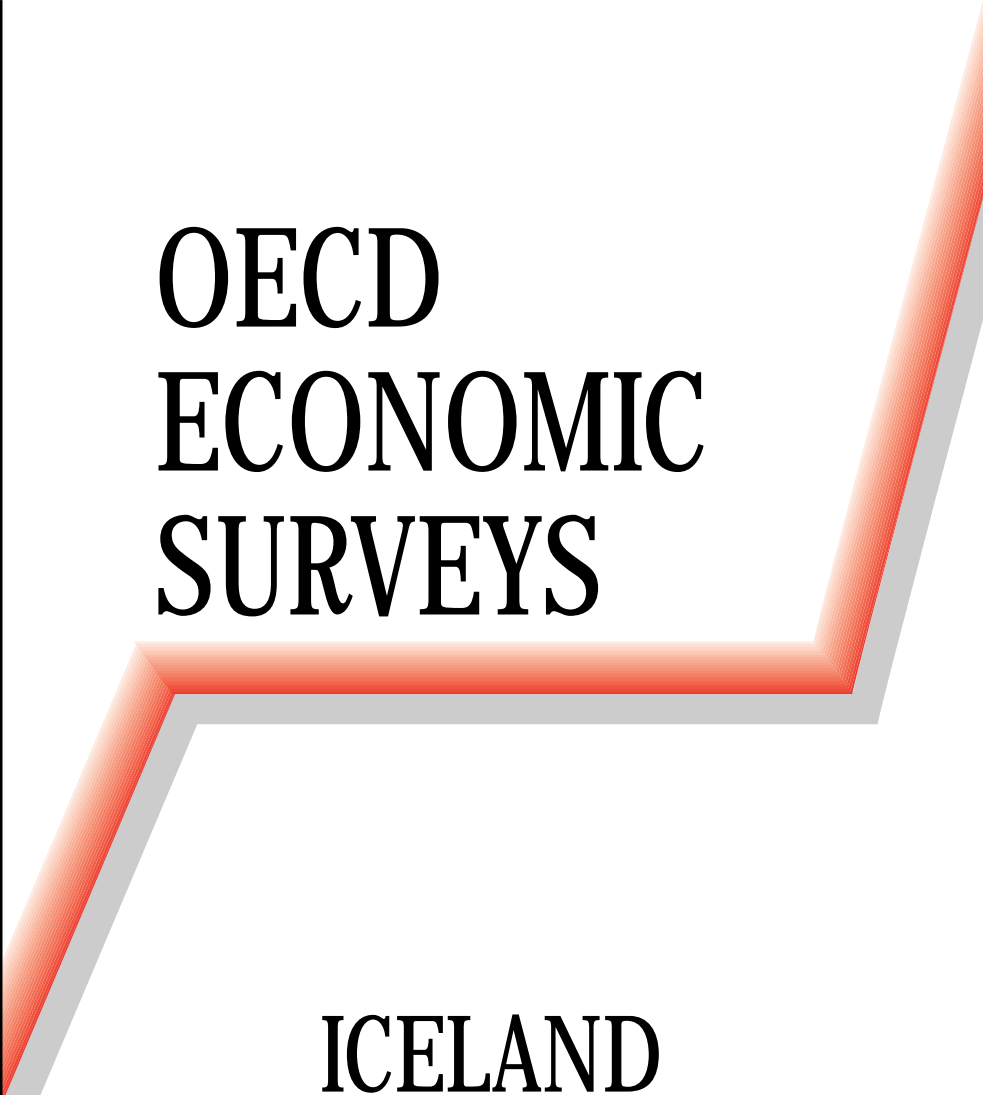


OECD ECONOMIC SURVEYS



ICELAND

1997

SPECIAL FEATURES

- EDUCATION AND TRAINING
- LABOUR MARKET

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**OECD
ECONOMIC
SURVEYS**

1996-1997

ICELAND

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BASIC STATISTICS OF ICELAND

THE LAND

Area (1 000 sq. km)	103	Unproductive area (1 000 sq. km)	82
Productive area (1 000 sq.km)	21	<i>of which:</i>	
<i>of which:</i>		Glaciers	12
Cultivated area	1.1	Other area devoid of vegetation	70
Rough grazings	20		

THE PEOPLE

Population, 1st December 1996	269 735	Occupational distribution, 1995 (per cent):	
Net increase 1985-95, annual average (per cent)	1.0	Agriculture	4.6
		Fishing and fish processing	11.3
		Other manufacturing	10.6
		Construction, total	6.9
		Commerce	13.5
		Communications	6.5
		Services and other	<u>46.6</u>
			100.0

GOVERNMENT AND PARLIAMENT

	1991	1995
Parliament, number of seats:		
Independence Party (Lib. Cons.)	26	25
Progressive Party (Agrarians)	13	15
Peoples' Alliance (Socialists, Communists)	9	9
Social Democratic Party	10	7
Citizen's Party	-	-
Women's Alliance	5	3
Other	<u>1</u>	<u>4</u>
	63	63

Last general election: April 1995

PRODUCTION AND CAPITAL FORMATION

Gross national product in 1996:		Gross fixed capital formation in 1996:	
IKr million	475 842	IKr million	84 934
Per head, US dollars	26 452	Per cent of GNP	17.8

FOREIGN TRADE

Exports of goods and services in 1996, per cent of GNP	36.8	Imports of goods and services in 1996, per cent of GNP	36.4
Main exports in 1995 (per cent of merchandise exports):		Imports in 1995, by use (per cent of merchandise imports)	
Fish products	71.9	Consumer goods	35.6
Aluminium	10.6	Investment goods	28.5
Other manufacturing products	10.9	Intermediate goods (excl. fuels)	28.7
Agricultural products	1.8	Fuels and lubricants	7.1
Miscellaneous	4.8		

THE CURRENCY

Monetary unit: Krona		Currency units per US dollar, averages of daily figures:	
		Year 1996	66.69
		February 1997	70.43

Note: An international comparison of certain basic statistics is given in an annex table.

This Survey is based on the Secretariat's study prepared for the annual review of Iceland by the Economic and Development Review Committee on 13 March 1997.

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After revisions in the light of discussions during the review, final approval of the Survey for publication was given by the Committee on 8 April 1997.

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The previous Survey of Iceland was issued in May 1995.

Assessment and recommendations

The economy pulled out of a long period of stagnation once the disinflation process was completed in 1994

After six years of economic stagnation resulting from the need to adjust to lower cod stocks and to purge endemically rapid inflation from the system, Iceland has now enjoyed three consecutive years of expansion. With the disinflation process completed by the early 1990s, the real exchange rate at its lowest level in decades and cod stock estimates showing tentative signs of a recovery, the stage was set for a return to economic growth. The turnaround occurred in 1994 and was initially attributable to a second year of robust increases in export volumes, which led to another sizeable improvement in the current account. Macroeconomic policy also played an important supportive role, as both short- and long-term interest rates fell sharply in 1993, and budgets of both the State and municipalities were decidedly expansionary.

Since then growth has accelerated due, in part, to favourable supply shocks

In the past two years the expansion has broadened and solidified owing to further mostly favourable supply-side shocks and the stimulus to consumers provided by vigorous increases in real incomes in the context of a backlog of pent-up demands. The most obvious boost to future supply has come from the power-intensive manufacturing sector. First came the 1995 decision to expand the existing aluminium smelter and more recently the strong likelihood that a second plant will be constructed to take advantage both of the nation's low-cost sources of electricity and its stable economic environment. Expansion of the existing ferro-silicon plant has also just been agreed. But conditions in the

fishing sector have also taken a clear turn for the better: official estimates point to a sharp increase in the fishable stock of cod, and the volume of marine product exports rose by 9 per cent in 1996. With profits at a historically high share of factor incomes and capital costs benefiting from an extremely buoyant equities market, business investment has soared, even aside from the smelter expansion, and the share of private non-residential capital formation in GDP has jumped by nearly 3 percentage points since 1994, albeit only to a still relatively moderate level. Households have enjoyed rising purchasing power resulting from wage gains and have shown a willingness to lower their saving rates and take on greater debt levels with the confidence that real income growth will be sustained, and private consumption has therefore also surged. The boom in domestic demand has stimulated rising import penetration, and, given rather low levels of national saving, the current account moved back into significant deficit in 1996. Even so, real GDP is believed to have increased by 5.7 per cent last year, the strongest performance in a decade and among the best in the OECD.

The strength in activity has helped reduce labour market slack and has pushed inflation back above 2 per cent per year

This success has spilled over into the labour market. Employment, which had fallen steadily in the period of stagnation, has registered annual growth above 2 per cent in the last two years. This has been sufficient to bring net emigration to a halt and to encourage renewed increases in labour force participation, which have buffered the decline in unemployment; nonetheless, joblessness, which had reached a peak of 5 per cent in 1995, has since come down nearly a full percentage point, and some bottlenecks have appeared. With tightening labour market conditions, the early estimates of the average private-sector wage increases granted in the overarching labour agreement of early 1995 were easily surpassed, with average wage increases of almost 11 per cent over the two years since then. Along

with some upward pressure from import prices, this has been sufficient to push up the rate of inflation, especially for services: year-on-year increases in overall consumer prices, which had completely stopped in late 1994, have since rebounded to the 2 to 2½ per cent range, slightly above a trade-weighted average of inflation rates in Iceland's trading partners.

The near-term projection is likely to be heavily influenced by imminent decisions on a few mega-projects and the outcome of the recent wage negotiations

The outlook for the next two years has to be conditioned on the go-ahead for the construction of the second smelter, for which the final decision is expected imminently. But it is also subject to considerable uncertainty emanating from the recent round of wage negotiations aimed at a new agreement to replace the expired 1995-96 accord, as well as from the policy response to the eventual outcome. Given the fact that labour markets would appear to be tighter than two years ago and that share prices have more than doubled since then, indicating ample ability to absorb cost increases, it would appear that another substantial wage rise is likely. By the time of writing, most private-sector agreements had been signed with average increases in the range of 5 to 6 per cent in the first year. With persistently robust income gains and still unsatisfied demands for durable goods, along with optimism that their jobs are secure, households seem to have every reason to continue along the path of robust increases in private consumption and possibly even to raise their spending in the housing sector, which has remained rather subdued to this point. Business investment should continue to grow strongly, even if the rate of growth slows from the exuberant pace of 1996. Once again the external sector should act as a buffer, as much of the equipment needed for durables consumption and business investment will have to be imported, although the prospects for exports are reasonably bright in light of the quota increase for cod and the low level of the real exchange rate.

Real GDP growth should stay robust, unemployment fall, inflation increase and the current deficit widen

Overall, even with an assumption of higher interest rates and achievement of the targeted elimination of the Treasury deficit, real GDP is projected to rise by nearly 5 per cent this year and 4 per cent in 1998, well above trend rates. Unemployment should continue to fall, reaching around 3½ per cent of the labour force in 1998. Tensions in product markets may mount further, and, combined with rising labour costs, may push price inflation back above 3 per cent in 1998 for the first time since 1993. The current balance is likely to move into an even larger deficit, even if only temporarily, because of the boost in producer and consumer durable goods imports.

Policy should focus on the avoidance of overheating; recent fiscal deficit targets have only just been met, despite much higher output than expected

The policy predicament is, therefore, abundantly clear. If overheating of the economy is to be avoided and the hard-won gains on the inflation front are not to be given up, the authorities will need to restrain the demand for domestic output using all available policy levers. In the previous Survey of Iceland's economy two years ago, the Committee called for budgetary policy to move more forcefully toward fiscal consolidation, focused on spending restraint, in order to minimise the expected rise in net central government debt. In the event budget targets have been met on average in 1995-96, and the rise in debt has been curbed, but this has been attributable to the unexpected strength in activity and the tax revenues which resulted from it. While Treasury revenues in 1996 were IKr 18 billion (16.5 per cent) above the 1994 outcome and a cumulative IKr 9 billion above budgeted levels, no advantage of this windfall was taken, as expenditures over the two-year period were boosted IKr 12.7 billion (10.9 per cent), IKr 8.7 billion above the levels contained in the two budgets. Thus, policy has not been as tight as had been intended: the cumulated deficit was almost exactly as intended, despite real GDP about 3 percentage points above expected levels, because of the chronic problem of overspending.

The 1997 targeted deficit elimination now looks insufficiently ambitious to exercise much restraining effect on activity

Once again, in passing the budget for 1997, the authorities were counting on zero real growth in State spending to achieve their target of eliminating the cash deficit. But as the budget was predicated on only a trend increase in real GDP, macroeconomic stabilisation objectives – as well as reasons of sound public finances and external balance – call for them to go further, to adhere rigorously to spending targets and to record a substantial cash surplus if activity proves much more buoyant, as is projected by the OECD Secretariat. In order for this to be achieved, they will have to live strictly within the budgeted spending limits. And they will have to find ways to finance the full budgetary effects of the substantial tax cuts announced in March 1997 which seem to limit the functioning of the automatic stabilisers. In addition, the government should stand firm with its own employees, as public-sector compensation increases, especially for nurses and teachers, have outpaced those of their private-sector counterparts in 1995-96. Achieving cash equilibrium this year would represent substantial progress and would be one of the better outcomes in the OECD area and would leave Iceland with one of the OECD's healthiest government balance sheets. But it would mean that the restraining impact of budgetary policy on activity would be minimal and the opportunity to strengthen further the medium-term fiscal position would be missed.

Greater public saving could also contribute to loosening the constraints on domestic investment

Another reason for more substantial fiscal consolidation is the nation's savings-investment situation. Gross public saving has been near zero in recent years, in contrast with levels of 4 to 5 per cent of GDP in the 1970s and early 1980s. Combined with a decline in private saving of a similar magnitude this has meant that the current account – equivalent to the difference between gross saving and investment – is in balance only if investment is held to 15 or 16 per cent of GDP, not much more than half

the 1970's average and lower than rates in most other OECD Member countries. Continuing with such a low rate of gross investment would imply meagre rates of net investment and little increase in the capital stock and longer-run per capita incomes unless the current account is allowed to be chronically in deficit and foreign indebtedness to trend higher. It is unlikely that such an outcome could prove sustainable, as Iceland already has net external debt of around half of GDP, up more than 8 percentage points over the past decade. Since it is widely believed to be difficult for policy to influence private saving rates, it necessarily falls to the government to tailor its finances at least to some extent to the nation's long-run investment needs and to the sustainability of its debt situation.

***However,
monetary policy
will have
the biggest role
to play***

But monetary levers are likely to prove the most formidable anti-inflation devices in the authorities' arsenal. The Central Bank has been attempting to moderate accelerating spending by following a restrictive policy position over the past two years, but at the same time it has been constrained by the desire to maintain a stable trade-weighted exchange rate – a policy which served it well in the disinflation era – and to keep domestic interest rates as low as possible. Short-term interest rates have nonetheless been kept well above corresponding foreign rates since the former policy of resisting world-wide increases in rates in 1994 was abandoned at the end of that year, and long-term rates have followed suit: the market's memory of the high-inflation era apparently persists, and the lack of formal central bank independence may not have gone unnoticed.

Higher interest rates than abroad may not be sufficient in themselves to cool demand pressures if the equilibrium real exchange rate has risen

But the nominal differential against foreign rates may not be a good indicator of whether policy is appropriately set for the domestic conjunctural circumstances when the economy is being buffeted by supply shocks. In particular, decisions to proceed with the mega-projects in the power-intensive sectors and the recent and expected future quota hikes for cod constitute important positive supply shocks which agents, not surprisingly, have weighted more heavily in their current spending decisions than the small adverse move in the terms of trade and the decline in the fish catch in distant waters. Such shocks should boost the equilibrium real exchange rate in spite of some short-term deterioration in the current account. If the currency is not permitted to appreciate in nominal terms and the undervaluation persists, the risk is that global spending will focus increasingly on Iceland's tradeable goods and services, that overheating would ensue, and real appreciation would come about through higher inflation in Iceland than abroad.

Monetary conditions will probably have to be tightened further, and the exchange rate should be allowed to rise within the target band

In the face of recurrent capital inflows, the set of interest rates appropriate to maintain a stable exchange rate may be too low to achieve domestic stabilisation objectives and to avoid overheating. When short-term interest rates were allowed to rise in late 1995, the Central Bank felt that the increase was necessary because of the uncertainty engendered by the reopening of the wage agreements. Once this lifted, rates could be brought back down. But, taken before the extent of acceleration in demand was recognised, the spring 1996 decision to let short-term interest rates fall alleviated upward pressures on the nominal exchange rate for a time, but it inadvertently served to undermine internal balance. The small September 1996 rate hike may not have satisfied the need for tighter overall monetary conditions, especially with only a minimal change in the krona's position in the exchange rate target band, now widened to allow fluctuations of up to 6 per cent above and below its mid-

point. For the impact of monetary tightening for small, open economies such as Iceland's is primarily through the impact on the exchange rate and only to a limited extent by direct contractionary effect on domestic demand. Unfortunately, while the Central Bank has tried to underscore its commitment to price stability by what amounts to mild resistance against unsustainable growth in domestic demand, it recently held out the possibility of easing monetary policy in the near future once again, should the wage negotiations be concluded with a moderate outcome. But this hope was probably forlorn, and, in any case, tighter monetary conditions are required following the recent wage accords to ensure that a wage-price spiral does not get underway. This tightening will most efficiently entail both higher interest rates and a more flexible use of both halves of the official exchange rate band.

While low unemployment and a fairly equal income distribution are enviable, labour productivity is low

This Survey focuses to a large extent on the labour market and the system of human capital development. This can be justified by pointing to the substantially higher level of work effort – proxied by the OECD's highest employment-to-population ratio and the longest average workweek for full-time workers – needed to generate a level of per capita GDP in line with those in most other OECD Member countries: average hourly productivity must be very low, especially given the substantial resource rents from the fisheries and energy sectors. The questions which naturally arise are whether this can be attributed solely to the diseconomies of small-scale production, or, alternatively, whether either labour inputs embody insufficient human capital or labour market arrangements are inefficient. It must be recognised that for most of its history Iceland managed to run its economy with almost no visible unemployment and with a relatively equal distribution of income, and, even with the stagnation of employment and the appearance of joblessness in the 4 to 5 per cent range in

recent years, such outcomes – in the face of the prolonged weakness in activity – are the envy of most trading partners.

This raises questions about various labour market arrangements, such as those relating to working time,...

Nevertheless, there are some domains which have drawn the Committee's attention. Although the labour market is appropriately free of unnecessary regulation and therefore responds flexibly to price incentives, the working time arrangements are difficult to defend in a low inflation environment: the system of paying wage premia for hours worked outside of the daytime period no doubt distorts production and labour supply decisions; in particular, it may make it difficult for the least skilled to find an entry path into the jobs market and dissuade more intensive and therefore cost efficient use of the fixed capital stock. It remains to be seen whether the recent forced shortening of the workweek will provide the necessary incentive to the social partners to re-examine this system with a view to boosting hourly productivity.

... wage bargaining...

Second, the industrial relations system has not shown itself to be successful in all regards. Work stoppages due to strikes seem unusually high, and the wage negotiation system excessively complicated and protracted. Also, the centralised stage may generate an agreed wage increase which serves as an effective floor, leading to some upward bias. The government has recently tried to formalise and shorten the process, but the 1997 round has been as drawn out as its predecessors. The decentralisation that has taken place has meant that bargaining does not have to take place at the same time in all sectors and firm- and industry-specific factors can be better taken into account. But workers should not presume that they can revert to more centralised negotiations in times of future labour market weakness.

***... and
unemployment
compensation***

Third, the government's policies towards the unemployed have been rethought, but the recent changes do not go far enough. Benefit duration under the reform will still be longer than necessary in an environment of low unemployment, and the availability of benefits for those working short-time too easy, with the strong risk that the recent trend towards lengthening spells of joblessness will persist. The generosity of benefits also seems to be such as to discourage labour market attachment for the least skilled. And the trend rise in the numbers of recipients of disability pensions, probably a substitute for early retirement schemes, is also of concern. But centralising the management of the public employment service is a step in the right direction, as it should avoid the possibility that efficient matches are missed and make the labour market more national in character. Further provision of counselling and placement services would also be helpful.

***It also raises
questions about
the education and
training system,
especially
whether it is
adequately
funded***

Most important, however, is probably the question of the skills and competences of Iceland's workers. The nation's education and training system has slowly evolved over the years to deal with the country's needs: to safeguard its culture and unique language and to provide its citizens with the skills they require to find gainful employment. In the past, there was little question as to its success in view of the level and growth rate of per capita incomes. However, the nature of the job market in general, and persistently higher levels of joblessness in particular, as well as the changed structure of employment – for example, the share of work located in the primary (farming and fishing) sector has fallen by half to 10 per cent over the past generation – call for a renewed focus on the question of the resources available to schooling and the efficiency with which they are used. The new services-oriented jobs have much more varied skill requirements; jobs too may be less permanent and may require individual mid-career “retooling”. Thus,

the reliance on formal education must inevitably increase, and learning will have to become more continuous and less associated with youth. And, most importantly, the case for increased spending has become stronger.

Even though teacher pay is low by international standards, higher spending should focus mainly on the capital stock...

