include the interaction of exchange rate and interest rate trends, household saving patterns and export growth. It is doubtful that national saving will continue to fall on the scale assumed by the NEI in its projections. It is quite conceivable that demand growth and the current account deficit will contract in the course of the period 2001-2003. If this fails to materialise, however, exports would need to grow faster than currently assumed, if the net debt position is to stabilise before economic stability is jeopardised still further.

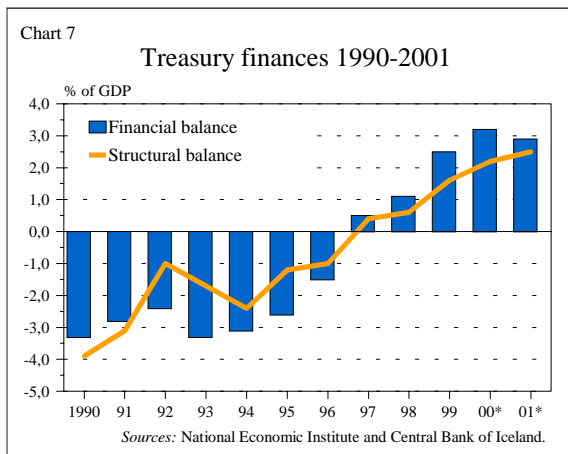
Treasury finances: outlook for larger than budgeted fiscal surplus in 2000

According to Ministry of Finance forecasts, the outlook is that treasury revenues in 2000 will exceed the budget figures by 7% (15.4 b.kr.) and outlays by just under 3% (5.4 b.kr.). Very large additional revenues have accrued from corporate income tax, which is up 47% from the treasury accounts for 1999 and exceeds the budget by 3 b.kr. This extra revenue can be traced to good business profitability in 1999. Personal income tax revenue rose by 8% between the years, compared to the 3% increase assumed in the budget, boosting revenues by a further 3 b.kr. Wage rises are nonetheless roughly in line with forecasts. Large revenues in excess of forecasts suggest that the impact of the personal allowance, which has risen more slowly than wages, has been underestimated.

Value-added tax is now expected to bring in 6 b.kr. more than according to the budget, while revenues for 1999 were greatly underestimated when the budget was passed. The same goes for interest revenues, which yield an extra 2 b.kr. However, it is uncertain that the 4.6 b.kr. target for revenues from privatisation will be reached.

The main reason for the 5.4 b.kr. overshoot on expenditures is that operating outlays are heading 2.5 b.kr. above the budget figures and transfers just over 1 b.kr. The crucial item is 2 b.kr. in additional outlays in the health sector, which has shown a strong tendency to exceed the budget in recent years. Other major reasons for budget outlays in excess of targets are a rise in interest outlays, in particular due to foreign interest rate changes, and the establishment of an embassy in Japan, which was not allowed for in the budget.

The borrowing surplus will increase by 7 b.kr.



somewhat less than the budget surplus. How to dispose of the surplus is somewhat problematic given the weak position of the króna in recent months. It is important to do it in a way which is consistent with the aim of reducing inflation and strengthening the króna. Foreign debt amortisation must not undermine the foreign exchange reserve.

The fiscal outcome for 2000 can be summarised as follows: Ignoring irregular pension fund payments, interest revenues and outlays and proceeds from sale of assets, some improvement has taken place between 1998 and 1999 and the outlook is for the same pattern during the current year.¹⁴

Record surplus in draft budget for 2001

The draft budget for 2001 assumes that revenues and outlays will rise more or less in pace with the economic outlook. It has been decided to transfer capital earmarked for the Unemployment Insurance Fund into maternity and paternity leave allowances, which is expected to cost 2 b.kr. during the year and 3 b.kr. when new legislation on maternity and paternity enters full effect.¹⁵ In 2001, the credit budget surplus is estimated to grow to 34.8 b.kr. from 27.5 b.kr. this year. This prompts questions about the best way to dispose of this surplus. All things being equal, amor-

tisation of foreign loans could disrupt the target for bringing down inflation, on account of the pressure it would put on the exchange rate. Heavy amortisation of domestic treasury debt, however, could spawn untimely pressure to bring down long-term interest rates. It would seem appropriate under these circumstances to build up a significant deposit with the Central Bank. Outstanding contributions to public sector employees' pension funds could also be paid.