Frugality in this spending area has manifested itself in apparently low teacher pay which has led to chronically poor labour relations. But it does not seem to have curtailed either the supply or the quality of the nation's teachers. Thus, it would seem difficult on economic grounds to justify further increases in their compensation levels without increased effort on their part. But poor labour relations with teachers cannot make for good performance, and some effort should be made to improve the situation. Low spending levels have also led to a possibly insufficient capital stock in the sector, especially at the tertiary level, where space seems inadequate to handle the current student body, and also in the form of equipment needed for many technical applications. Published evidence that returns to education for young people are modest in Iceland does not constitute a persuasive case that such returns to additional schooling will remain modest throughout their working lifetimes; indeed, some evidence points to implicit financial returns (as proxied by university wage premia) which are about as high for Iceland as for the average OECD country. And the penalty to the low skilled in the form of higher unemployment rates than their university-educated countrymen and women is at least as high as in other Member countries.

... and on lengthening the school year. Standards and performance incentives should also be raised

Outcomes might also be improved by increasing school inputs, even though the weakness of some recent standardised international test results may not be solely the result of any failures of the schooling system: parents may not be spending as much time on helping their children as they did in the past nor as much as is done in some other countries. One of the most obvious ways of augmenting

inputs would be to lengthen the school year. The 1996 Act on Compulsory Education set such a process in motion; its implementation should be considered the minimum necessary, since even after the reform the number of hours of instructional time per year will still be well below the OECD average. Outcomes at the compulsory level could also be improved by focusing the added hours on subjects which are likely to prove most in demand in career preparation (foreign languages) and where achievement has been shown to be sub-par: natural sciences and mathematics, in particular. Also the means must be found to boost standards and enhance incentives for pupils and teachers to perform to the maximum of their capabilities. It is to be hoped that making more information available to parents on school performance, as has just begun, will allow competition and choice to play a greater role (albeit one limited by the sparse nature of the population). Boosting entrance requirements for post-compulsory programmes might also prove helpful. And employers should be encouraged to seek potential employees' school records, so that all students, not just those trying to get into highly sought-after university courses, would seek to excel.

Efforts should be boosted to treat the drop-out problem...

Beyond the compulsory education stage there are several important problems. First, there is a serious drop-out problem at both the upper secondary and the tertiary level. This feature has long been recognised, but only recently have efforts been made to tackle it, by broadening the variety of programmes offered, for example. In any case, it appears more dramatic than it truly is, since many drop-outs ultimately return to complete their studies. At the upper secondary level possible solutions are to be found in allowing academic students access to the Student Loan Fund and making the labour market implications of low attainment resulting from dropping out clearer to students and to the public at large; in this connection further updates of the

panel database showing the progress of those born in 1969, a rare source of longitudinal information in Iceland, would seem desirable. This could form part of a strategy of improving counselling to students approaching key decisions in their educational careers. More readily available remedial teaching could also prove helpful.

... and to encourage post-compulsory students to finish their studies in good time. Tuition fees would help in this regard and would provide added funding

Second, there has been a tendency for many students to spend too long in finishing their studies. This is no doubt related to the very heavy subsidy element in post-compulsory public education, especially tertiary studies. The introduction of tuition fees, combined with an expansion of income-contingent loans from the Student Loan Fund (interest on which could be charged during the period of study), would encourage students to finish their studies in good time, would provide the proper incentives for students to choose their courses of study with the appropriate focus on human capital considerations and would furnish the tertiary institutions with the financing they so desperately need in order to meet the expanding student population. At the same time, it would allow the University of Iceland to clarify its finances by ridding itself of its monopolised commercial operations for which it is unlikely to have any comparative advantage.

Attempts should be made to improve the image of vocational education and to ensure it is closely related to labour market needs

Third, vocational education in Iceland, as in many other OECD countries, has not proved as successful as had been hoped. It should ideally attract those not wishing to pursue tertiary academic education, but it suffers from an unfavourable image and is shunned for the most part. The authorities should attempt to burnish that image by more active promotion of non-academic studies at both the upper secondary and tertiary levels with curricula more tailored to market needs. A clearly structured mechanism for defining those needs and building bridges to employers is vital. This should be backed up by more generous public funding,

especially for associated equipment. In this regard educational institutions should be encouraged to offer more specialised contract training by allowing them to keep the resulting income.

The relationship between employers' workplace organisation and students' investments in skills can form either a vicious or a virtuous circle

But in the end much of the relationship between schooling and the labour market is bi-directional. Employers will not re-engineer their workplaces to allow greater employee initiative and responsibility if they collectively lack the confidence that their employees have the skills and qualities required to carry out these more varied tasks. Similarly, young people are not entirely convinced that investments in additional human capital will pay off in the form of more pay and job satisfaction: dropping out has not seemed such a terrible alternative. Pressures on employers to follow a high-skill, high-training strategy will no doubt emanate from increased competition from abroad and from imitation of the successes of some leading employers.

Labour productivity is also importantly determined by other structural policies, especially those related to competition

Finally, labour market outcomes in general and average productivity in particular are likely to be influenced by other structural factors which the Committee has concentrated on in recent years. The most important of these is the difficult question of how to maximise the degree of competition in such a small economy as Iceland's. Government policies still distort resource allocation and reduce efficiency in agriculture and in industries with substantial public ownership, the financial and electricity sectors in particular. The slow progress in privatisation is therefore regrettable. Although Iceland has undertaken myriad market-opening structural reforms, there remain many areas where market forces could well play a greater role and where institutions and regulations could be re-examined as to their relevance, efficiency and effectiveness.

I. Recent economic trends and prospects

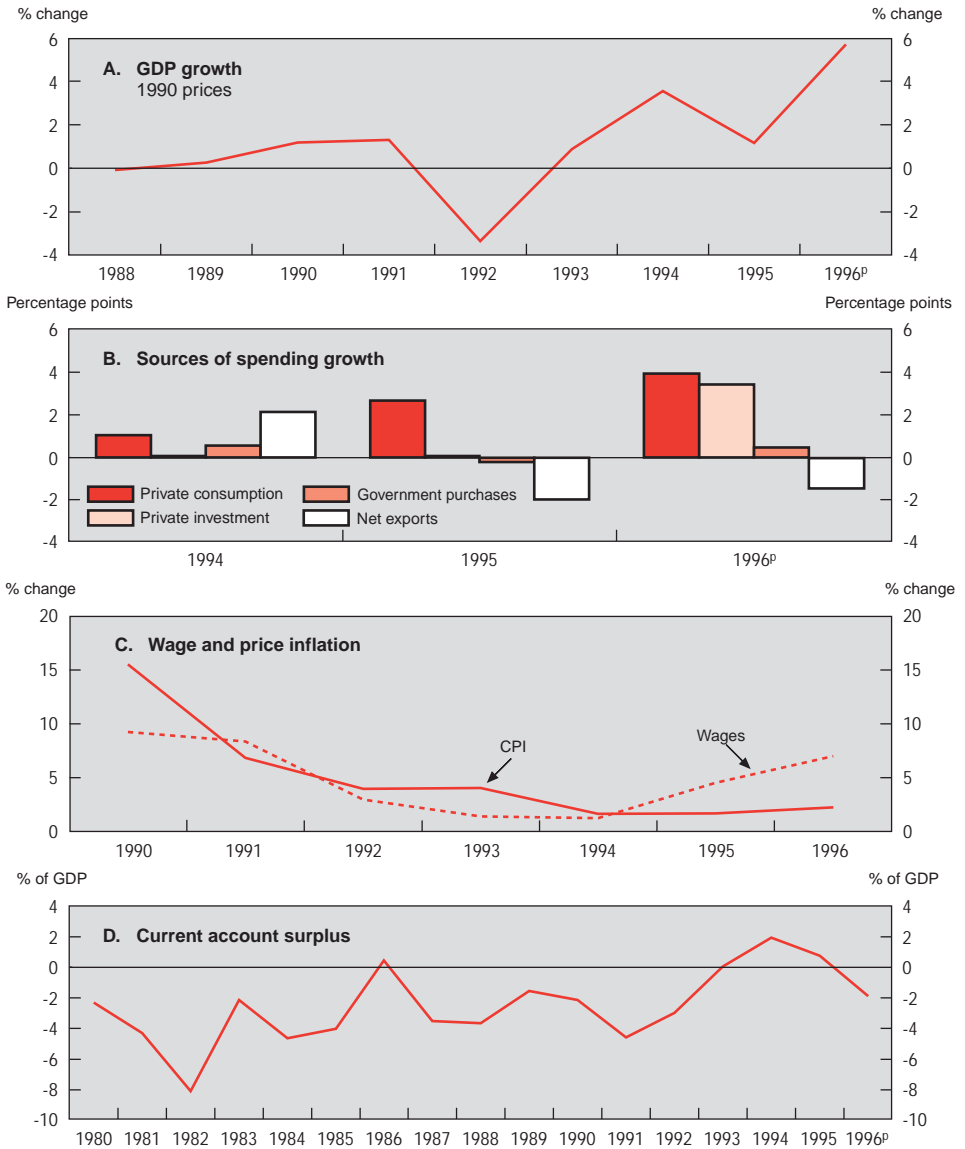
After years of stagnation, the Icelandic economy has posted three consecutive years of solid growth. Initially, growth was export based, but over the past two years it has broadened as first private consumption and then private investment surged (Figure 1). Thus, in 1996 domestic demand rose fast enough for the slack in resource utilisation to begin to be taken up, and the unemployment rate fell markedly for first time.

The sharp rise in domestic demand reflects the net effects of various, mostly favourable, supply-side developments: the nascent recovery of fish stocks, the firming of aluminium prices in 1994 and the subsequent increase in investment in that sector. The improved outlook for the export sector may have been an important factor in the rise in real wages and the subsequent fall in the saving rate and robust growth of consumption. The investment boom and falling saving rates resulted in the re-emergence of a deficit on the current account in 1996 after two years of significant surpluses. To some extent this reflects imports of investment goods for the export sector. But imports of consumer goods have also risen strongly. Rising wage rates have begun to put pressure on prices, and, while consumer price inflation is still low, it has begun to increase.

Domestic demand solidifies

Private consumption has grown rapidly over the past two years (Table 1). The main reason has been the rapid growth in labour income, fuelled by large wage increases. But consumption has risen even faster than disposable income, and the saving rate has fallen. A portion of the rise in consumption may represent temporary pent-up demand for automobiles and other durable goods, as purchases were postponed when the income outlook was more uncertain during the six-year period of economic stagnation which ended in 1993 (Figure 2).

Figure 1. **KEY FEATURES OF RECENT ECONOMIC PERFORMANCE**



p: Preliminary.
Source: OECD.

Table 1. **GDP and demand**

Per cent change in volume terms, 1990 prices

	1991	1992	1993	1994	1995	1996
Private consumption	4.1	-4.4	-4.5	1.8	4.6	6.5
Government consumption	3.2	-0.8	2.3	3.7	1.3	2.5
Gross fixed investment	2.0	-11.1	-11.5	-1.1	-2.8	23.5
Final domestic demand	3.5	-5.0	-4.4	1.7	2.7	8.2
Stockbuilding ¹	1.6	-0.3	0.3	-0.2	0.6	-0.7
Total domestic demand	5.2	-5.3	-4.1	1.5	3.4	7.4
Exports of goods and services	-5.8	-1.7	6.6	9.8	-2.3	9.9
Imports of goods and services	5.6	-7.8	-8.7	4.1	3.8	16.0
Foreign balance ¹	-3.8	2.1	5.0	2.1	-2.0	-1.4
GDP	1.3	-3.3	0.8	3.6	1.2	5.7
<i>Memorandum:</i>						
Government consumption and investment	3.8	-1.3	4.2	2.2	-0.9	1.9
Private investment	0.9	-13.2	-18.2	0.4	0.6	31.1
Residential	-4.9	-3.3	-5.8	0.0	-9.0	4.0
Business	3.7	-17.5	-24.8	0.5	7.3	45.9

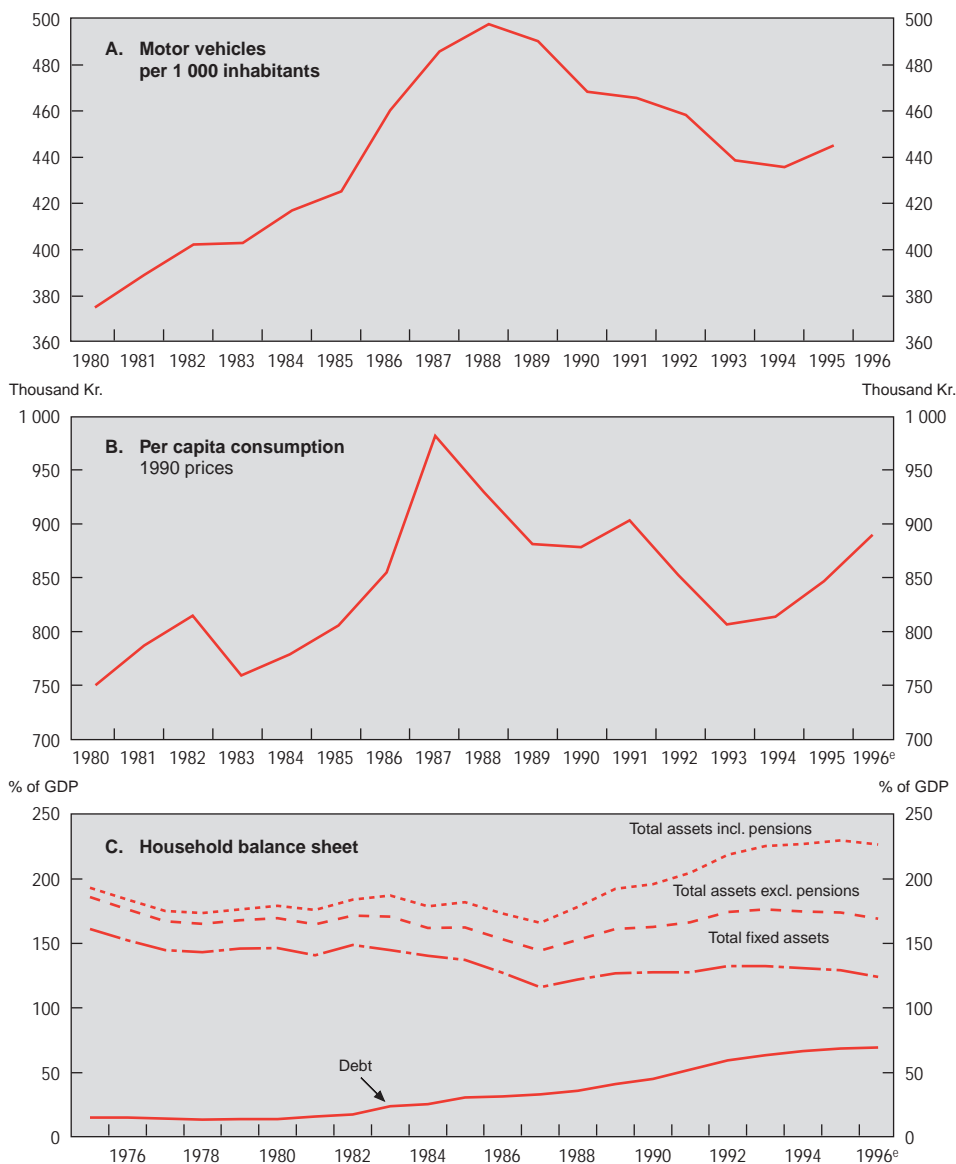
1. Contribution to growth; change in aggregate as a per cent of GDP of the previous year.

Source: OECD.

Indeed, imports of passenger cars were over 40 per cent higher in 1996 than a year earlier. But, with real per capita consumption only now reaching levels recorded in the mid-1980s, most of the rise is probably permanent, reflecting renewed optimism about future income growth. Yet the question of whether households' expenditure decisions are fully sustained or whether such optimism is excessive is apposite.

In theory, the sustainability of rapid consumption growth seen over the last two years should be limited by borrowing capacity. Household debt levels are at record highs. This reflects many factors, including greater access to financial markets, financial market innovation and inflation prospects. Household borrowing has increased in part to finance new residential construction which rose in 1996 for the first time this decade. The rise in indebtedness is probably another reflection of a more buoyant consumer and worker outlook (see below). But it has not been matched on the asset side, because although financial assets, especially those held by pension funds, have been rising as a share of GDP, fixed assets have been edging down relative to GDP. Thus, household balance sheets

Figure 2. **ELEMENTS OF CONSUMPTION**



e: Estimate.

Source: *Statistical Yearbook of Iceland*, Central Bank of Iceland and OECD.

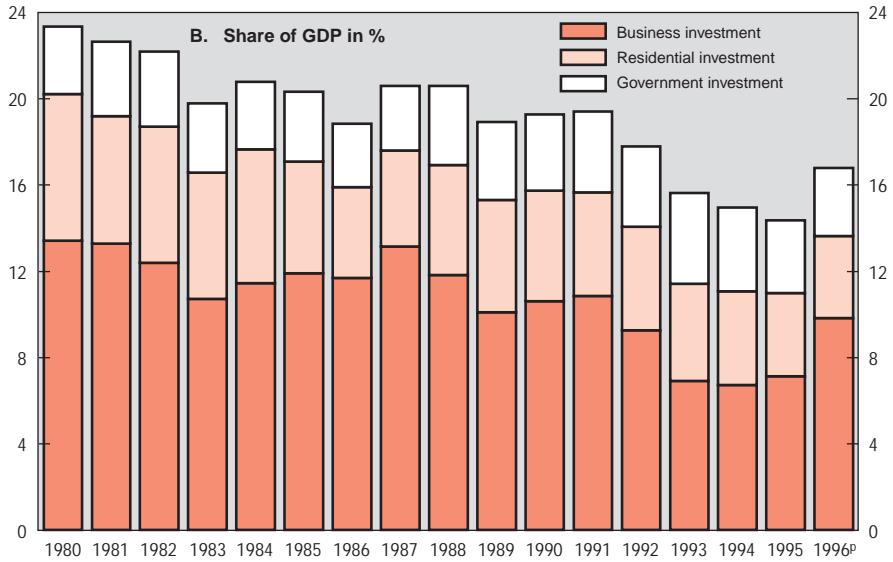
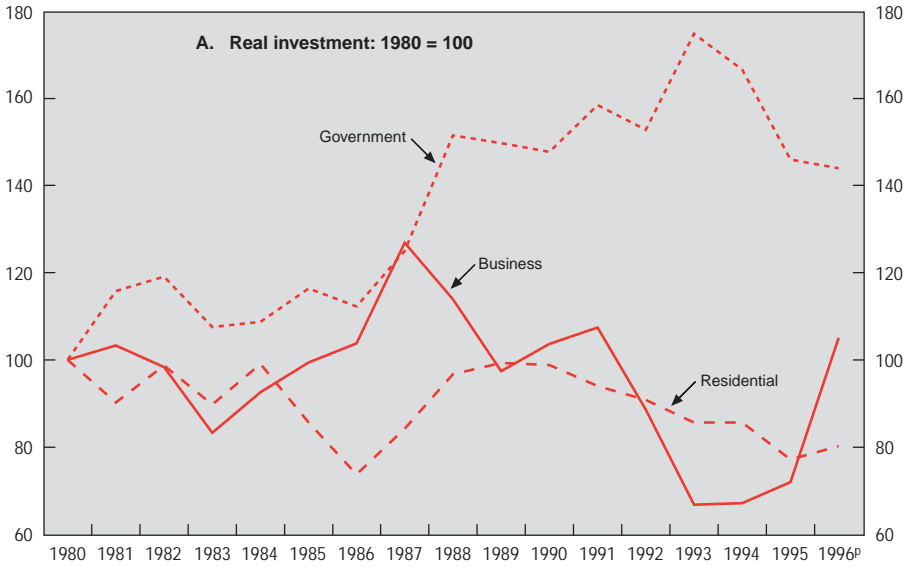
have shown some signs of deterioration, despite large real income gains (see Figure 8 below).

Private business investment boomed in 1996, led by sharp increases in key exporting sectors. Expansion of the aluminium smelter accounted for around one-third of the 46 per cent increase in business fixed investment. In addition, large increases were recorded in fishing and fish processing sectors and also for transport equipment. Coupled with a 7 per cent increase in 1995, business investment finally returned to levels recorded in the late 1980s, even though its share of GDP is still lower than any year in the 1980s (Figure 3). The recovery in business investment reflects the improved outlook for the fishing sector and firms' taking advantage of Iceland's relatively inexpensive energy resources, as well as the improved domestic business climate (as evidenced by rising demand for commercial buildings and computers and office equipment).

Business investment has a relatively high import content. Thus, a significant portion of the rise in investment demand has been satisfied by imports, which has led to deterioration of the current account rather than pressure on domestic resources.¹ This is particularly true for export industries; thus, capacity increases have been accompanied by temporary worsening of the current account, which should be followed by a permanent improvement. For example, about two-thirds of the IKr 14 billion expansion of the aluminium smelter is being spent on imports. When completed, it will boost annual net merchandise exports by about 1 per cent of GDP (exported aluminium less imported intermediate inputs); but its effect on the current account will be smaller, as much of the profit will also flow abroad to its foreign owners.

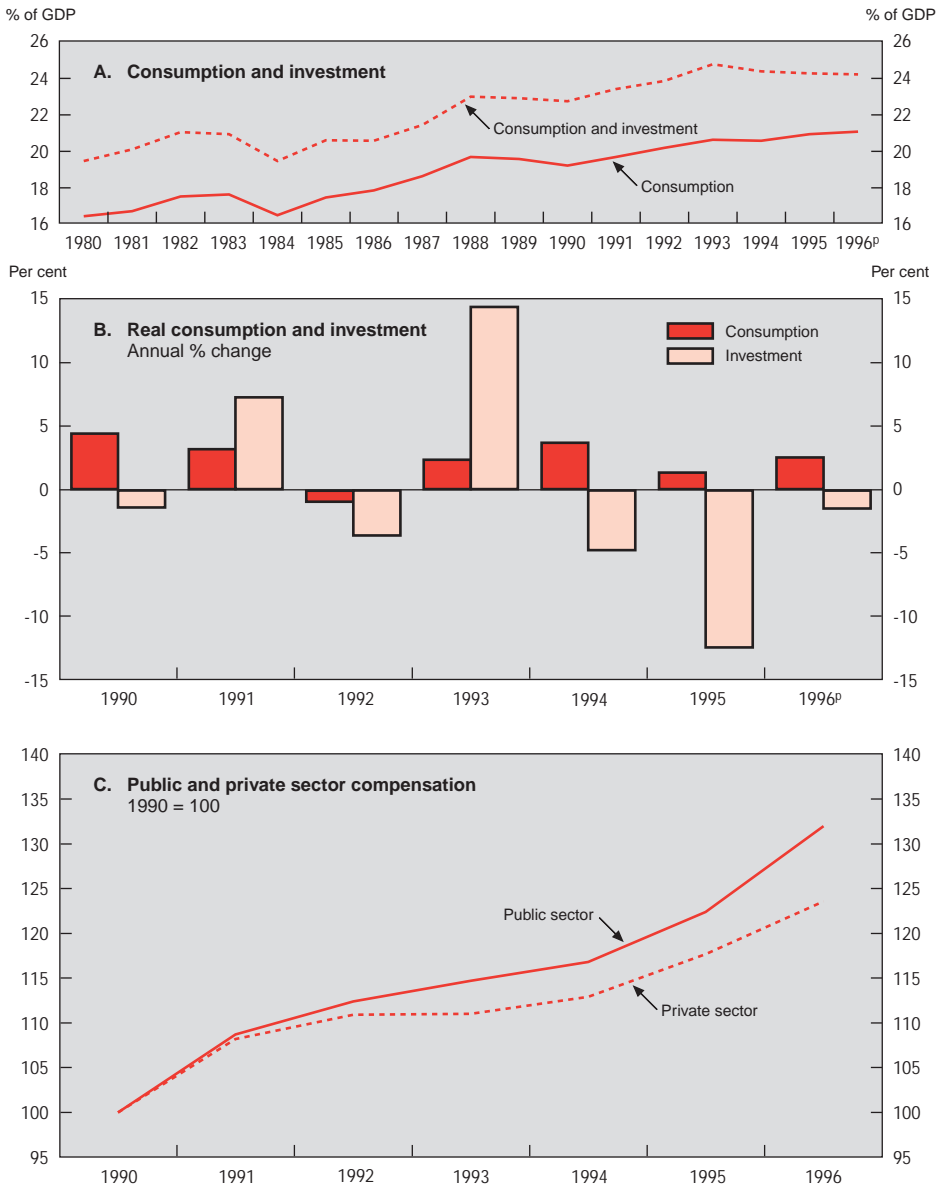
Public-sector spending on goods and services had been underpinning demand in the early 1990s and consequently had been continuing to grow as a share of GDP, reaching nearly one-quarter, compared to less than one-fifth in 1980 (Figure 4). But over the past three years, the spending share has fallen slightly, as real outlays on public investment have declined, while those on government consumption have slowed. However, the impact on demand has not been as great, because of increases in public-sector wages. Indeed, the public-sector deflator has grown 5 percentage points more rapidly than the GDP deflator over the 1990s, and public-sector pay has consistently risen faster than its private-sector counterpart. The net effect of policy changes on taxes, transfer payments

Figure 3. INVESTMENT RECOVERS



p: Preliminary.
Source: OECD.

Figure 4. PUBLIC SECTOR DEVELOPMENTS



p: Preliminary.

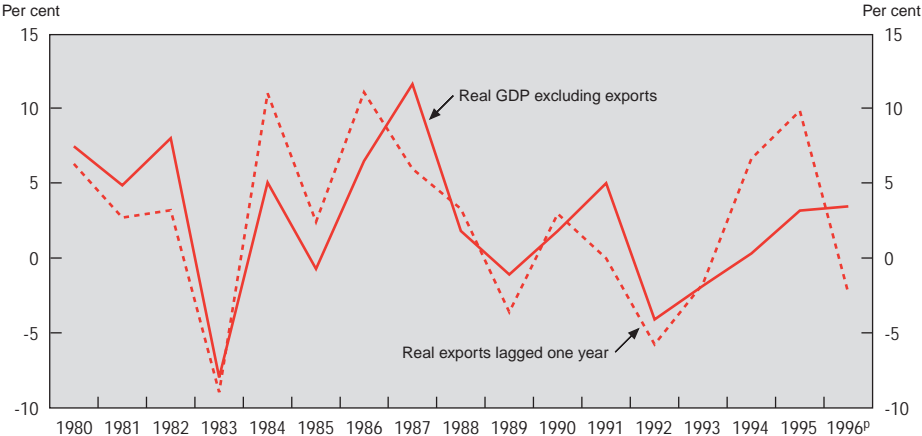
Source: Statistical Yearbook of Iceland, National Economic Institute and OECD.

and subsidies has been to restrain demand: since 1993, the ratio of taxes to GDP has remained constant, while the transfers and subsidies ratios have fallen.

Export sector

The export sector has traditionally been seen as the key for growth prospects. Indeed, monetary policy has often focused on prospects for marine production and aluminium.² In the 1980s and 1990s, export production has had an important impact on the following year's GDP growth, possibly reflecting the lagged effects of income growth on consumption and investment demand (Figure 5). This relationship should be rather loose because other factors obviously affect demand, and the timing and magnitude of the effects from the export sector itself depend upon how expectations are formed. Thus, at face value the strength of GDP in 1996 is surprising, given the poor export outcome in 1995; but the impact of the widely recognised improved prospects in the fisheries and the power-intensive industries has probably been quite important. As well, the

Figure 5. EXPORTS BOOST THE FOLLOWING YEAR'S GDP
Annual percentage change



p: Preliminary.
Source: OECD.

large wage increases garnered in the 1995 wage round would have been an important factor (themselves reflecting the brighter prospects).

Merchandise exports volumes fell 2 per cent in 1995 and rose 10 per cent in 1996, reflecting developments in marine product exports. In addition, for several years exports of manufactured products excluding energy-intensive products had been rising at a double-digit pace, but they stalled in 1996. Nominal exports were much stronger than volumes in 1995, as prices for marine products rose 4½ per cent and aluminium prices, although they weakened throughout the year, were still 15 per cent higher on average than in 1994, reflecting the steep rise at the end of 1994. Export prices fell 1½ per cent in 1996, as fish prices dropped 2½ per cent and aluminium prices continued to fall until late in the year.

Marine product export production looks set for modest growth in the coming years, reflecting improving fish stocks and increased diversification. After many years of declining cod fish stocks in domestic waters, signs of a sustainable recovery are becoming clearer, as estimates of the fishable stock have begun to rise (Table 2).³ During the late 1980s and early 1990s the government responded to declining stocks by implementing ever tighter catch quotas, although always at levels higher than recommended by the Marine Research Institute. In 1995, the government introduced a catch rule to place the fisheries management on a more automatic footing. Using the catch rule, the total allowable catch (TAC) for the 1995/96 fishing year was limited to 25 per cent of the average estimated fishable stock from the 1995 and 1996 censuses (with a minimum catch of 155 000 tonnes). This rule is stricter than the recommendations made by the MRI in the early 1990s and is expected to lead to a long-term build-up in fish stocks towards the maximum efficient yield.⁴ The catch rule led to a TAC of 186 000 tonnes for the current fishing year which began 1 September 1996 (up from 155 000 tonnes in both 1994/95 and 1995/96), and under current projections will allow a TAC of 205 000 tonnes in the 1998/99 fishing year, the same level as in 1992/93.

While the cod stock appears poised for recovery, several other species appear to be being fished at or above their long-term limits. Indeed, many of the other major demersal species are being fished at or above the recommended TACs (Table 3). The stock situation is serious for greenland halibut and redfish. Despite great uncertainty about the optimal size of the catch for some of these species, it is unlikely that there is much room for growth among traditional

Table 2. **Cod catch and stocks**¹

Thousands of tonnes²

	1989	1990	1991	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Total allowable catch									
MRI recommendation ³	300	250	240	250	190	150	130	n.a.	n.a.
Government-set quota	325	300	245	265	205	165	155	155	186
Actual landings	354	333	245	273	240	196	163	156	n.a.
<i>Memorandum:</i>									
Landings as a per cent of recommendation	118	133	102	109	126	131	125	101	n.a.
Fishable stock ⁴	1 024	836	700	547	591	650	620	675	814
Catch rule ⁵	260	233	192	156	155	155	159	162	186

n.a.: not available.

1. Excludes one to two thousand tonnes caught by vessels from the Faroe Islands.
2. Figures for 1989-90 are calendar years and 1991 is for January to August. All other years are fishing years, 1 September to 31 August.
3. Marine Research Institute, for 1995/96 and beyond the recommendation equals the catch rule.
4. Stock in tonnes of fish ages 4 to 14, as estimated by MRI.
5. Catch rule is 25 per cent of average fishable stock with a minimum catch of 155 000 tonnes.

Source: Marine Research Institute.

Table 3. **Marine catch: recommended and actual**

	Recommended TAC ¹		1995 catch ²			Icelandic landings from Icelandic waters		
	1995/96	1996/97	IKr million	Thousands of tonnes		1986-95		
				Total	Icelandic waters	High	Average	Low
Cod	155	186	14 390	203	169	390	299	169
Haddock	55	40	4 412	60	60	66	53	39
Saithe	65	50	2 235	47	47	100	75	47
Redfish	60	65	6 494	89	89	97	92	89
Oceanic redfish	150	n.a.	1 319	29	29	47	18 ⁴	0
Greenland halibut	20	15	4 976	27	27	58	38	27
Halibut	n.a.	n.a.	256	0.9	0.9	1.9	1.4	0.9
Plaice	10	10	1 007	10.6	10.6	14.1	11.8	10.5
Dab	7	7	304	5.6	5.6	5.6	3.1	1.2
Witch	1.4	1.2	196	1.8	1.8	4.6	2.1	0.3
Long rough dab	5	5	274	5.4	5.4	5.4	1.4	0.0
Lemon sole	n.a.	n.a.	110	0.7	0.7	1.1	0.8	0.5
Wolfish	13	13	769	12.6	12.6	16.0	14.0	11.2
Blue ling	n.a.	n.a.	109	1.6	1.6	5.3	2.2	1.6
Ling	n.a.	n.a.	261	3.7	3.7	5.2	4.4	2.9
Tusk	6	6	275	5.2	5.2	6.4	4.4	2.5
Herring	110	100	1 812	285	124	132	100	66
Capelin ³	1 150	1 100	3 216	707	707	1 164	788	258
Capelin roe	n.a.	n.a.	337	8.3	8.3	8.3	3.4	0.5
Icelandic lobster	1.5	1.5	255	1.0	1.0	2.7	2.1	1.0
Shrimp	51	62.6	10 489	83.5	75.8	75.8	49.2	26.8
Icelandic scallop	9.5	9.3	271	8.4	8.4	16.4	10.6 ⁴	8.4

1. Total allowable catch by Marine Research Institute for Icelandic waters.
2. Calendar year.
3. International landings.
4. 1989-95.

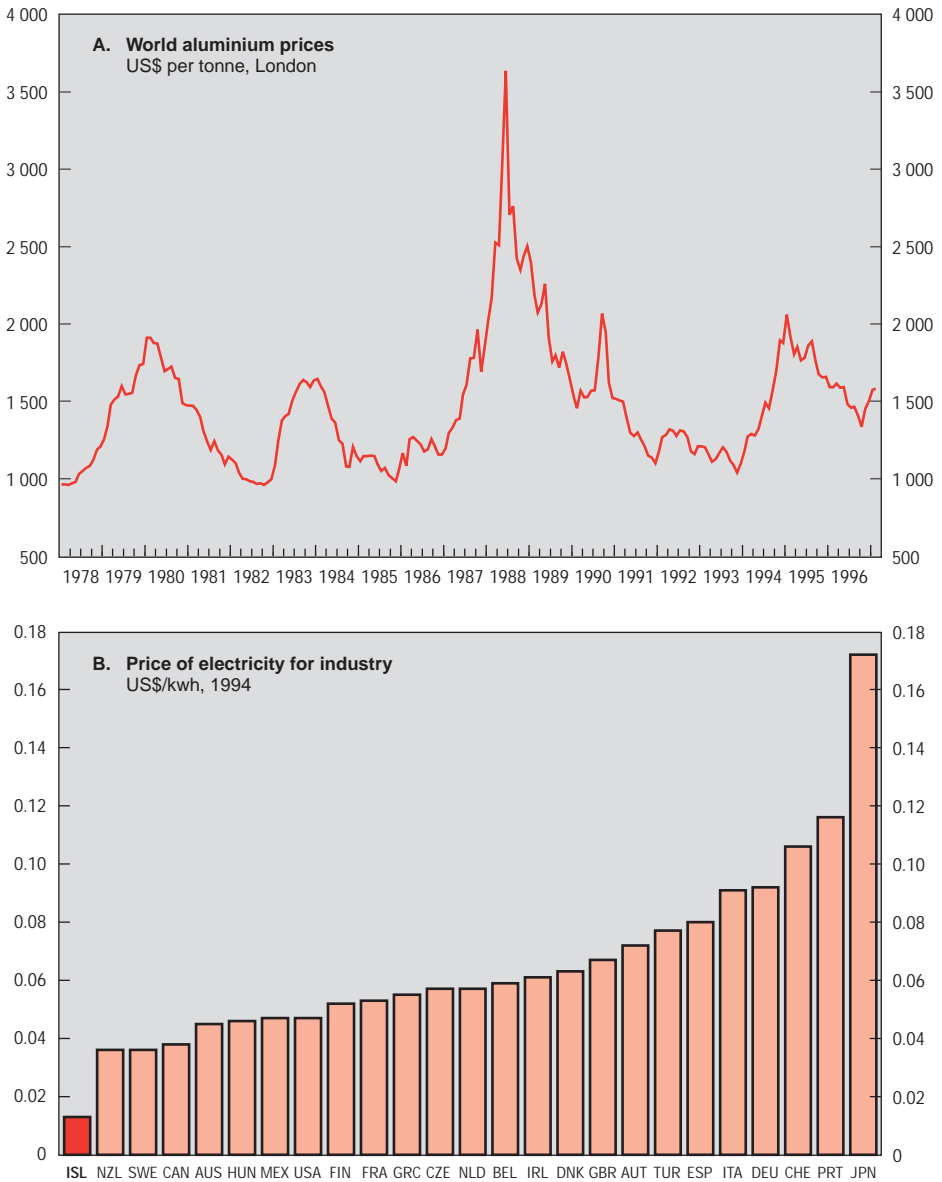
Source: Marine Research Institute.

species taken from Icelandic waters. Some further limited diversification is probably available such as from catches of ling and dab that have grown in recent years. Increased fishing in distant waters is also likely to be restricted by the need to manage those stocks by sharing rights with other countries. An example of this is the agreement between Norway, Russia, Iceland and the Faroe Islands over the Norwegian spring-spawning herring. Yet, prospects for the Barents Sea are uncertain, as an international agreement has yet to be reached there, and the catch there recently has been disappointing. Generating greater value-added through fish processing also appears limited in scope. Although measured productivity gains have been higher than in manufacturing in general, fish processing is still a relatively low-wage industry. In 1996, work permits for the sector were granted to foreigners because of a lack of available labour at the going wage, despite relatively high unemployment rates for the low skilled. Thus, the future of the industry depends upon further mechanisation to boost efficiency and hence wages. That said, further growth can be sustained through increased purchases of fish from foreign fleets. The fishing industry also is increasingly exporting management services both directly and indirectly through foreign direct investment.

Energy-intensive exports appear to have good growth prospects owing to the rise in aluminium prices in 1994 and again of late, and Iceland's relatively cheap energy resources (Figure 6).⁵ Aluminium and ferro-silicon processing already account for 50 per cent of national electricity consumption. Aluminium production has been near plant capacity of around 100 000 tonnes for several years, and a major expansion by 60 per cent was begun in 1996. The expansion is expected to be completed in 1997. The construction of an additional aluminium smelter is also very probable, with negotiations regarding a 60 000 tonne plant nearing completion. If the project moves forward, significant investment in electricity generation facilities would be required. All told, outlays of IKr 12 billion for the smelter and IKr 23 billion for additional generation capacity and other infrastructure would be made largely over a two-year period (summing to about 7 per cent of GDP).⁶ The ferro-silicon plant, now operating near capacity, will also be enlarged.

The sharp rise in investment was an important factor in the growth of imports in 1996. Goods imports soared by 20 per cent in value and 16 per cent in volume terms. In addition, import growth was supported by large increases in

Figure 6. ALUMINIUM AND ELECTRICITY PRICES



Source: OECD.

demand for consumer goods. The rise in oil prices pushed up import prices, which rose by 4 per cent overall.

Saving, investment and the current account

The robust increases in imports virtually eliminated the large merchandise trade surplus (Table 4). Exports of non-factor services surged in 1996, especially in transportation services, reflecting the record level of foreign visitors. Service

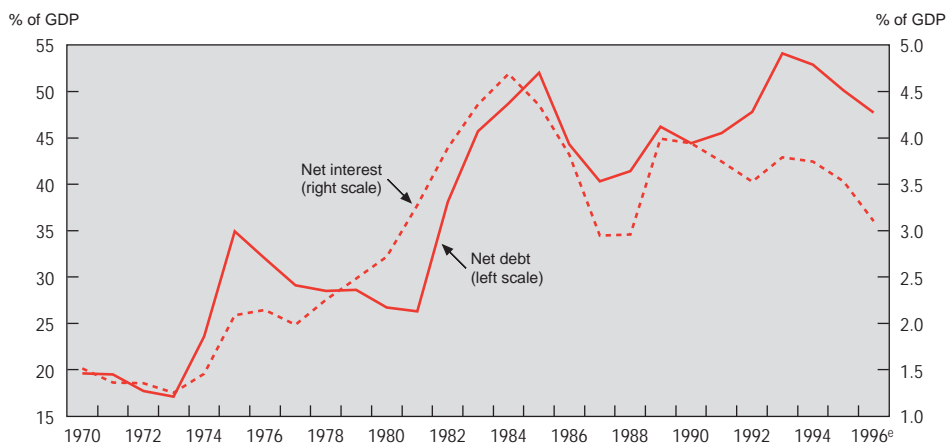
Table 4. **Current account**

IKr billion

	1991	1992	1993	1994	1995	1996
Exports, goods	91.6	87.8	94.7	112.7	116.6	126.2
Marine products	73.2	69.9	74.6	84.8	83.9	92.6
Aluminium and ferrosilicon	9.8	9.7	10.6	13.5	15.5	15.9
Other	8.5	8.2	9.5	14.3	17.2	17.7
Imports, goods	94.6	87.9	82.4	93.0	103.3	124.4
Special investment goods	7.2	7.1	2.2	4.2	3.6	6.4
Other	87.5	80.8	80.2	88.8	99.7	108.0
Merchandise trade balance	-3.1	-0.1	12.3	19.7	13.4	1.8
Exports, non-factor services	33.4	33.4	40.3	43.8	43.4	49.0
Travel	8.0	7.4	8.9	9.6	10.8	10.2
Transportation	13.0	12.2	15.6	18.1	17.3	22.5
Defence force	7.2	7.5	6.8	7.3	7.2	7.2
Other	5.2	6.4	8.9	8.8	8.1	9.1
Imports, non-factor services	35.7	34.0	40.1	41.6	41.5	49.1
Travel	17.5	16.6	17.9	17.9	18.2	20.6
Transportation	11.3	10.8	12.8	12.1	13.4	17.0
Other	6.9	6.6	9.3	11.7	9.9	11.6
Non-factor services balance	-2.3	-0.6	0.2	2.2	1.9	-0.2
Net compensation	2.1	2.3	2.5	2.5	2.9	3.9
Interest receipts	1.8	2.4	2.6	2.7	2.6	2.6
Interest expenditure	16.6	16.0	17.2	18.0	17.1	17.1
Factor income balance	-12.7	-11.3	-12.1	-12.8	-11.6	-11.6
Unrequited transfers	-0.3	-0.4	-0.2	-0.9	-0.4	-0.3
Current account balance	-18.3	-12.4	0.2	8.1	3.3	-9.1

Source: *Statistical Abstract of Iceland* and National Economic Institute.

Figure 7. **FOREIGN DEBT AND INTEREST PAYMENTS**
% of GDP



e: Estimate.