It is estimated that the output gap will peak this year with GDP running almost 3% above normal utilisation of production capacity, but just over 1% next year (see Box 2). Next year's improved fiscal performance could be expected to reflect a tighter stance. The treasury surplus rises from 27 to 30 b.kr., but the improvement shown in the budget largely accrues from the sale of assets. The improvement is not large enough to prevent some deterioration according to the NEI's definitions of treasury revenues and outlays,¹⁶ or by approximately as much as can be considered a normal response to slower economic growth. The accompanying chart for fiscal performance therefore shows some deterioration between 2000 and 2001, while the cyclically adjusted performance improves slightly due to slower economic growth.

Local governments in Iceland have performed much worse than the treasury in recent years. They reported a 3 b.kr. deficit in 1999, which is equivalent to 5% of their revenue but somewhat better than the 8% deficit in 1998. According to the NEI forecast, deficit will run at 2.4 b.kr. this year and 2.8 b.kr. in 2001. These forecasts, however, are based on data of lesser quality than data for treasury operations. Net local government indebtedness will continue to rise, if the NEI forecast holds.

Using accounting method based on international standards, the NEI projects a general government surplus¹⁷ of 20 b.kr. this year, which is somewhat lower than the combined central and local government outcome. In particular the discrepancy is

14. These figures are adjusted for an ad hoc revenue transfer on account of Iceland Telecom in 1999.

15. In recent years this has been financed through the Unemployment Insurance Fund, which has posted a credit to the treasury. This entry will now be abolished. However, a balance of 0.7 b.kr. built up during an economic upswing can hardly be considered strong.

16. The NEI's time series, which do not include proceeds from sales among revenues, are the only remaining continuous series following the reform of treasury accounting in 1998.

17. General government comprises the operations of central government, local government and also the social security system, which in Iceland is virtually a sub-department of the state.

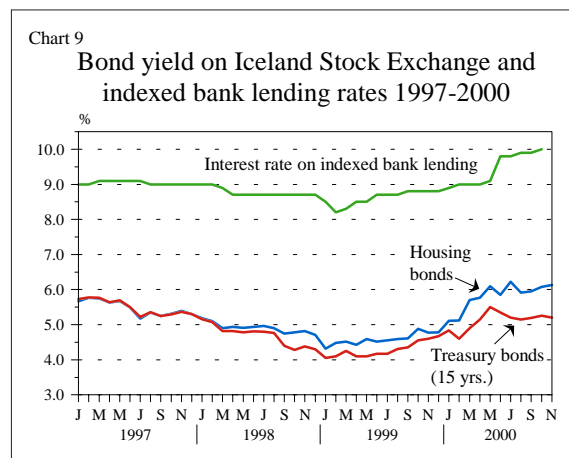
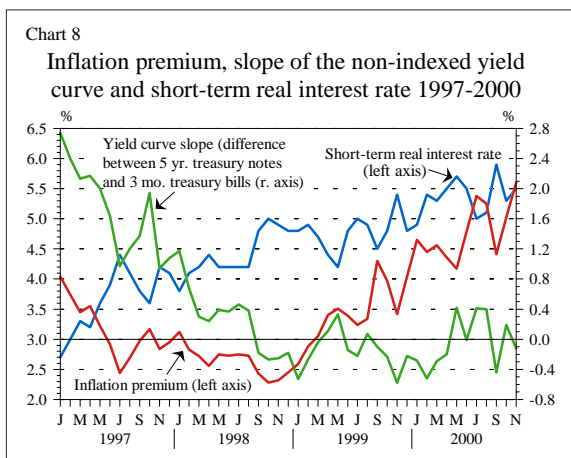
caused by the fact that proceeds from the sale of assets are not classified as revenues under this accounting method. Nonetheless, the surplus measures 2.8% of GDP and 2.5% in 2001, both figures ranking with the best within the OECD. Only Norway and Finland are expected to perform better in 2000 according to the organisation's most recent reports.

Monetary stance tightens following interest rate rise on November 1

The tightness of the monetary stance needs to be assessed regularly to see whether it fits the circumstances. In this context it is worth examining various indicators of the tightness of the monetary stance and its results. As mentioned earlier, credit growth is far beyond acceptable limits. This may be a sign that the monetary stance has been insufficiently tight, although it should be borne in mind that the impact of measures to tighten monetary restraint is delivered with a considerable time-lag, and also that credit institutions have so far been able to avoid Central Bank restraint by borrowing abroad. The depreciation of the króna may also be an indication that the stance is insufficiently tight. However, it must be taken into account that the equilibrium rate of the króna fluctuates according to underlying economic conditions. The equilibrium exchange rate fell in the spring following reports that catch quotas needed to be cut and the prospects for exports, the current account balance and economic growth had all deteriorated.