Source: Central Bank of Iceland.

imports rose sharply in 1996, reflecting transportation expenses for rising goods import volumes. The balance on factor services remained distinctly negative, as many years of foreign borrowing has led to foreign indebtedness of around half of GDP and, therefore, substantial net interest payments (Figure 7). The current account swung from a surplus of nearly 2 per cent of GDP in 1994 to a like-sized deficit in 1996, with two-thirds of the deterioration occurring last year.

The current account surplus is the excess of national saving over investment. The shift to deficit in 1996 is a consequence, in part, of the rise in investment (Figure 3) that has occurred. What has troubled some analysts, and the Central Bank as well, is not the deterioration of the current account *per se*, but that it has moved into deficit when investment is still at a relatively modest level historically, reflecting the fact the national saving is relatively low (Table 5). For although government saving has improved over the past two years, private saving has fallen, as is reflected in the consumption boom.

Table 5. **Saving, investment and the current account**

Per cent of GDP

	Gross investment	Current account	Gross national saving			Net lending ¹	Net investment	Net national saving
			Total	Private	Government			
1970-74	29.8	-4.1	25.8	20.6	5.1	0.0	16.8	12.8
1975-79	28.5	-2.7	25.8	21.8	4.0	-0.2	15.3	12.6
1980-84	23.9	-4.1	19.8	15.3	4.5	0.9	11.2	7.1
1985-89	17.8	-2.3	15.5	14.4	1.0	-2.6	5.8	3.5
1990-94	17.0	-1.5	15.5	15.1	0.4	-3.7	4.3	2.8
1992	17.4	-3.0	14.4	13.1	1.2	-2.8	4.4	1.4
1993	15.7	0.1	15.8	16.0	-0.2	-4.5	2.4	2.5
1994	15.1	1.9	17.1	17.8	-0.7	-4.7	2.1	4.0
1995	15.7	0.8	16.4	16.3	0.1	-3.1	3.0	3.7
1996 estimate	17.2	-1.9	15.3	14.4	0.9	-1.7	5.3	3.4

1. Net government saving less government investment.

Source: *Statistical Yearbook of Iceland*, National Economic Institute and OECD.

Wages and prices

One of the major factors behind the revival of domestic demand has been the wage increases negotiated in 1995 by the private and public sector unions (Figure 8). The wage index excludes the effects of bonuses, hours of work and overtime income. Judging from income tax returns, real income may now have recovered from the negative shocks of the late 1980s and early 1990s.

The sharp rise in real wages has been surprising, given that the negotiations occurred in spring 1995 when unemployment was at record highs (Figure 9). However, throughout the 1990s real wages have appeared much less responsive to the unemployment rate than in the 1980s. Workers in 1995 were apparently feeling more secure in their jobs than before. For example, hours lost to strikes have risen (Figure 27 in Chapter IV), and workers appear to have more upbeat assessments of their employment prospects. In 1995 more workers were looking for another job, and fewer of these saw risks of losing their current job, than had been the case in 1992 or 1993 (Table 6). The spring 1995 agreement covered most private-sector employees until end-1996. The pact provided for wage increases in two stages worth from slightly over 5 per cent to about 15 per cent (higher amounts for the lower paid), with an average for the two-year period of about 7 per cent. In the event, wages have risen faster than this for several reasons. First, there has been some upward wage drift. The central agreement provides only a baseline for individual agreements that incorporate local, firm- or industry-specific developments. Second, the agreement was reopened in early 1996 granting a further 1 to 2 per cent boost. Third, other agreements granted larger increases, such as the public-sector agreements for teachers and nurses.

The 1995 agreement expired at the end of 1996, without a new agreement in place, despite the new labour law whose passage, it was hoped, would speed negotiations (see Chapter IV). In March 1997, three-year wage agreements were reached initially with just a few individual unions and later more generally in the private non-bank sector as the negotiation process became more decentralised. These accords called for three-year increase in base wages of about 13 per cent, with the largest increase in the first year. The minimum wage was scheduled to rise from around IKr 55 000 per month to IKr 70 000 by 1998 (in most cases), and there were no reopening clauses.

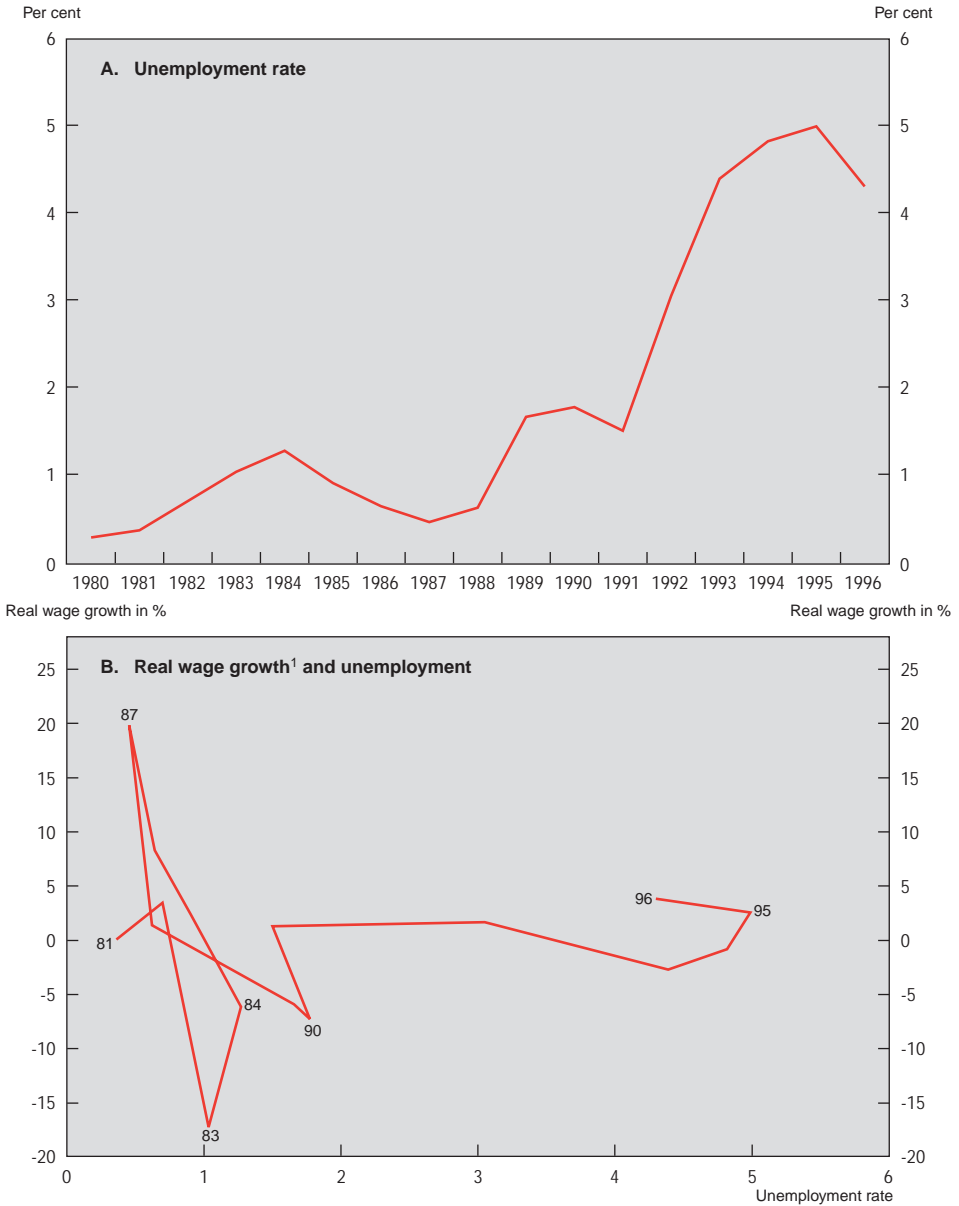
Figure 8. WAGE DEVELOPMENTS



e: Estimate.

Source: Statistical Yearbook of Iceland and OECD.

Figure 9. UNEMPLOYMENT



1. Wages deflated by consumer prices.
 Source: Statistical Yearbook of Iceland and OECD.

Table 6. **Employed persons seeking another job**

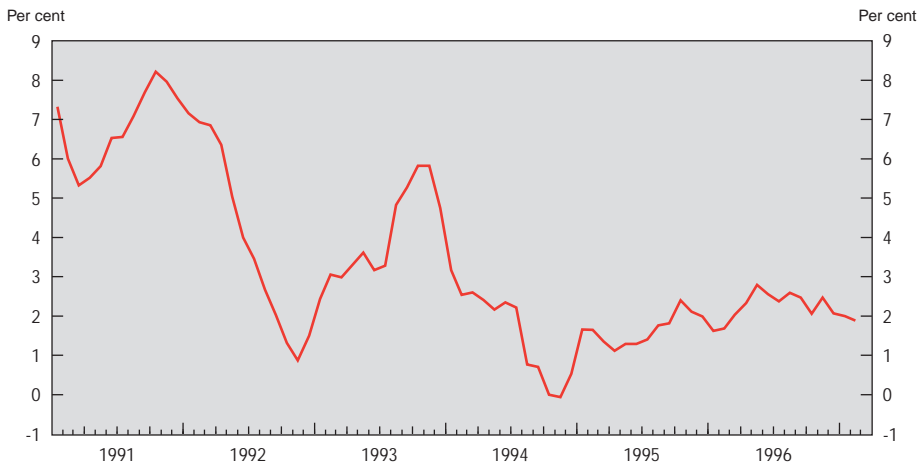
Per cent of employed

	1991	1992	1993	1994	1995
Seeking job	9.0	7.7	8.3	8.8	9.5
Risk of loss of present job	0.5	0.9	0.7	0.6	0.5
Present job temporary	1.9	1.2	1.2	1.4	1.0
Seeking better conditions	4.2	3.4	4.0	5.2	5.7
Other reasons	2.3	2.2	2.3	1.7	2.3

Source: *Labour Market Statistics.*

Figure 10. **INFLATION PERFORMANCE**

Percentage change in consumer prices from twelve months earlier



Source: Central Bank of Iceland.

Unemployment fell to $4\frac{1}{4}$ per cent on average in 1996, from 5 per cent in 1995, and there are anecdotal reports of shortages of certain types of skilled workers. Thus, labour markets have tightened somewhat. Over the long haul wage gains have to be met by increases in productivity and terms-of-trade improvements, or they will be absorbed by lower profits if they are not to push prices up. But consumer prices did begin to accelerate slightly in 1995 and more clearly in 1996 (Figure 10). The importance of rising wage costs to this pick-up

Table 7. **Decomposition of consumer prices**

Per cent change

	Total	Domestic goods	Imported goods	Housing	Goods and services subject to public price regulation	Other services
Importance	100.0	18.7	35.1	14.8	8.7	22.7
1993	4.1	2.2	7.3	0.1	9.2	3.7
1994	1.6	-1.8	3.0	0.1	3.9	2.2
1995	1.7	2.7	1.4	2.9	-0.2	1.1
1996	2.3	2.6	2.5	-0.3	2.3	3.2

Source: Statistical Bureau of Iceland, *Monthly Statistics*.

is, however, unclear. Estimates of profits as a share of gross factor income indicate that profit margins did not widen so that the rise in prices largely reflects higher costs. That said, a portion of the acceleration reflects a pick-up in import prices, notably oil, and a rebound in prices of goods and services subject to public price regulation, neither of which reflect domestic demand pressures (Table 7). Price inflation for domestically produced consumer goods edged down in 1996, but prices of services accelerated sharply. Thus, there is some evidence that wage increases were beginning to put upward pressure on inflation in 1996, although consumer price increases slowed in early 1997, as food prices reversed some of their earlier gains.

Short-term economic prospects

The outlook for output and income looks extremely buoyant over the next few years, as continued robust domestic demand growth drives resource utilisation rates higher. Domestic demand should be fuelled by the torrid pace of investment related to the energy intensive sector – the completion of the expansion of the existing aluminium plant, the construction of an additional plant, new ferro-silicon capacity and the substantial associated investment in harbours and electricity generation and distribution. In addition, investment is now rising in other sectors of the economy. While investment needs are met in large part by imports, there is nonetheless substantial domestic content. The resulting rise in activity will boost incomes, pushing up private consumption. The export sector

may be a moderating factor in 1997 owing to capacity constraints in the fisheries and energy-intensive sectors, but as these constraints ease export production should pick up in 1998 and beyond. Overall, the economy may grow 4½ per cent in 1997, with only a modest slowdown in 1998 (Table 8). The unemployment rate should continue to fall, reaching 3½ per cent in 1998.

The pace of economic growth during the projection period depends critically upon several developments. First is the strength of domestic investment. These projections assume that investment related to an additional aluminium plant is begun in 1997, resulting in investment of IKr 13 billion in 1997 and IKr 17 billion in 1998 and some IKr 5 billion in later years. The impact on growth is about 1½ percentage points during the construction phase; in the medium term the level of potential output could be boosted by around 1 per cent. If this project does not

Table 8. **Short-term projections**
Percentage changes, volume (1990 prices)

	1996	1997		1998
		Official forecast April 1997	OECD	OECD
Private consumption	6.5	5.0	5.0	3.7
Government consumption	2.5	2.0	1.5	1.5
Gross fixed capital formation	23.5	20.0	22.9	3.6
Final domestic demand	8.2	7.0	7.4	3.2
Change in stockbuilding ¹	-0.7	0.0	0.0	0.0
Total domestic demand	7.4	7.0	7.4	3.2
Exports of goods and services	9.9	2.8	4.1	5.0
Imports of goods and services	16.0	12.7	12.3	3.6
Change in foreign balance ¹	-1.4	n.a.	-2.6	0.5
GDP	5.7	3.5	4.6	3.8
GDP implicit price deflator	1.8	3.7	2.7	3.4
Consumer price deflator	2.3	2.5	2.5	3.3
Unemployment rate (in per cent)	4.3	3.7	3.7	3.4
Current balance ²	-1.9	-5.0	-3.9	-3.2
3-month Treasury Bill	6.9	n.a.	7.5	7.8
5-year indexed Treasury Bill	5.6	n.a.	6.0	6.0

n.a.: not available.

1. As a percentage of GDP in the previous period.

2. As a percentage of GDP.

Source: National Economic Institute and OECD.

move forward or is delayed beyond the spring, then demand would probably be weaker than projected in 1997. Likewise if other large projects are delayed, such as the expansion of the ferro-silicon plant, then demand may be weaker than expected.

Equally important to the outlook are the outcomes of the 1997 wage negotiations. These projections assume average annual wage increases of 6 per cent, including subsequent wage drift, only slightly more than the agreements made in mid-March. The outcome has important ramifications on the outlook for consumption and inflation. The projections assume that the household saving rate continues to decline a bit, as is normal during an upturn as pent-up demand is satisfied and consumers are willing to borrow based on a healthy labour-market outlook. The wage outcome will also be the key factor in determining cost pressures on domestic producers and thus inflation. The OECD's projections assume that some of the wage increase can be offset by rising productivity and lower margins owing to growing foreign competition resulting from the EEA agreement, but that domestic prices will accelerate noticeably, with inflation rising above 3½ per cent by the end of next year.

Fiscal policy is assumed to be only marginally restrictive in accord with the 1997 budget, the tax reform (see Chapter II) and the medium-term framework. Given robust income growth and an elastic tax system, receipts should rise as a share of GDP, dampening demand somewhat, although the tax cuts proposed in March may offset much of this effect. If spending overruns are prevented, then expenditures should grow more slowly than trend GDP, also providing some fiscal drag, and the budget would record a healthy surplus. Monetary policy is projected to tighten in order to meet its objectives of price and exchange rate stability. Interest rates are expected to rise enough to dampen domestic demand somewhat, housing in particular. But these increases may be limited by the need to prevent capital inflows from pushing the exchange rate outside its official target band.

Besides these three key assumptions concerning a new aluminium plant, wage negotiations and the stance of policy, there are other uncertainties. As always, marine production is subject to great uncertainty owing to the uncertain level of stocks. But here policies have become more predictable in recent years with the development of the catch rule for cod. Household consumption may deviate from the accompanying projections even if incomes are in line, if exuber-

ance leads to greater borrowing and spending or if concern about balance sheets leads to more saving. Finally, the speed and degree of pass-through of wage costs into prices have not been tested in the still new low-inflation environment. The results from 1996 suggest that this may be slower than previously, perhaps reflecting the greater openness of the economy, greater price consciousness of buyers and the resulting smaller degree of producer pricing power when inflation is low. Thus, while the key uncertainty is whether the large projects in the energy-intensive sector move forward, the key risk is that the economy may race ahead of capacity and begin to overheat.

II. Economic policies

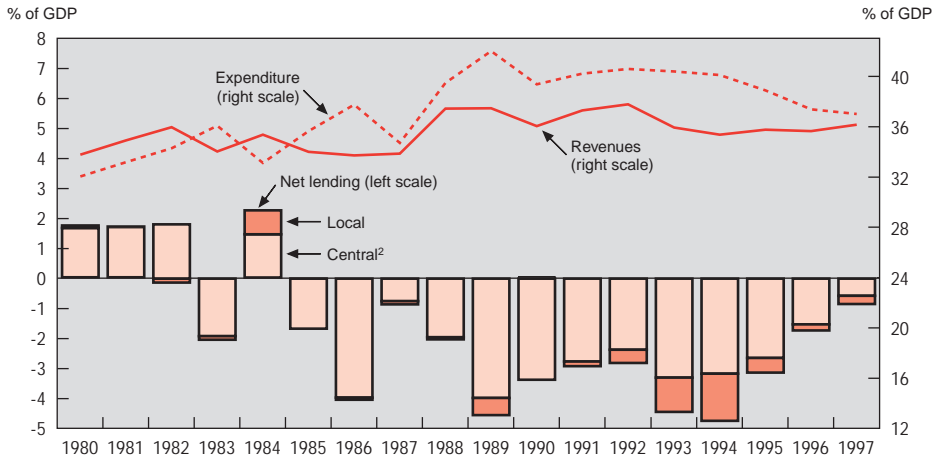
The principal objective of economic policy in recent years has been the maintenance of stability. It is recognised that only in a stable environment are conditions likely to be conducive to the economic growth process. Low inflation and a stable exchange rate are regarded as necessary parts of that environment. Sound public finances as proxied initially by a balanced State budget have also been a central goal. Another is a legal and regulatory context which is comparable to that in other countries. Thus, efforts have been and are being made to reduce government regulatory intervention in the economy, to increase the role of market forces and to let competition play a greater role.

Fiscal policy: balancing the budget

General government finances have improved significantly over the past two years (Figure 11). From 1994 to 1996 revenues shot up nearly 15 per cent, reflecting the strong growth in incomes as tax policies were little changed. Over the same period, expenditures expanded just over 6 per cent, implying virtually no growth in real terms.⁷ As a consequence, the general government deficit declined from 4¾ per cent of GDP in 1994 to an estimated 1¾ per cent of GDP in 1996. Nearly half of the improvement came from local government budgets which had deteriorated in the early 1990s. But the Treasury's finances also improved markedly.

The stance of fiscal policy cannot be easily judged in Iceland, because it is difficult to disentangle cyclical from structural changes in output. Some supply shocks to the export sector appear to be permanent or of long duration, but changes in levels of resource utilisation as indicated by the unemployment rate indicate that some of the fluctuations in incomes reflect shorter-term cyclical rather than more durable changes. A rough guide to the amount of structural

Figure 11. GENERAL GOVERNMENT FINANCES¹



1. 1996 is an estimate and 1997 is a projection.

2. Includes social security.

Source: National Economic Institute.

improvement in the public finances can be constructed by using trend GDP to adjust revenues and making a judgement about the cyclical portion of unemployment benefit payments.⁸ Adjusted for deviations from trend output, two-thirds of the improvement in the deficit over the past two years seems to be structural (Table 9). All of the improvement in 1995 and half of the more substantial improvement in 1996 may be structural. The trend-adjusted general government deficit may also indicate a different policy stance from that of the general government deficit or the Treasury's cash budget. Such is the case for the 1992-94 period when the trend-adjusted deficit deteriorated sharply while the Treasury's cash deficit was stable. The difference reflects the widening in the local government deficits and the effects of the "cyclical" upturn in the economy in 1994.

Over the past two years the Treasury's cash budget has shown less improvement than its national accounts counterpart, which is recorded on an accruals basis. In addition, the central government's budget deficit on a cash basis has tended to be much smaller, chiefly reflecting treatment of employee pension

Table 9. Measures of fiscal stance¹Per cent of GDP²

	Trend adjusted general government			Actual surpluses				Gap ⁵	Trend growth
	Revenues	Expenditures	Surplus	General	Central	Local	Treasury ³		
1980	34.0	33.3	0.6	1.3	1.2	0.1	-0.5	2.5	4.3
1981	35.0	35.0	0.0	1.0	1.2	-0.2	-0.3	2.8	4.0
1982	35.9	34.8	1.1	1.7	1.8	-0.1	0.5	1.4	3.7
1983	33.5	34.6	-1.2	-2.0	-2.1	0.0	-1.3	-4.1	3.4
1984	35.3	32.0	3.3	2.2	1.3	0.9	0.7	-3.3	3.2
1985	33.9	34.6	-0.7	-1.7	-1.7	0.1	-1.9	-3.1	3.1
1986	34.0	37.9	-3.9	-4.0	-4.1	0.0	-1.2	0.1	2.9
1987	34.5	36.8	-2.3	-0.9	-0.9	0.1	-1.3	5.9	2.6
1988	37.9	40.9	-3.0	-2.0	-2.0	-0.0	-2.8	3.5	2.2
1989	37.7	42.8	-5.0	-4.6	-4.0	-0.6	-1.9	1.9	1.8
1990	36.3	39.9	-3.6	-3.3	-3.3	-0.0	-1.2	1.5	1.6
1991	37.5	40.8	-3.3	-2.9	-2.8	-0.1	-3.2	1.3	1.5
1992	37.2	39.0	-1.8	-2.8	-2.4	-0.4	-1.8	-3.4	1.4
1993	35.2	38.4	-3.3	-4.5	-3.4	-1.1	-2.3	-4.1	1.6
1994	34.9	39.0	-4.1	-4.7	-3.1	-1.7	-1.7	-2.5	1.8
1995	35.3	37.7	-2.4	-3.1	-2.8	-0.4	-2.0	-2.4	2.0
1996 ⁴	35.8	37.6	-1.8	-1.7	-1.5	-0.2	-0.6	0.7	2.2
1997 ⁴	36.4	37.6	-1.2	-0.8	-0.8	-0.1	0.0	1.5	2.3

1. National accounts, accruals basis except as noted.

2. Trend GDP or actual GDP according to measure.

3. Cash basis.

4. Based on government projections.

5. Ratio of actual to trend GDP less 1, expressed as a per cent. See text for details.

Source: OECD.

obligations and accrued interest. Thus, while the Treasury budget calls for a small surplus in 1997, on a national accounts basis a central government deficit of $\frac{3}{4}$ per cent of GDP would remain.

Recent outcomes for the Treasury budget

Against the backdrop of favourable economic conditions in late 1994 the government planned to reduce the budget deficit from an expected IKr 11 billion in 1994 to IKr 7½ billion in 1995, a reduction of around $\frac{3}{4}$ percentage point of GDP (Table 10). In the event, tax revenue proved to be stronger than expected in 1994, and that year's deficit was already IKr 7½ billion; thus, the deficit target was not as ambitious as originally thought. As passed in December, the budget aimed at holding expenditure growth to only 2 per cent in 1995 by virtually freezing aggregate wage outlays (reflecting expected efficiency gains offsetting modest wage hikes), by reforms in the social security system (in particular the health care sector) and by reducing capital expenditures by over 10 per cent. No major actions were taken on the tax side.

In the spring the government helped conclude the wage negotiations (first with private-sector workers and then with public-sector employees) by agreeing to reduce taxes by IKr 0.6 billion in 1995 and increase spending by IKr 2.1 billion,⁹ although it vowed to offset this easing in future budgets. Later in the year, additional appropriations and other discretionary decisions increased spending by over IKr 1 billion, and delays in implementing the reforms to the health care system boosted spending by IKr 0.9 billion. All told, the government added IKr 4.6 billion, or 1 percentage point of GDP, to the deficit. However, much of the discretionary easing of fiscal stance was offset by stronger-than-expected receipts growth, and the 1995 deficit outcome was only IKr 1.5 billion higher than when the budget was passed, with an equivalent widening over the 1994 outcome.

The effects of the deficit-increasing decisions taken by the government to conclude the 1995 wage negotiations made it more difficult for it to fashion a budget that would halve the deficit in 1996 with the goal of eliminating it in 1997. Economic activity was projected to remain moderate, with an assumed real GDP growth rate of 2 per cent and inflation edging up to the 2 to 2½ per cent range. In the event, the budget was passed with a projected deficit of only IKr 4 billion (0.8 per cent of GDP). Again, the government was looking to

Table 10. Treasury finances

IKr billion

	1992	1993	1994	1995		1996	
	Outcome	Outcome	Outcome	Budget	Outcome	Budget	Outcome
Total revenue	103.4	103.2	109.6	112.1	114.4	120.9	127.7
Direct taxes	29.9	30.2	33.7	33.7	36.1	38.3	42.9
Personal income	13.2	12.8	15.9	15.2	16.8	17.3	21.4
Corporate income	3.3	3.3	3.3	3.7	4.2	4.6	4.2
Wealth	3.5	3.8	3.6	3.4	3.6	3.6	3.8
Social security	10.0	10.4	10.9	11.4	11.5	12.9	13.6
Indirect taxes	65.9	65.9	68.0	70.8	69.9	74.7	76.6
VAT	39.9	40.5	40.9	42.2	42.4	45.8	45.7
Import duties and excises	8.2	7.7	8.0	8.7	8.8	9.4	10.5
Other	17.7	17.7	19.1	19.9	18.7	19.4	20.4
Other revenue	7.7	7.1	7.9	7.6	8.4	7.9	8.2
Total expenditure	110.6	112.9	117.0	119.5	123.3	124.8	139.7
Consumption	44.9	47.7	48.7	49.2	51.8	54.3	56.4
Wages	34.7	36.0	37.4	36.5	39.6	41.8	42.3
Other	10.2	11.7	11.4	12.7	12.2	12.5	14.0
Transfer payments	46.2	43.1	45.1	46.4	47.9	48.4	49.5
Social security	28.9	29.0	30.7	30.2	32.7	32.8	33.4
Unemployment benefits	1.8	2.3	2.8	3.3	3.5	3.0	3.0
Agricultural subsidies	9.4	6.5	5.7	5.7	5.7	5.7	6.1
Student Loan Fund	2.0	1.7	1.5	1.5	1.5	1.5	1.5
Other	5.9	5.9	7.1	9.1	8.0	8.5	8.6
Interest payments	8.3	9.7	10.7	12.3	12.4	13.1	23.8
Redemptions	0.0	0.0	0.0	0.0	0.0	0.0	10.0
Other	8.3	9.7	10.7	12.3	12.4	13.1	13.8
Capital expenditure	11.1	12.3	12.5	11.6	11.2	9.0	10.0
Revenue balance	-7.2	-9.6	-7.4	-7.4	-8.9	-4.0	-12.0
Excluding redemptions	-7.2	-9.6	-7.4	-7.4	-8.9	-4.0	-2.0
<i>Memorandum:</i>							
Per cent of GDP ¹							
Revenues	26.0	25.1	25.2	25.3	25.1	25.2	25.8
Expenditures	27.8	27.5	26.9	27.0	27.1	26.0	28.2 ²
Revenue balance	-1.8	-2.3	-1.7	-1.7	-2.0	-0.8	-2.4 ²

1. Using GDP projection from budget proposal.

2. Excluding bond redemptions expenditures were 26.2 and the revenue balance was -0.4 per cent of GDP.

Source: Ministry of Finance.

spending moderation to reach its objectives. Non-interest expenditures were expected to rise a scant $\frac{3}{4}$ per cent, reflecting a 20 per cent reduction in capital expenditures, 8 per cent decline in maintenance and no growth in transfer payments due to efficiency gains in health care. The only growth was in wage

payments, reflecting the previous year's wage negotiations with public-sector employees. Revenues were expected to remain about constant as a share of GDP, as the reduction from the phase-in of the exemption of employees' required pension contributions was expected to be offset by an increase in social security taxes and rising effective personal income tax rates due to bracket creep.¹⁰

The 1996 outcome was slightly better than expected, owing to much stronger economic growth: the underlying deficit (see below) was IKr 2.0 billion (0.4 per cent of GDP). Indeed, revenues shot up 11.6 per cent in 1996 rather than the 5½ per cent projected at the beginning of the year. As has been the case for many years, non-interest outlays exceeded expectations (see Diagram 6 in the 1995 Survey) by IKr 5 billion or 5 per cent. Chronic overruns in the health sector led to IKr 1.3 billion in extra consumption and transfer payments. Wage costs were also IKr 0.6 billion or 1.4 per cent higher, in part because public-sector wage agreements made after the budget was passed were larger than projected. Capital expenditures did not fall as much as planned.

Interest expenditures were nearly twice as high as expected owing to the effects of the early redemption of some Treasury securities. Iceland's cash accounting system records as interest expense the coupon payments plus, at the time that an indexed bond is redeemed, the cumulative inflation adjustment to the principal. In 1996 the Treasury called about IKr 17 billion of bonds maturing in the year 2000, of which IKr 10 billion was accumulated inflation adjustments, boosting the deficit by that amount.¹¹ Under accrual accounting methods used in preparing the national accounts these payments are spread throughout the lives of the bonds. Thus, these payments can be ignored when examining the change in the cash deficit from year to year, or between budget plans and outcomes. The accrual accounting gives a more accurate portrayal of fiscal stance than the current cash accounting.

The 1997 Treasury budget

Having successfully halved the cash deficit in 1996 to about ¾ per cent of GDP (excluding the effects of the bond redemption), the 1997 budget aims to eliminate the deficit this year, again through pressure on spending programmes. In addition, a major reform of pensions for public-sector employees was enacted, and expenditures and revenues for the primary school system were transferred to the local governments (see Chapter III).

The budget assumes that the wage round results in wage increases of 3½ per cent which would moderate consumption demand from its rapid 1996 pace. No allowance is made for additional projects in the energy-intensive sector. Thus, growth of real GDP is projected to slow to 2½ per cent and price inflation to 2 per cent. State revenues, adjusted for the transfer of a portion of income taxes to local governments as compensation for the devolution of schooling responsibilities so as to make them comparable to 1996, are projected to rise more slowly than nominal GDP (Table 11). Growth of income tax receipts is projected to be robust, reflecting strong income growth and bracket creep. Beginning in 1997, a consolidated tax on capital income will take effect. Previously, interest income was exempt, while dividends, capital gains and rent were subject to the 42 per cent income tax. Now, all capital income will be subject to a uniform tax rate of 10 per cent. It is expected that these changes will not affect Treasury revenues on a cash basis until 1998 when revenues may rise by IKr 400 million.¹² In addition, over the next several years, the two-tier social security tax system will be merged into a single rate with no revenue consequences. Finally, import duties and excise taxes are projected to grow slowly as some tax rates fall. In March, in part to help conclude the wage negotiations, the government proposed some important reforms to the personal income tax.¹³ If implemented, the gross tax cuts would reduce the amount of fiscal drag inherent in the current system and reduce revenues by nearly 1 per cent of GDP in 1999 when fully phased in. The net budgetary impact would be essentially zero this year but around IKr 2 billion in 1998 and 1999.

Expenditures, adjusted for the change in school financing, are projected to grow only 2 per cent in 1997. Many spending areas are projected to be held constant in nominal terms and thus to fall 2-3 per cent in real terms, reflecting efficiency gains and increases in service charges. An important exception is the wage bill, which is projected to rise by 4.7 per cent, based on the assumption that wages rise by 3½ per cent on average. In addition, the increase reflects the changes to the public employee pension system.

Unlike the extensive private pension system, the public employee system was essentially a pay-as-you-go system because contributions were sufficient to pay only about half of the accrued pension rights. By 1995 the unfunded liabilities had reached IKr 100 billion, about twice that year's general government wage bill or 20 per cent of GDP. Besides the future stress on budgets, this created

Table 11. **The 1997 Treasury budget**

IKr billion

	1996		1996 Adjusted	1997 Budget	1997/96 % change
	Outcome	Adjustment ¹			
Total revenue	127.7	-5.9	121.8	126.2	3.6
Direct taxes	42.9	-5.9	37.0	39.3	6.0
Income	25.6	-5.9	19.7	21.3	8.4
Personal	21.4	-5.9	15.5	16.8	8.4
Corporate	4.2	0.0	4.2	4.6	8.5
Wealth	3.8	0.0	3.8	3.8	-1.1
Social security	13.6	0.0	13.6	14.2	4.5
Indirect taxes	76.6	0.0	76.6	78.6	2.7
VAT	45.7	0.0	45.7	48.6	6.3
Import duties	10.5	0.0	10.5	9.5	-9.3
Other	20.4	0.0	20.4	20.6	1.1
Other revenue	8.2	0.0	8.2	8.3	1.3
Total expenditure	139.7	-15.3	124.4	126.1	1.4
Consumption	56.4	-6.4	49.9	50.9	2.0
Wages	42.3	-6.3	36.0	37.7	4.7
Other	14.0	-0.1	13.9	13.2	-5.1
Transfer payments	49.5	1.2	50.8	51.9	2.3
Social security	33.4	0.0	33.4	33.7	0.8
<i>of which:</i>					
Unemployment benefits	3.0	0.0	3.0	2.9	-5.9
Agricultural subsidies	6.1	0.0	6.1	5.7	-6.8
Student Loan Fund	1.5	0.0	1.5	1.6	10.2
Other	8.6	1.2	9.8	11.0	11.9
Interest payments	23.8	-10.1	13.7	13.6	-1.3
Redemptions	10.1	-10.1	0.0	0.0	n.a.
Other	13.8	0.0	13.8	13.6	-2.0
Capital expenditure	10.0	0.0	10.0	9.7	-2.8
Revenue balance	-12.0	9.4	-2.6	0.1	n.a.
<i>Memorandum:</i>					
Per cent of GDP					
Revenues	25.8		24.6	24.2	
Expenditures	28.2		25.1	24.1	
Revenue balance	-2.4		-0.5	0.0	

1. Adjusting 1996 budget for effects of transfer of responsibility for primary schools to municipalities and of early redemption of Treasury bonds.

Source: Ministry of Finance.

problems concerning the privatisation of public firms and the transfer of responsibilities from central to local governments. Beginning in 1997 all new employees will be in a new funded system, and existing employees will be able to choose to which system they wish to adhere.

Under the old system, employees can retire with standard benefits at age 65. Benefits are equal to 2 percentage points of final daytime earnings (about two-thirds of annual earnings) for each year worked. Benefits are indexed to wage growth. Contributions to the system amount to 10 per cent of daytime earnings (6 per cent by the government and 4 per cent by the employee), and contributions cease at age 65 if the employee keeps working, but benefits continue to rise by 2 percentage points per year.

The new system has much higher contributions, 15.5 per cent of total earnings (the employee still pays 4 per cent), rather than daytime earnings. Benefits will be based on average life-time total earnings adjusted for inflation. Pension rights will accrue at 1.9 percentage points per year. In addition, those who delay their retirement until after age 65 will boost rights by 6 percentage points per year, and those who retire early will have their rights cut by 6 percentage points per year. The 6 point premium/penalty keeps the expected present value of benefits constant across different retirement ages, but still favours early retirement because no accounting is made for the change in the present value of contributions. The pension fund has the obligation to maximise returns, but its investments are not otherwise restricted.

If the Government's projections are realised, net debt will fall in absolute terms in 1997 and will have declined from 33 per cent of GDP in 1994 to 29 per cent in 1997. Its medium-term (four-year) budget programme calls for small surpluses for the rest of the century, reducing the debt-to-GDP ratio by a further 5 percentage points. This scenario is premised on 2.4 per cent annual real GDP growth and inflation of about 2 per cent. If successful, Iceland would confirm its position of having one of the healthiest government balance sheets in the OECD, giving it a head start in confronting the demographic challenges of the twenty-first century. Looking even further ahead, Iceland's unfunded pension liabilities are much smaller than those on continental Europe because of its reliance on funded pensions rather than pay-as-you-go social security programmes for the bulk of retirement income.

Local government finances

After starting the 1990s in good shape, local government finances deteriorated sharply over the four years to 1994. In 1990, budgets were balanced and net debt outstanding was only IKr 5 billion, about 17 per cent of that year's current

revenue and 1¼ per cent of GDP. But by 1994, the aggregate deficit had ballooned to nearly IKr 7 billion (national accounts basis), and net debt had shot up to IKr 22 billion, over 60 per cent of current revenues and 5 per cent of GDP. Over the past two years significant consolidation has been undertaken, and the deficit is estimated to have been only IKr 1 billion for 1996. Revenues rose strongly with the economy's cyclical improvement and expenditures were held down; in particular, gross fixed investment fell 25 per cent over the past two years in nominal terms.

Monetary and exchange rate policies

The basic strategy

For about a decade now the Icelandic authorities have been engaged in a strategy of transforming the financial sector of their economy into one which is modern and market-based. Besides the prerequisite of bringing inflation down to modest levels, this has involved deregulation of domestic markets and of the capital account of the balance of payments, creation of a foreign exchange market and an equities market, deepening of the bond market and widening the array of public debt instruments. Much of that process was completed several years ago, but major steps remained to be undertaken in the period under review (see below). Even so, for some years now, monetary policy has been implemented *via* short-term interest-rate changes (which themselves are subject to external influences and especially to interest rate changes abroad),¹⁴ as is done in most other OECD Member countries.

With the appropriate set of institutions now largely in place, the authorities' ongoing concern is more focused on stabilisation issues. With inflation having been in the 2 per cent range for three straight years, among the better performances in the OECD, the goal has been to preserve that hard-won price stability in order to allow economic agents to concentrate their attentions on productive activities. A key element in achieving this goal has been the maintenance of exchange rate stability. The authorities have, however, recognised that this is merely an intermediate objective and one that must be interpreted with care, given the supply shocks to which the economy can be and indeed has been subjected (see Chapter I). The current policy debate, therefore, is centred on whether the present historically low level of the krona in real terms is sustainable, or whether

it will rise in coming years, either by means of higher inflation than among trading partners or by currency appreciation.

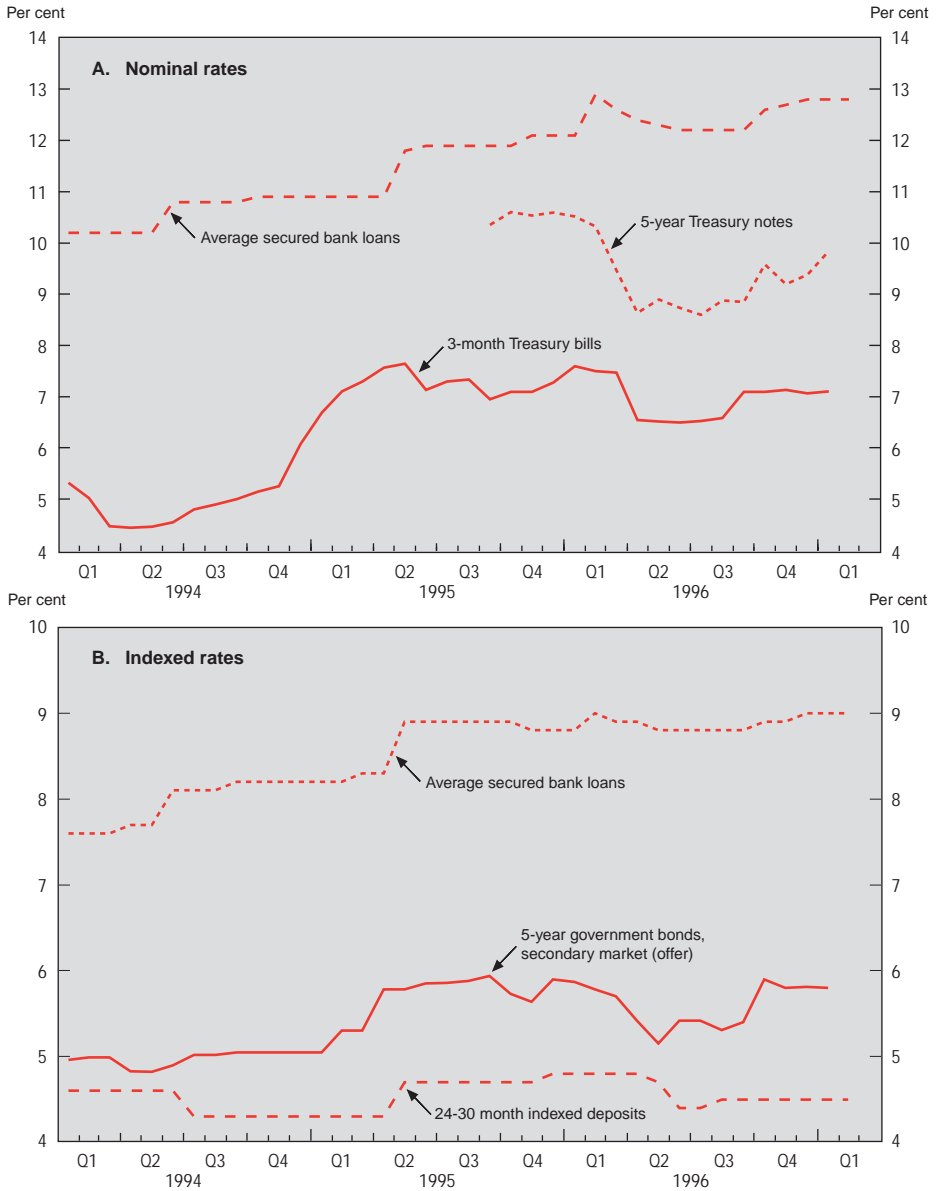
Reversing course on interest rates

Monetary policy has had a number of episodes over the period under review. During most of 1994, the authorities had been resisting rises in rates by running down foreign currency reserves, by refusing to accept bids for government paper at auction and by indirect central bank financing of the government deficit. The last part of 1994 and the first half of 1995 marked the abandoning of this strategy, as the Central Bank stopped resisting upward pressure on interest rates in the face of accelerating domestic demand growth and activity and the expected impact of the 1995 nation-wide wage agreement (see Chapter I). Initially, the change was clearest at the short end of the maturity spectrum: three-month Treasury bill rates rose from as low as 4½ per cent in the second quarter of 1994 to 7½ per cent a year later (Figure 12). That meant that the trade-weighted average differential moved from -50 basis points during the autumn of 1994 to 180 basis points late the following spring. Indeed, the Central Bank attempted to maintain a fairly constant degree of monetary tightness right up to September 1996 by keeping the differential around 2 percentage points. The discount rate was boosted several times from an annual average of 4.4 per cent in 1994 to 6.4 per cent by March 1995. By April, the Bank also abandoned its attempt to hold down long-term rates and ceased waiting for other investors to become more active in the market. It allowed indexed government bond rates to rise past the earlier 5 per cent ceiling and to reach around 5¾ per cent. That was sufficient to revive transactions in the market, and auctions resumed after a six-month hiatus; nevertheless, the State Housing Fund, which had been unable to borrow since mid-1994 (due to the government interest rate ceiling), did not resume issuing bonds until 1996.