The Central Bank's main instrument for tightening the monetary policy stance is to raise the interest rates in its transactions with credit institutions. From the end of 1998 until June this year, the Central Bank repo rate rose from 7.5% to 10.6%, or by 3.1 percentage points. Over the same period, inflation rose from around 1½% to this year's 5½-6%, outstripping the Central Bank's interest hikes. The spread between yields on indexed and non-indexed treasury bonds of the same length is a more appropriate measure of inflation expectations among market participants than past inflation. If this gauge of inflation expectations is applied, real interest rates for repos have generally risen somewhat over the period, although not much. Real interest rates on repurchase agreements showed some rise after inflation expectations slowed down in late summer and autumn, and in October they peaked around 1% higher than at the end of 1998. Early in the summer they had fallen considerably. Unfavourable CPI measurements in October wiped out this gain to some extent. The 0.8% interest rate increase at the beginning of November boosted real interest rates once more, so that by this criterion the monetary stance is unquestionably tighter than before.

Tightening the monetary stance by raising short-term interest rates tends to narrow the spread between short-term and long-term rates, i.e. the yield curve levels out. Under very tight monetary policy, short-term interest rates can temporarily exceed long-term ones, to create a downward sloping yield curve. This suggests that market players regard the



monetary stance as credible and believe that inflation will be held in check, since they expect short-term rates to fall in the future. The spread between long-term and short-term interest rates narrowed sharply in 1997 and 1998, when inflation had still not reared its head. Over the past two years the yield curve has been more or less flat, fluctuating in the range $\pm\frac{1}{2}\%$. This criterion suggests a certain degree of tightness, although given the high nominal short-term rates the curve could have been expected to be sharply negative, something akin to what happened in the UK in 1998 after the Bank of England raised its rates.

Interest rates on non-indexed borrowing by households and corporations have risen sharply in recent years. Nonetheless, domestic short-term rates do not give the full picture about how tight the monetary stance is. As clearly shown by the trend in credit growth described above, larger Icelandic corporations at least have had a fairly easy way of bypassing this restraint, by borrowing abroad at much lower rates of interest. The cost-effectiveness of such borrowing depends on whether the króna remains sufficiently stable, so that a depreciation does not wipe out the benefit of lower foreign interest rates. Strong confidence in the stability of the currency can dampen the tighter impact of higher interest rates. Accordingly, there are two ways of looking at the sharper fluctuations and weakening of the króna. On the one hand, wider fluctuations imply that the exchange rate of the króna may be less secure than was widely thought before, causing foreign borrowing to be less favourable. Wider fluctuations are possible after the fluctuation limits for the exchange rate was extended to $\pm 9\%$ in February. On the other hand, a depreciation somewhat eases the position of companies engaged in exporting or competing with imports. The short-term interest differential with abroad has been running very high, at close to 6% all this year. In the past few months, before the Central Bank raised its rates by 0.8% at the beginning of November, rising foreign rates had narrowed this differential, but after the latest increase in domestic

rates it is now wider than at any time this year. Compounding the effect of the large interest rate differential is the fact that interest rates have been rising abroad and there are indications that spreads faced by domestic borrowers on foreign relending have gone up of late. These developments indicate that the restraint coming through the interest rate channel has increased.

A tight monetary policy is not transmitted in full to corporations and households unless higher short-term interest rates lead to a rise in the interest that apply to loans taken to fund investment and consumption. A large share of these loans are indexed long-term loans. The dominance of indexed long-term borrowing in the Icelandic credit market in all likelihood significantly cushions the effectiveness of monetary policy, as has been clearly shown in recent years. Until 1998, interest rates on indexed long-term bonds were on a downward trend, even when short-term rates were rising. Interest on indexed bank loans fell too, but to a lesser degree, and reached a low in March last year. The fall in indexed interest rates clearly counteracted the effects of higher short-term interest rates. This year, indexed long-term interest rates have risen rapidly. Housing bond rates, for example, have been around $1\frac{1}{2}\%$ higher since the spring than towards the end of 1998. Raising long-term interest rates therefore supports a tight monetary stance, but given how late these increases came, the full impact is probably still to come. In the housing market some impact has already been felt, as described above.

To summarise, it seems safe to say that despite the weakening of the króna, the monetary stance has tightened considerably of late. The impact of interest rates on domestic demand is probably more restrictive now than for a long time, through the combined impact of rises in domestic short-term rates, domestic long-term rates, foreign rates and premiums. However, the full transmission of the impact will take some time.