This policy reversal was reflected in the balance of payments (Table 12). Despite the final stage of capital-account liberalisation at the beginning of 1995, non-reserve capital outflows, which had been running at an average of about IKr 4.7 billion per quarter (4¼ per cent of GDP) in 1994, moved into virtual balance in the first three quarters of 1995. Reserve assets, after falling some IKr 10.7 billion (2½ per cent of GDP) in 1994, dropped less precipitously in the first quarter of 1995 and then moved up sharply in the second (Table 13). The

Figure 12. **INTEREST RATE DEVELOPMENTS**

Per cent, end of month



Source: Central Bank of Iceland.

Table 12. **Balance of payments**

IKr billion

	1993	1994	1995	1996 ¹
Current account	0.3	8.4	3.4	-9.1
Capital and financial account	2.1	-8.2	1.6	6.6
Financial account	2.0	-7.9	1.8	6.6
Financial account excluding reserves	-2.1	-18.6	2.0	16.8
Direct investment, net	0.2	-0.2	-0.1	-0.4
Portfolio investment, net	-2.8	-7.5	-3.7	-1.6
Other capital movements, net	0.5	-10.9	5.9	18.7
<i>of which:</i>				
Monetary authorities	1.7	3.3	1.3	-6.7
General government	-5.0	-12.3	-1.3	7.1
Deposit banks	4.3	11.2	14.8	17.7
Other sectors	-0.5	-13.1	-8.9	0.6
Reserves ²	4.1	10.7	-0.2	-10.1
Net errors and omissions	-2.4	-0.1	-5.1	2.6

1. Preliminary data.

2. A positive figure indicates a decline in reserves and conversely.

Source: Central Bank of Iceland.

Table 13. **Foreign reserves of the Central Bank**

IKr million, end of period

	1993	1994	1995	1996			
				March	June	September	December
Total foreign assets	31 340	24 351	25 346	27 652	26 386	28 437	35 678
<i>of which:</i>							
Gross reserves	31 056	20 317	20 239	22 525	21 205	23 256	30 468
Other foreign assets	284	4 034	5 107	5 127	5 181	5 181	5 209
Short-term foreign liabilities	2 678	9 397	11 378	6 239	4 993	5 892	4 929
Net foreign assets (reserves)	28 662	14 955	13 967	21 413	21 393	22 544	30 748
<i>Memorandum items</i>							
Reserves in US dollar terms (millions)							
Gross	426.4	297.1	309.8	339.3	315.1	344.8	454.4
Net	393.5	218.7	213.8	322.5	317.9	334.2	458.5

Source: Central Bank of Iceland and OECD.

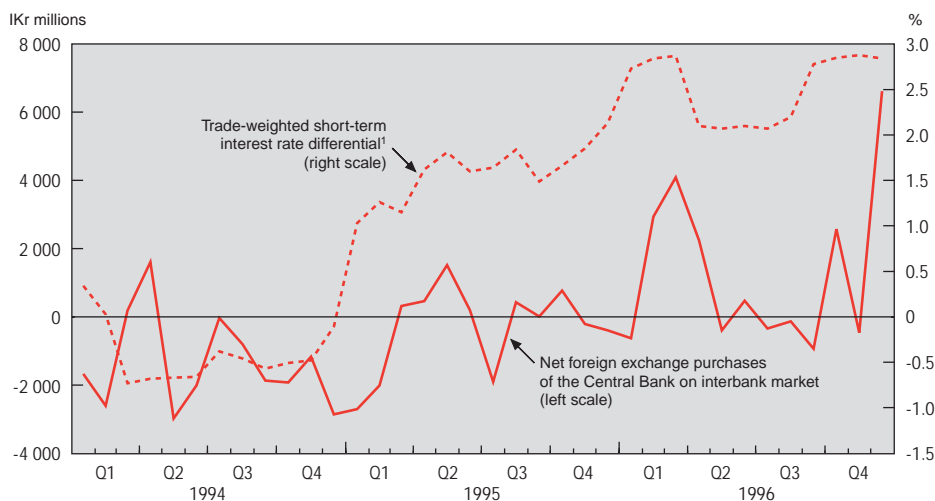
reversal was also manifest in Central Bank holdings of Treasury and other central government institutions' net liabilities. These had risen by IKr 9.4 billion in 1994, but they fell by IKr 1.5 billion in 1995 and a further IKr 8.6 billion in 1996.

The second half of 1995 was marked by a slight easing in policy settings, as monetary conditions worldwide began to loosen. The discount rate was cut in two stages by a cumulative 0.8 percentage points, matched by similar declines in short-term market rates, and the differential with foreign rates was largely unchanged over the period. Despite a declining trend abroad, long-term rates for indexed securities in Iceland fluctuated somewhat, but remained roughly unchanged at below 6 per cent, still about 2½ percentage points above comparable United Kingdom indexed yields at the end of 1995.

A short-lived tightening took place around the turn of the year as inflation uncertainty resulting from the reopening of wage agreements increased, the current account moved back into deficit, and new long-term foreign borrowing was not sufficient to cover heavy amortisation payments. Short- and long-term differentials (for five-year unindexed paper)¹⁵ with respect to foreign rates rose to around 280 and nearly 500 basis points, respectively. But market conditions eased in the face of strong capital inflows already as from February 1996.¹⁶ While the Central Bank intervened to mop up foreign exchange in the interbank foreign exchange market to the tune of over IKr 9 billion in the three months ending in April (Figure 13), it was unwilling to sterilise fully the impact of these purchases on domestic liquidity (given the balanced outlook for economic development still expected at that point) and allowed domestic market rates to fall by ¾ percentage point on April 10, fortuitously the same day as a major international bond rating service decided to upgrade Iceland's credit rating.¹⁷ The short-term differential dropped back to near the 200 basis point level. For their part, indexed long-term rates fell by a similar amount from April through June, briefly touching the 5 per cent barrier once again. Rates on unindexed five-year notes had already fallen even more sharply beforehand and were largely stable in face of this policy change.

From April until September interest rate policy was largely unaltered, and markets were fairly stable at the short-term end of the maturity spectrum. But bond prices quickly retraced about half their spring rally, perhaps because of the decision to impose a 10 per cent withholding tax on interest income as from 1997

Figure 13. MAINTAINING THE FIXED EXCHANGE RATE



1. Measured against 16 partner countries.
 Source: Central Bank of Iceland.

as well as the decision to increase the size of the cod quota for 1996-97 substantially (see Chapter I). Then in late September the Bank switched course and decided that, in view of some deterioration in its reserve position, increasing signs of overheating and the possible need for a real exchange rate appreciation, higher rates were called for. The discount rate was raised by 0.4 percentage point to 6.0 per cent, the first change in over a year, and other rates were boosted by an equal amount. The differential returned to the same 280 basis point level it had occupied in the first quarter of the year. In addition, the minimum liquidity ratio for the deposit money banks (DMBs) was increased to 12 from 10 per cent, where it had been since November 1993.

This reversal of the earlier easing and the prospects for the second aluminium smelter were sufficient to bring about renewed substantial increases in reserves in the fourth quarter: by December they exceeded the minimum level of three-months worth of general imports which has been targeted since the beginning of 1995. In recent months short rates have been little changed, but five-year rates have climbed further, bringing the differential at this maturity to 400 basis

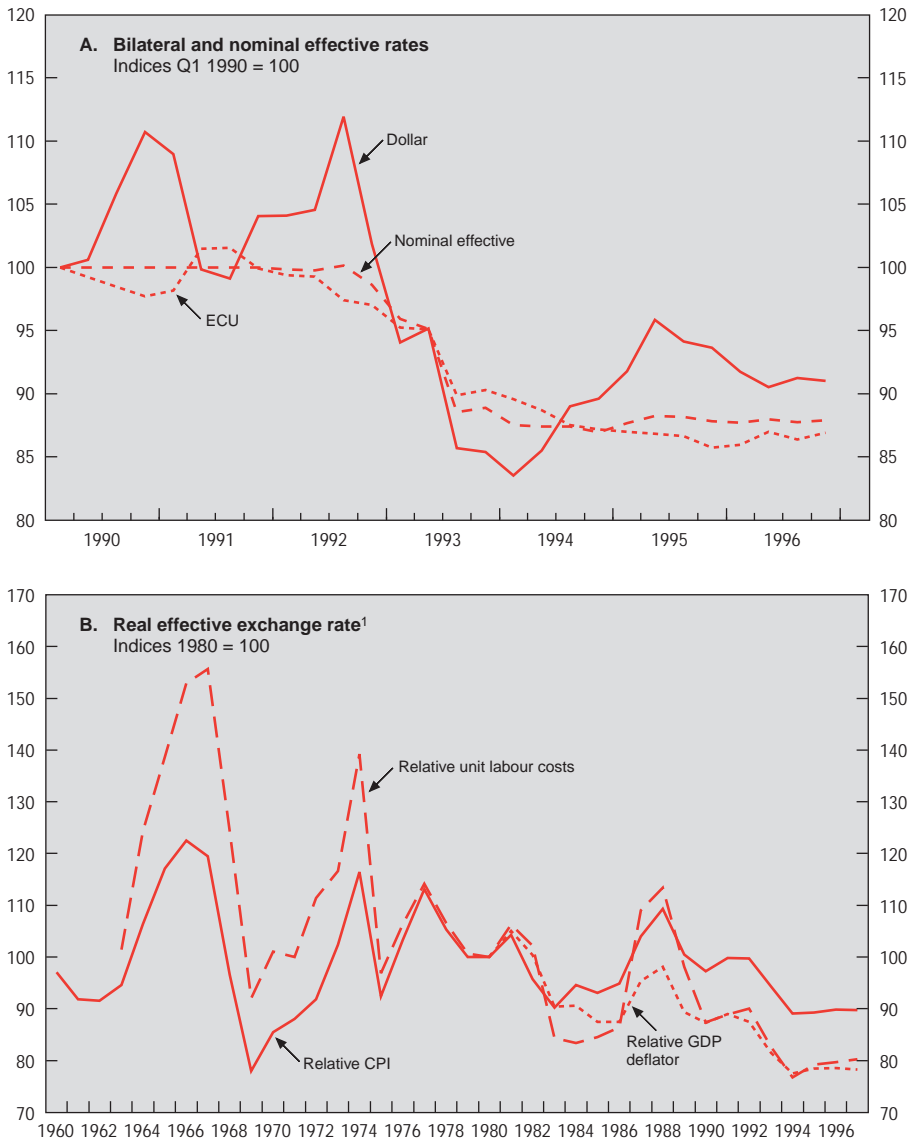
points for unindexed rates and around half that for indexed rates (against the United Kingdom and Sweden). It would seem that about half of this long-term differential with abroad might be ascribed to higher inflation expectations than on average abroad and the remainder to risk and illiquidity premia. This can be illustrated by looking at the difference between the yields on unindexed and indexed five-year Treasury securities – probably a good proxy for the rate of inflation expected by bond market participants, though also affected by risk and illiquidity premia and slightly different tax implications – which declined from nearly 5 percentage points late in 1995 (when there was no doubt an illiquidity premium on the new unindexed notes) to about 3.2 percentage points in July 1996 before rebounding to 3.85 percentage points in January 1997. This is similar to the gap in the United Kingdom but much higher than in Sweden and the United States.

Exchange rate stability

The Central Bank has successfully achieved nominal exchange rate stability in the past several years. The krona has appreciated against the weaker currencies, such as the yen, and declined against those which have moved up, the dollar in particular (Figure 14). Overall, the effective (trade-weighted) exchange rate rose slightly less than 1 per cent in each of 1995 and 1996, the first sustained increases since 1991. As stated above, the authorities had been intervening heavily to maintain the exchange rate in 1994 and early 1995 until the market was satisfied with significant interest-rate differentials in favour of Iceland. For about a year thereafter the market was fairly well balanced, and little official intervention was required. However, as from February 1996, when there was substantial net foreign borrowing, especially by the Treasury, and the favourable supply shocks from the smelter expansion and the improved cod stocks occurred, conditions reversed, and since then the Bank has bought IKr 16.6 billion (\$250 million, 3.4 per cent of GDP) worth of foreign currencies to prevent the krona from appreciating too rapidly.

In real terms the exchange rate remains about 10 per cent below the level reached in the early years of the decade (and still at or near the lowest levels recorded since at least 1960) (Figure 14, Panel B). Five years ago, prior to the devaluations of 1992 and 1993, the current account was in substantial deficit, external debt was rising rapidly, the dollar value of total merchandise exports was

Figure 14. EXCHANGE RATE OF THE KRONA



1. Against 16 partner countries using trade weights corresponding to the basket for the official exchange rate target band. 1996 and 1997 are projections.

Source: Central Bank of Iceland.

falling and the fishable stock of cod had fallen by nearly half since 1989. The motivation for the devaluations was to deal with these imbalances and to follow a number of major trading partners who had suffered major reductions in their exchange rates – the United Kingdom and Norway in particular. In contrast, the current account is presently in deficit largely because of temporarily high investment goods imports associated with the smelter expansion which will boost export capacity, the external debt has nearly stabilised (and has fallen in relation to GDP by nearly 6 percentage points since 1993), goods exports are rising faster than GDP and the stock of cod has resumed an uptrend. It is, therefore, probably safe to say that the equilibrium real exchange rate should be higher today than in the early 1990s. The United Kingdom and Norway have, like Iceland, since seen their economies move into very strong cyclical upturns, and their currencies have appreciated in nominal effective terms. Without the benefit of a rising currency the pressures for overheating will clearly be greater.

The only notable policy changes specific to the exchange rate occurred in September 1995, when the target band was widened from $\pm 2\frac{1}{4}$ per cent to ± 6 per cent around the central rate established in June 1993,¹⁸ in line with earlier parallel shift for the European Exchange Rate Mechanism, and the basket of currencies was altered to include those of 16 trading partners with 1994 trade weights,¹⁹ rather than merely the US dollar, the ECU (with its own internal weights) and the yen.

The evolution of financial aggregates, institutions and markets

Most monetary and credit aggregates have shown patterns of growth in recent years which have been broadly consistent with the conjunctural situation in Iceland as well as continued disintermediation (Table 14). Thus, monetary growth has picked up (although significantly so only in 1996), as has bank lending. The supply of credit has also rebounded since the 1994 slowdown, with renewed demands from business (especially in the fisheries sector) and persistent rapid growth in household and central government demand some of the more noteworthy features. As well, the pressure of Treasury financing on the domestic credit market stabilised in 1995 and fell in 1996, especially for indexed securities (bonds), the stock of which stopped growing, while new financing was entirely in the form of bills and notes. All Treasury net borrowing has been in foreign

Table 14. **Growth in various financial aggregates¹**

Per cent

	1993	1994	1995	1996
Money				
Base money	-12.0	1.6	-4.5	23.6
M1	5.4	10.7	9.6	10.8
M3	6.5	2.3	2.2	5.8
Banking system lending ²	8.9	2.8	0.8	8.4
<i>of which:</i>				
Deposit money banks	7.0	-0.1	0.8	11.7
<i>of which:</i>				
Foreign funds relent	3.9	-23.4	-25.9	29.0
Credit				
Total	11.2	4.8	5.9	7.3
<i>of which: claims on</i>				
Central government	25.9	9.3	12.2	7.4
Municipalities	17.0	10.0	11.7	0.2
Business	6.7	-1.5	-0.2	5.3
Households	10.6	10.1	9.4	10.4
Other				
Trading on interbank foreign exchange market	n.a.	n.a.	2.4	48.6
Total market capitalisation on Iceland Stock Exchange ³	50.9	30.1	15.8	33.9
As share of GDP (level)	40.8	50.6	55.8	68.5
Market capitalisation of Exchange-listed equities	30.8	72.8	42.3	98.2
Mutual fund units	34.9	33.9	-10.9	41.4
Deposit money bank deposits	6.5	1.9	2.0	5.8
Pension funds' cash flow	17.9	10.5	6.8	19.7
Investment credit fund assets	13.0	7.4	5.3	8.0

1. Through the year growth except as noted.

2. Including foreign funds relent and Central Bank lending to the Treasury.

3. Including government, housing and other bonds, government notes, equities and Treasury bills.

Source: Central Bank of Iceland.

markets in order to benefit from lower borrowing costs and to demonstrate confidence that, if anything, the krona might actually appreciate.

Financial markets continue to expand their role. For example, an increasing share of trading on the interbank foreign exchange market occurs outside of fixing meetings (nearly 40 per cent in 1996) – even if the Central Bank is still involved in around 85 per cent of all transactions – and turnover in 1996 was nearly half again as great as in 1995. In addition, turnover on the Iceland Stock Exchange has also resumed a rising trend, with increasing trading in mortgage-backed securities (which result from house refinancing and have grown popular

with banks and pension funds), government bonds and equities. But market capitalisation has grown much faster, reaching some 68 per cent of GDP in 1996, up more than ten-fold since 1987. Besides housing bonds which have benefited from the gains in activity and easing credit rules, it has been equities which have been the source of most of the recent rise: turnover in 1996 was nearly double 1995 rates, which itself was nearly triple 1993 outcomes. The number of firms listed has continued to rise, reaching 32 in September 1996, and capitalisation amounted to over 17 per cent of GDP, up from less than 5 per cent in 1993. In 1996 primary equity market offerings, especially by fisheries firms, were nearly four times those recorded in 1994 and amounted to around 1½ per cent of GDP. Mutual funds have been important players in this equity-market expansion, although their share of total equity ownership (including those not Exchange-listed) has slipped from around one-third at the end of 1993 to less than one-fifth most recently.

While financial institutions have continued to expand fairly briskly, their growth has by no means kept pace: bank deposits and lending have not matched GDP increases for the past three years; the same may have been true of the pension funds last year, as their cash flow continued to slow; and investment credit funds (ICFs) have managed only to keep the ratio of their assets to GDP approximately constant. The role of the banks has no doubt been restrained by increasing competition from other sources of credit (insurance firms and car lessors, for example) and from their poor balance sheet situation. However, bank finances have continued along the path of improvement they have been on since 1992 due to a decline in loan-loss provisions from 3.7 per cent of credits and guarantees in that year to 1.3 per cent in 1995.²⁰

Nevertheless, both the banks and the ICFs remain in need of restructuring in order to boost efficiency and cut costs.²¹ A bill to incorporate and merge several of the ICFs to form an investment bank has been presented to Parliament. Another bill would incorporate the two state-owned banks and allow 35 per cent of their equity to be sold to the private sector; they retain market shares which rival those in some Eastern European OECD countries and still benefit from some more favourable treatment than their privately owned counterparts. State guarantees are also still pervasive in the financial sector. Also being considered is the integration of the state housing programme into other existing financial institutions. Unlike the situation in most other OECD countries, housing credit risks are

borne by the government through guarantees; the amount of such debt now exceeds direct domestic government debts.

Yet some noteworthy structural reforms in the financial sector have been undertaken in the period under review. First, as stated above, the last stage in capital account deregulation took place at the beginning of 1995, as short-term flows were liberalised. Second, the authorities are attempting to phase indexation²² out of the system. In May 1995 they began to sell new unindexed Treasury notes of three years maturity, and in September maximum maturity was extended to five years. Also in June 1995 they announced new regulations which constrain the use of indexation in financial contracts in the hope that lenders will tie their non-indexed rates more closely to money-market rates which will give policy-makers greater leverage over the prices and volumes of intermediated transactions.²³ Third, in February 1996 the Central Bank relinquished its role as unique market maker for Treasury bonds. It agreed with three private securities houses that they should assume that role. Thus far, the new arrangements seem to have handled well a sharp rise in turnover, but some problems occurred in the aftermath of the early redemption of Treasury bonds in July.²⁴ Fourth, new legislation dealing with the stock exchange, mutual funds and securities trading which was passed in accordance with requirements of the European Economic Area (EEA) agreement took effect in April 1996. Similar legislation to bring Iceland's banking regulations into conformity with the EU's capital adequacy directive and deposit guarantee rules was passed in May 1996. But the Central Bank Act must still be revised to allow the Bank Inspectorate to supervise other financial institutions, especially pension funds, in accordance with EEA requirements. And, although proposed in 1993, legislation which would enhance the Bank's independence or set price stability as its sole or even its primary objective seems to be no longer on the government's agenda.

Other structural reforms

Besides further reforms in the financial sector and the recent overhaul of the pension system for public employees which are described elsewhere in this chapter, there have been important changes in labour market and education policies which will be scrutinised in subsequent chapters of this survey. It has also been mentioned that the quotas for cod have been set based on a catch rule

since 1995. This is expected to lead in the long term to a catch which is less than the maximum sustainable catch, but which is close to the catch which maximises the rents associated with the resource.²⁵ Consideration is being given to extending this procedure, which benefits from some automaticity, to other species such as shrimp, haddock, saithe, redfish and Greenland halibut, several of which have stocks which are in poor condition, in part due to a lack of co-ordinated stock management with neighbouring countries. In contrast, in the spring of 1996 Iceland agreed with Norway, Russia and the Faroe Islands to implement a quota system for herring: Iceland was allocated 17 per cent of the total. But no agreement has been possible over fishing in the Barents Sea. No further moves have been made regarding fishing fees (quota taxes) since the initial modest tax to finance the Fisheries Development Fund went into effect in 1996. And the Fund has made little progress in shrinking capacity in the processing sector, although small boat decommissioning has proceeded, aided by fairly rapid market-driven rationalisation. One of the long-standing exemptions to the quota system, the so-called longline exemption, was finally dropped in 1996. As well, as from the current fisheries year, small boats have either had to join the global quota system and receive an individual quota allocation or participate in an “Olympic” system where they compete to fill an aggregate small-boat quota.

A number of other sectors have undergone policy changes. In *agriculture* there was a new agreement on sheepmeat in 1995 which is intended to move it progressively to a more market-based system; the herd is continuing to shrink in size. The milk agreement is up for renegotiation. And the government is considering small reductions in some external tariffs, on vegetables for example. The *privatisations* of the state-owned cement and fertiliser plants and the computer data-processing firm are in preparation; also, the public Post and Telegraph Administration was incorporated at the beginning of 1997. Consolidation of several *sectoral research institutes* (food science, geology) is being considered. In August 1996 there was an agreement between the central government and the City of Reykjavik to improve co-operation in *hospital* support services in order to reduce outlays. In the area of the *environment* some restructuring of the administration is underway. In the *public sector* a new (May 1996) Civil Service Act eliminated permanent contracts for new civil servants; henceforth, senior officials will have five-year contracts, while others are hired on an open-ended basis, with only three months' notice. A Government Financial Reporting Act is before the

Althing and is expected to pass soon; it will prescribe that the budget be presented on an accrual basis and no longer solely on a cash basis, merge the fiscal and credit budgets and ensure that private-sector accounting principles be followed except in the case of depreciation, assets being written off in the year of their purchase. As mentioned, a *tax and benefit reform* is being debated before the Althing, and a uniform 10 per cent withholding tax on capital income is being introduced this year. Finally, Iceland became a member of the *Schengen* agreement²⁶ in 1996.

III. The education and training system and human capital development

Introduction

Iceland is a small country with a unique language spoken almost exclusively by its own 265 000 citizens. It has, therefore, always had a special challenge in trying to prepare its young people for a full and enriching adult life, but that difficulty has almost certainly been accentuated by the heightened economic competition among nations under way in recent decades and by the need to diversify away from resource-intensive economic activities in order to provide citizens with satisfactory real incomes. These structural changes mean that all aspects of a nation's economic life require careful scrutiny to ensure that they are organised in an efficient and equitable way. That requirement applies in full force to the system of education and training, which is responsible for developing the human capital of the citizenry in order that each individual possess the means to engage in economic and civic life to the fullest of his or her potential.

Ten years ago Iceland's education system was assessed by the OECD (OECD, 1987). That review concluded that Iceland should increasingly differentiate its educational system from those of other OECD Member countries, given its particular economic needs and cultural aspirations. But much has changed since then, both with respect to the system and to economic developments at home as well as in the wider global economy, even if the nation's needs and aspirations remain possibly different from those of others, and a further look at the situation is no doubt in order. Having more skills may be a greater competitive advantage than heretofore, given the increasing emphasis on continuous improvement, flexibility and variety in today's high-technology world and the new environment of higher unemployment (see Chapter IV). But as much as *greater* skills it could be said to be *different* skills that may be most helpful if

Iceland's companies are to transform themselves into "high performance" workplaces. These new skills include technology-related, decision-making and other more general "thinking" skills. Despite the nation's resource advantages, its economic success will more than ever be determined by the ingenuity of its people and by their ability to respond to fast-changing needs in the ever more unified global market place.

There are a number of features which have distinguished Iceland's formal education system from those elsewhere. First, at all levels there has been a tradition of home-based or self-teaching (see Box 1), probably now extinct, which meant that public responsibility came relatively late, and compulsory schooling became law only this century. Second, since the acceptance of public responsibility, the system has traditionally been fairly centralised, both as far as curriculum and financing are concerned; financing centralisation is also characteristic of many other public services in such a small country. However, in 1996 the State devolved financial responsibility for compulsory schools (but not curriculum) to the municipal level in order to bring decision-making closer to the people. Some decentralisation of power also occurred at the upper secondary level. Third, perhaps not unrelated to the first, public spending has never been as heavy in relation to per capita income levels as it has in some other countries: in order to free up valuable labour in the summer, the school year has been extremely short, and teacher pay is arguably low by international standards; nevertheless, access to post-compulsory education has been guaranteed to those who complete compulsory education, as fees are minimal. Fourth, despite modest spending levels, outcomes have met objectives: the language has survived and prospered, culture is by no means endangered, and per capita income levels are on a par with OECD averages. But higher and seemingly persistent unemployment in the 1990s, low hourly labour productivity levels (given very high labour force participation and an extremely long work week) and a poor performance on some international test comparisons have called this last conclusion into question. And at the same time a drop-out problem has emerged which has opened up a debate on the nature of post-compulsory schooling, the vocational and technical stream in particular.

This chapter examines both the levels and patterns of resource use in the education and training sector, its output and efficiency in various respects as well as its funding arrangements. The case is made for selectively raising the levels of

Box 1. Educational institutions and curriculum: historical overview and current situation

The historical situation

Schools have existed in Iceland for almost as long as the island has been settled. However, for more than 500 years following the establishment of the first school at the beginning of the 12th century, schooling was reserved for a chosen few. It was only in the middle of the 17th century that the church took on the obligation of providing religious instruction to all children and then, in light of eroding literacy levels, of supervising parental teaching of reading in the home (Oskarsdottir, 1995). But the home remained the site of most learning, and the country is said to have a strong tradition of self-teaching and a corresponding mistrust of institutional learning and professional scholarship (OECD, 1987). Public schools were first set up only in the late 18th century, and from then on attempts to improve and expand the education system became part of the struggle for independence (Commission of the European Communities, 1995). The first law on compulsory education was passed in 1907; at that point school attendance was required only between the ages of 10 and 14. The first extension of the compulsory school age was in 1936 (7 to 14). By 1984 compulsory education had been extended through to age 16 and in 1991 down to age 6.

The University of Iceland was founded in 1911 by merging the existing divinity, medical and law schools and forming a new Faculty of Arts. State-run lower secondary schools were first set up in 1929, but it was only in 1946 that the formal four-part structure (primary, lower secondary, upper secondary and tertiary)* was enshrined in law. In 1955 the State took over the operation of all vocational (trades) schools which had theretofore been run by the relevant associations of master craftsmen. Pre-schools were first recognised by law in 1973 but are now governed by 1994 legislation. Upper secondary comprehensive schools came into being in 1973. New legislation in 1974 provided for equal educational opportunities across the country by creating eight educational regions. Also under its terms, in 1976-77 the optional common school-leaving examination – which was required to go on to upper secondary grammar schools – was replaced by a nationally co-ordinated examination marking completion of compulsory school. But to complete upper secondary school and earn the right to pursue tertiary studies, students do have to pass a set of matriculation examinations which, however, are not set at the national level. A new Education Act was passed in 1991; its main purpose was to decentralise the system and inject more parental influence over its direction. In 1995, the authorities moved further in this direction in a new Act under which, effective in 1996, they devolved responsibility for all compulsory education to the nation's 167 municipalities in return for a greater share of personal income tax revenues. At the same time the role of school boards was enhanced. The 1995 Act also repeated the

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(continued)

goal included in the 1991 law of eliminating the system of double shifts in some compulsory schools, especially in the Capital Region, needed because of a shortage of facilities, but it put off the deadline for full implementation until the year 2002.

The current state of affairs

Compulsory level school boards are composed of political appointees, but representatives of teachers, heads and parents may attend their meetings, speak and make proposals. Each upper secondary school has a board with five members, three of whom are appointed by the State and two by the municipality; until this year staff and students had also been represented (although they may still attend, speak and make proposals). Each institution of higher education has its own legislation defining its role, programmes, degrees, responsibilities, internal organisation and administrative structure.

The pre-school curriculum is controlled centrally. At the compulsory level there have also existed National Curriculum Guidelines since the 1960s, as there have at the upper secondary level since 1986. Pupils learn a Scandinavian language (usually Danish) as from age 11 and English as from age 12; those carrying on into general programmes at upper secondary school add either French or German. At the outset of compulsory schooling it would seem that Icelandic pupils get relatively little classroom time in studying mathematics and their mother tongue and toward the end less social studies and more foreign languages and arts than their counterparts in other OECD countries (Menntamálaráðuneytið, 1996). At the overall compulsory school level the curriculum is weighted more heavily than in the mean OECD country towards arts and crafts (20 per cent of total class time compared to an average of 14 per cent) and more lightly towards natural science (6 compared to 11) and social studies (7 compared to 13) (Commission of the European Communities, 1995, and OECD, 1996a, Table P11.2). There seems to be no difference in the field of foreign languages. Some non-academic subjects such as music and sport are increasingly being satisfied by private provision at market prices. At the upper secondary level those taking a general course of studies have subject choice for 35 per cent of their schedule (2-18 per cent for electives and 17-33 per cent for specialised subjects associated with a particular programme of study), but there is little difference in curriculum between general and vocational students in the early years of upper secondary schooling (although this is being debated). Some observers claim there is a lack of counselling services and career guidance in the school system (Oskarsdóttir, 1995), although counsellors are present in each upper secondary school.

* Together primary and lower secondary are called compulsory; they cover seven and three years, respectively. Upper secondary generally covers four years for those in the general (academic) programmes. The length of vocational and technical programmes is variable, with the most common being four years.

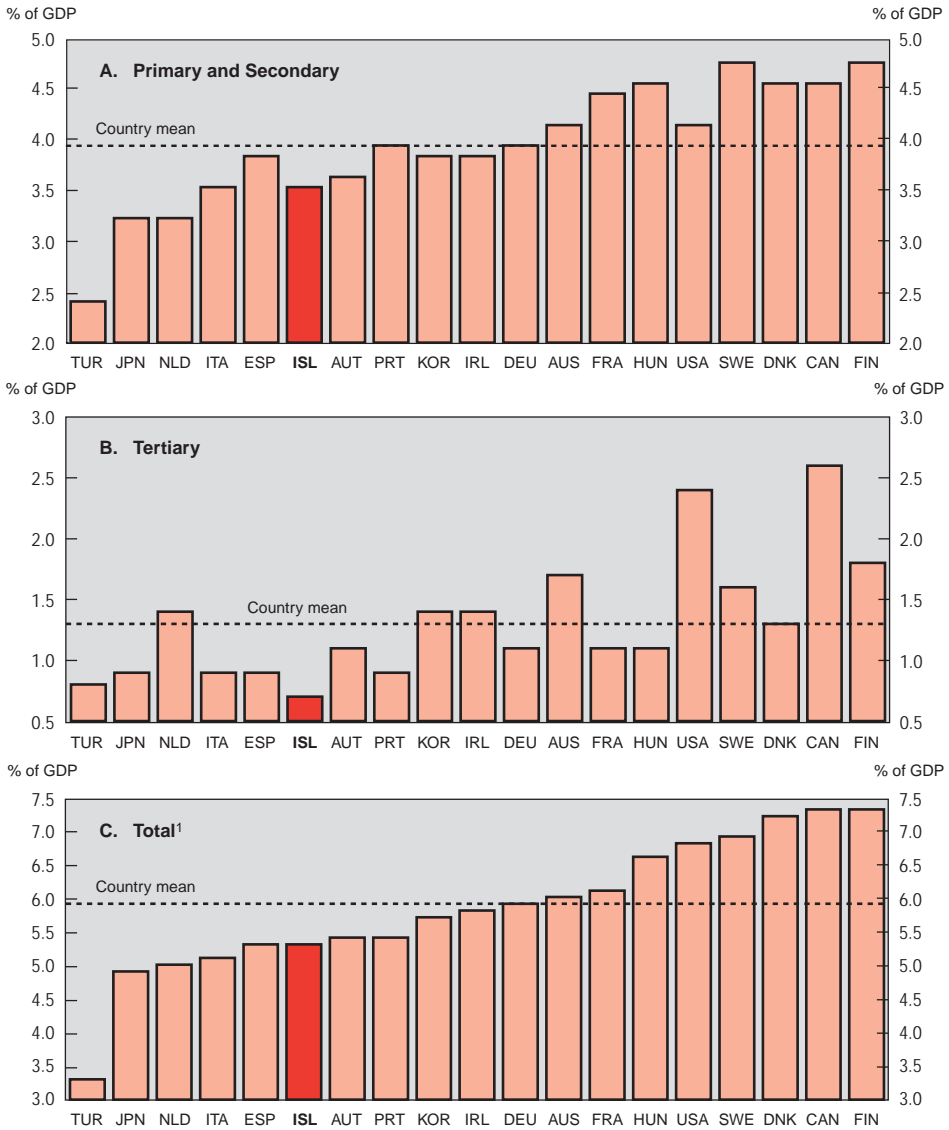
inputs, notably through lengthening the school year, especially at the compulsory level, and increasing the financial contribution of individual students thereafter.

Educational inputs

Iceland combines very low total public and private spending per student with a moderate enrolment rate and a high youth share of the population. But the last factor does not fully offset the effect of the first, with the result that the share of GDP represented by direct spending on educational institutions – at 5.3 per cent in 1993 according to OECD definitions – is well below the OECD country mean of 5.9 per cent (Figure 15). In 1993 spending relative to GDP at the tertiary level was the lowest of the OECD countries with available data (0.7 per cent compared with a simple mean of 1.3 per cent). It is also low for secondary education, but the very high youth share of the population is sufficient to push the primary share of GDP up to the OECD average. Using national definitions, spending has risen in relation to GDP by around 1 percentage point since 1980-84 (Table 15), a period over which the youth share of the population declined somewhat. But in recent years spending, both as a share of GDP and in real per capita terms, has eased slightly. Increasing pressures on the public finances have kept a lid on the public component of expenditure. In fact, since 1987 cutbacks in education spending have been larger than in total public spending. And upper secondary schools were the object of a IKr 100 million (2 per cent) cut in the 1997 budget. Ever since 1982 a rising proportion of the total financial cost of education has, therefore, been borne by the private sector (students and parents) in the form of various fees.²⁷ This share reached 15 per cent in 1993, about the same as in the average OECD country.

The level of spending is determined by overall enrolment – which is approximately the product of the size of the youth population and the enrolment rate – and spending per student. Probably the most fundamental factor in determining the demand for educational services, and therefore spending levels, is the size of the youth population. While emphasis is placed in this chapter on Iceland's small size, and on the effects that has on its choices and outcomes, controlling for size it is clear that Iceland has a strong underlying demand for education: among the 28 current OECD Member nations excluding Luxembourg, only four had larger youth shares in the total population in 1994 (Figure 16). The gap is most

Figure 15. **TOTAL EXPENDITURE FOR EDUCATIONAL INSTITUTIONS, 1993**
Per cent of GDP



1. Includes pre-primary and spending undistributed by level. For Iceland, pre-primary data are not available.
Source: OECD.

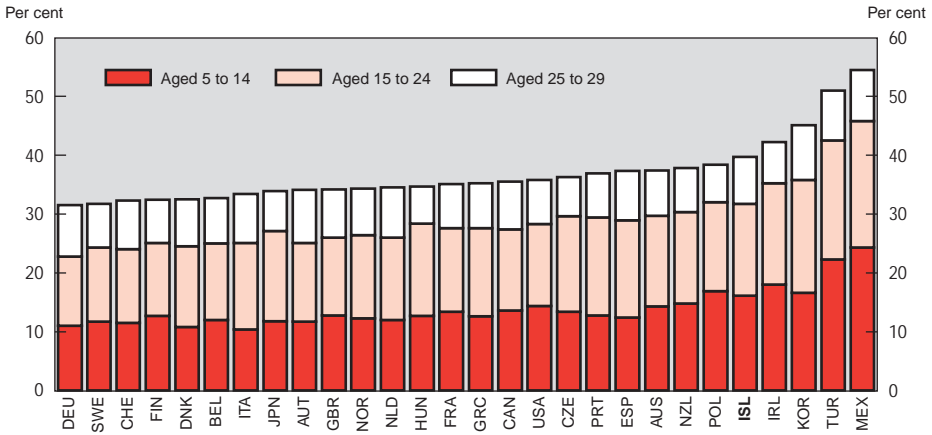
Table 15. Educational expenditure, 1980-95

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Expenditure on education (as percentage of GDP)																
Public	4.33	4.27	4.55	4.40	4.15	4.72	4.64	4.67	5.23	5.14	4.89	5.09	5.20	5.05	4.89	4.84
Private	0.45	0.42	0.40	0.43	0.51	0.52	0.55	0.56	0.66	0.68	0.69	0.71	0.70	0.78	0.78	0.75
Total	4.78	4.69	4.95	4.83	4.66	5.24	5.18	5.23	5.88	5.82	5.58	5.80	5.91	5.83	5.67	5.60
Public expenditure on education as percentage of total public expenditure	13.11	12.47	13.04	11.99	12.29	13.03	12.08	13.25	13.07	12.08	12.24	12.47	12.62	12.31	12.00	12.32
Private expenditure on education as percentage of total educational expenditure	9.35	9.03	8.04	8.88	11.04	9.89	10.55	10.69	11.14	11.72	12.38	12.26	11.93	13.42	13.75	13.47
Educational expenditure at constant prices, ¹ 1980 = 100	100.0	103.9	110.7	112.4	116.5	131.9	136.8	140.8	157.0	161.1	163.9	171.8	169.2	167.4	169.1	169.0
Educational expenditure at constant prices per capita, 1980 = 100	100.0	102.7	107.9	108.2	111.0	124.7	128.4	130.6	143.4	145.4	146.8	152.0	147.9	144.8	145.1	144.2

1. Educational expenditure deflated by the price index of public final consumption.

Source: National Economic Institute.

Figure 16. **THE RELATIVE SIZE OF THE YOUTH POPULATION**
Share of persons 5 to 29 years of age in total population in per cent, 1994



Source: OECD.

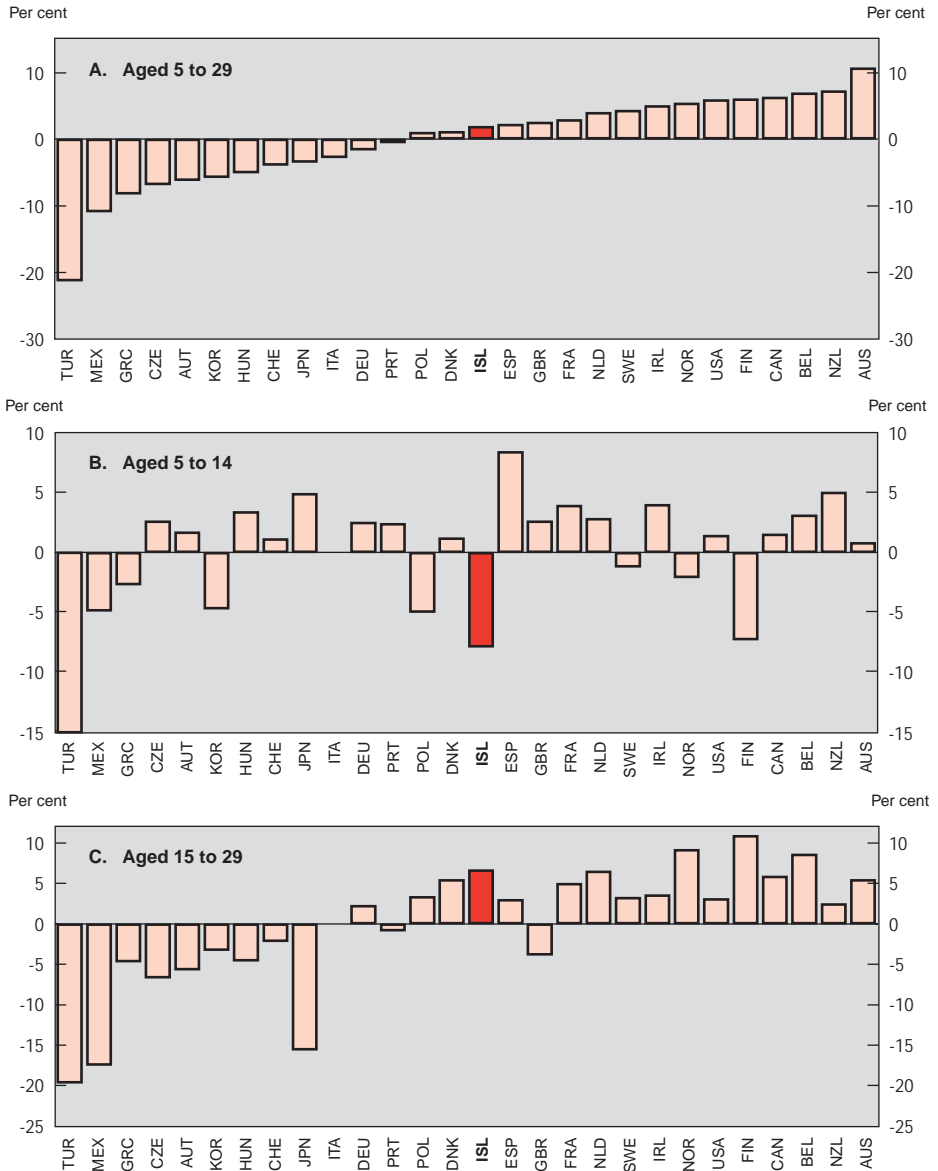
pronounced for those in the youngest age bracket (5 to 14); for that group the differential has been present for some time and is expected to persist (OECD, 1996a, Table C3), even if, as in most other OECD countries, the share of such youths is projected to fall slowly in coming years.

Enrolment

Superimposed on the younger demographic structure which favours a high demand for education is an average enrolment rate which is close to the OECD country mean (Figure 17). Enrolment is complete for those 6 to 16, the years of compulsory schooling. However, enrolment by those aged 15 to 29 is fairly high, whereas participation by those 14 and under appears low at first sight.²⁸ Taking a closer look at the structure of enrolment by age it becomes clear that it is only at the youngest ages – about three out of four children in the three-to-five age group are in pre-schools and day-care institutions – as well as immediately after the school-leaving age (when about one in seven pupils quits school, at least temporarily) that children are less frequently participating in formal education than

Figure 17. **ENROLMENT RATES BY AGE GROUP, 1994**

Deviation from country mean in percentage points



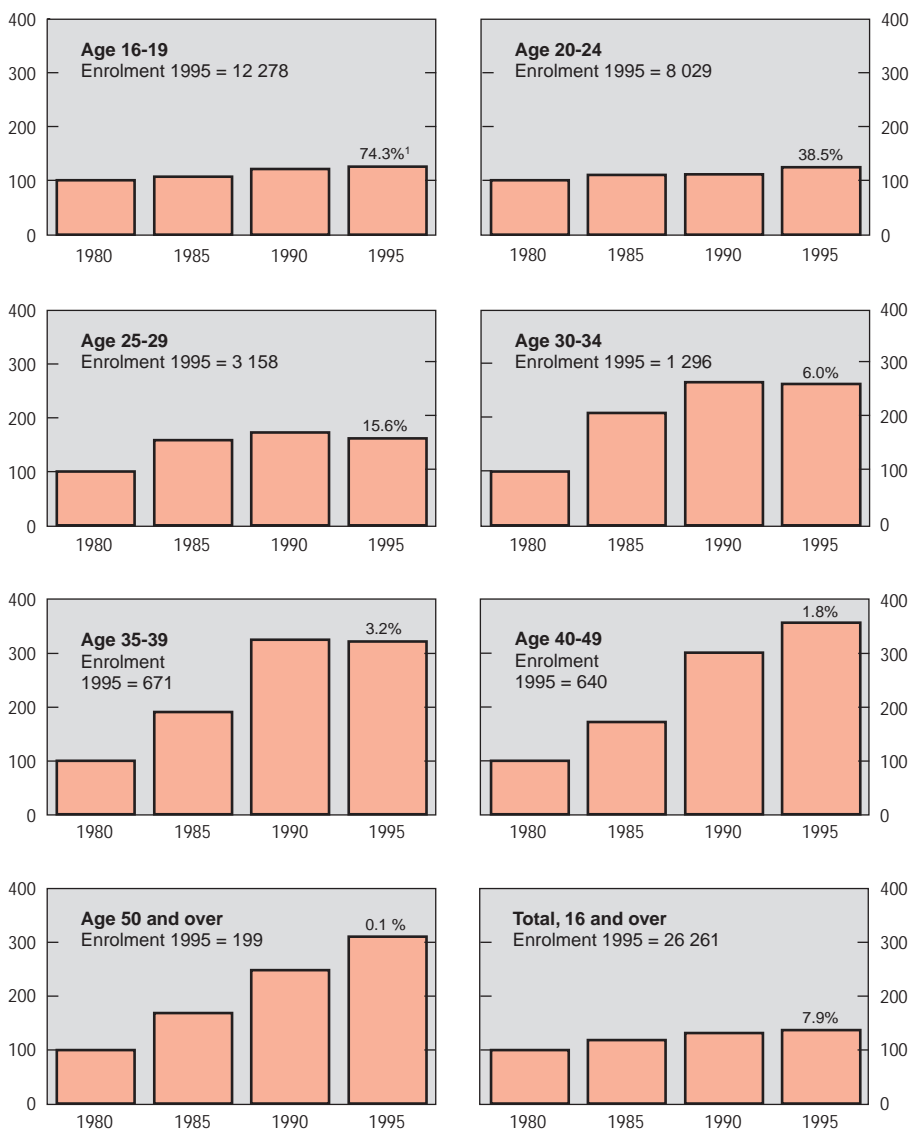
Source: OECD.

elsewhere. The former may result from the fact that in many remote communities no pre-schools are available, even though there are some 220 in the nation as a whole, some of which are private. Even though the municipal government pays a substantial share of their operating costs, their fees are around IKr 25 000 per month (almost \$400) for a full-time place, a price which can be dissuasive. Nonetheless, the number of children in such institutions has nearly doubled since 1980. But by age 6 virtually all children are enrolled in primary educational institutions, as in most other countries. At ages 16 and 17 Icelandic youth tend to have lower enrolment rates than the average OECD country (OECD, 1996a, Table P3.1), leading some observers to diagnose a drop-out problem (see below). Regional variations may also be important beyond the compulsory schooling age: for example, in 1994 only 33 per cent of all 20 year-olds were still in school in the Vestfirðir region, compared to 46 per cent in Reykjavík (Statistics Iceland, 1996, Table 18.6).

Overall there are around 80 000 pupils and students in Icelandic educational institutions (excluding about 4 000 adults taking evening classes and 1 700 students abroad), about 30 per cent of the total population. Of this figure 42 000 are in compulsory schooling, possibly 14 000 in pre-schools, 17 000 in upper secondary schools and 7 500 in tertiary institutions. The trend has been toward slow increases in the student population in recent years, at least beyond the compulsory level (where the number of pupils has been falling slowly everywhere in the country except the Reykjanes peninsula and Reykjavík, toward which the population has been migrating),²⁹ implying higher average educational attainment among the general population. It is noteworthy that, despite low enrolment in formal education by very young children as well as 16 and 17 year-olds, school expectancy for a 5 year-old child, at 15.3 years in 1994, is virtually identical to the OECD country mean (OECD, 1996a, Table P1.2). It is because secondary, especially upper secondary, schooling is so lengthy and increasing shares of each cohort (especially among women) are persisting in the system right through to the matriculation examinations which grant admission to university education and are typically taken at age 20 that net enrolment rates for 19 and 20 year-olds are very high by OECD standards (OECD, 1996a, Table P3.1). And the extent to which people outside the traditional age groups have been boosting their participation in formal schooling is striking: the number of students over 35 has more than tripled since 1980, for example (Figure 18). This move, which may possibly

Figure 18. **TOWARDS LIFELONG LEARNING**

Enrolment, 1980 = 100



1. Enrolment ratio.

Source: Statistics Iceland (1996).

be toward “lifelong learning”,³⁰ has put substantial pressure on available capacity in the system, especially at the tertiary level (see below).

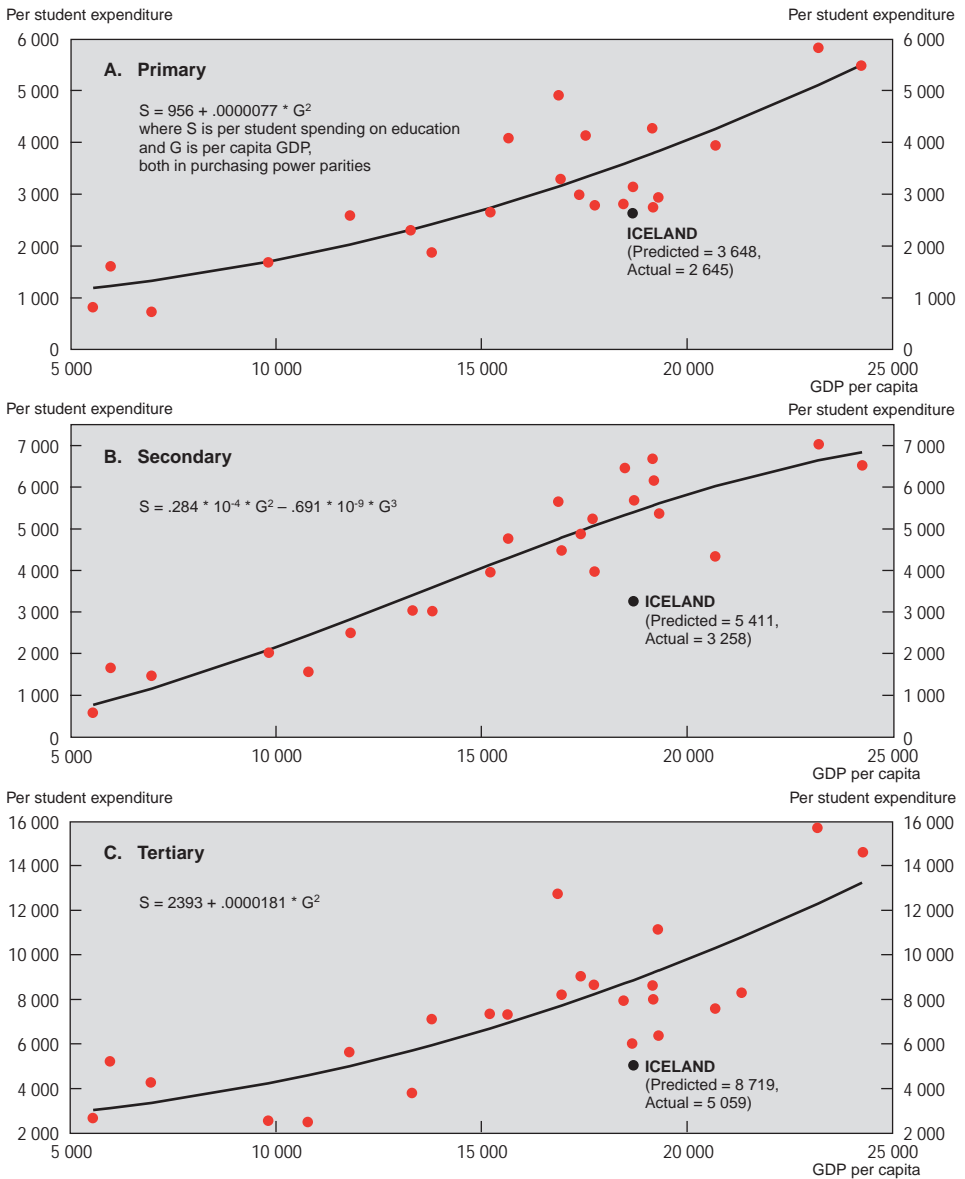
Total spending per student and in relation to GDP

Given the size of the student body total spending on the educational system is determined by levels of public and private expenditure per student. It is customary that spending per student is greater the higher the level of education (although in some countries early childhood spending per pupil exceeds that at the primary level): in the average OECD country the secondary and tertiary spending multiples over primary levels are 33 and 138 per cent, respectively. Iceland too spends more per student on its older students, but at each level it spends far less than the average OECD country in purchasing power parity terms – the gaps are 16, 22 and 32 per cent at primary, secondary and tertiary levels, respectively.³¹ But education is a “normal” good: as income levels rise, more of it is demanded.³² This cross-country relationship between income per capita and per student expenditure is well established (Figure 19). Yet at each level of education it is clear that Iceland is an outlier in the lowness of its spending. The gaps between the predicted and actual outlays per student are 27, 40 and 42 per cent, respectively. The difference represents a saving of IKr 10 billion (\$150 million) in 1993, around 2.4 percentage points of GDP.

Some information is available regarding the nature of spending on educational institutions. Most commonly it is broken down by current *versus* capital outlays, and among those which are current between compensation and other current spending. It is also useful to distinguish between educational levels, as the composition of tertiary spending can be quite different from that at the compulsory level. Care should be taken since such disaggregations may vary from year to year, especially for a small country like Iceland. In Iceland’s case capital outlays in 1993 were an unusually large share of total spending by OECD standards at the primary/secondary level, while compensation represented a particularly small proportion (Figure 20): indeed, no other OECD country spent less of its total on compensation except the Czech Republic, and staff compensation per student was lower in PPP terms than in all but five other OECD countries, all with substantially less per capita income than Iceland. The story is radically different at the tertiary level, however. There, capital spending in 1993 was the second smallest share in the OECD (only Belgium had a smaller share), and

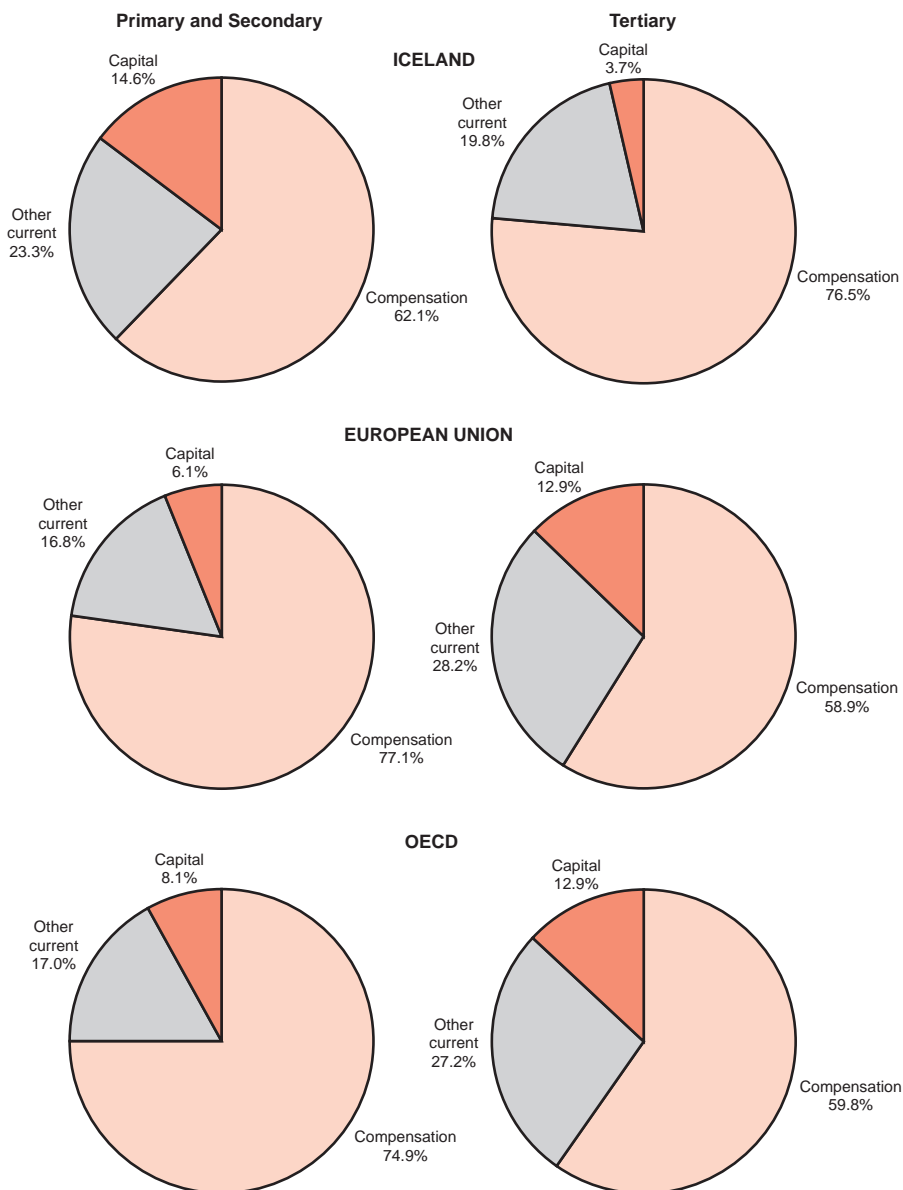
Figure 19. **THE INCOME ELASTICITY OF EDUCATIONAL SPENDING
IN OECD COUNTRIES**

US dollars, converted using PPPs, 1993



Source: OECD.

Figure 20. **BREAKDOWN OF EDUCATIONAL EXPENDITURE, 1993**



Source: OECD.

compensation had the largest share of any OECD country.³³ Nonetheless, with low total spending at the tertiary level, staff compensation per student was still 10 per cent below the OECD country mean.

Teacher pay

It is therefore important to examine the evidence whether the low levels of overall spending, and of compensation and capital spending in particular, are having effects first in terms of low teacher salaries exerting a possible negative influence on the longer-term supply of teachers, and second on class size, overcrowding or poor facilities. Basic teacher pay rose rapidly in real terms in the late 1980s but then receded once again in the early 1990s (Table 16). In 1995 there was a lengthy teachers' strike which was settled with a sizeable increase in pay, but 1990 levels were still not regained. Compared to other public sector employees with similar educational attainment (that is, members of the Federation of Graduate Public Employees) their pay has long been significantly lower, even though it is somewhat higher than that of average private-sector workers, whose educational attainment is generally much lower. Given their income aspirations, many teachers, especially male teachers, have therefore chosen to work substantial overtime, even by Icelandic standards: by 1995 the average teacher was paid an additional 46 per cent for overtime (up from only 22 per cent in 1982) which is defined as that which is beyond 1 800 hours per year at the compulsory level.³⁴ A full-time teaching load averages about $18\frac{2}{3}$ hours of classroom hours in each of 36 weeks per year at the compulsory level or $16\frac{2}{3}$ for 35 weeks at the upper secondary level, each of which is 12 to 15 per cent below average OECD figures (OECD, 1996a, Table P33); thus, non-classroom hours would seem to be very long (about 60 per cent of the total). Surprisingly, overtime pay is less than what is earned by teachers' average public-sector counterparts, even if it does push teacher compensation further beyond the private-sector average. Turning to an international comparison the impression of low pay is confirmed: salaries are low in PPP terms and only half the OECD average in relation to per capita GDP; however, probably to a greater extent than elsewhere, because of the short school year, teachers can get a second job during summer, allowing them to draw two salaries during the vacation period.

Table 16. **Teacher¹ pay**

	1982	1986	1990	1994	1995
A. Average real monthly compensation over time (Kronur at 1995 prices)					
Excluding overtime pay	90 190	91 061	104 868	93 460	96 291
Including overtime pay	109 725	121 342	120 301	125 585	140 312
B. Relative compensation over time (teachers relative to others in per cent)					
Excluding overtime pay					
Members of Federation of Graduate Public Employees	81.2	83.3	86.1	84.2	87.4
State employees of the Federation of State and Municipal Employees	102.9	109.4	109.0	104.9	107.8
Members of the Icelandic Federation of Labour	95.7	110.4	103.1	107.0	108.4
Including overtime pay					
Members of Federation of Graduate Public Employees	77.5	80.5	83.7	76.9	80.9
State employees of the Federation of State and Municipal Employees	92.8	101.0	105.4	102.7	113.8
Members of the Icelandic Federation of Labour	83.6	103.2	101.6	105.3	114.1
C. International comparisons (Iceland relative to OECD country mean in per cent)					
Starting salary (excluding overtime)	n.a.	n.a.	n.a.	57	n.a.
Salary at 15 years experience	n.a.	n.a.	n.a.	51	n.a.
Salary at top of scale	n.a.	n.a.	n.a.	72	n.a.
Years from starting to top salary					
OECD country mean	n.a.	n.a.	n.a.	18	n.a.
Starting salary as per cent of GDP per capita	n.a.	n.a.	n.a.	25	n.a.
OECD country mean	n.a.	n.a.	n.a.	55	n.a.
				110	n.a.

1. Members of Teachers Association of Iceland *i.e.* mostly primary but some lower secondary school teachers as well.

Source: *Statistics Iceland* (1996), Teachers Association of Iceland, OECD (1996) and OECD Secretariat calculations.

Has this had an inhibiting effect on the supply or average quality of teachers? Or are such levels of compensation still above reservation wages, given the other advantages of being a teacher? Despite long-standing concerns that the teaching profession is “undervalued” in Iceland (OECD, 1987), the evidence is fairly clear that, whatever problems have existed in the past,³⁵ supply is currently ample for the most part, even though labour relations remain strained.³⁶ Total employment in the education sector has been growing very rapidly: from 7 800 in 1991 to 9 900 in 1996, an average annual increase of nearly 5 per cent. And, while average quality may, in theory, have been affected, a rising share of teachers at all levels through upper secondary are fully qualified in professional terms (Menntamálaráðuneytið, 1996). Teacher training has recently accounted for almost 20 per cent of all tertiary studies in Iceland, up from only 10 per cent nearly a decade ago and nearly half again as much as in the average other Nordic country (Table 17), despite a *numerus clausus* at the teachers college. Each year the number of graduates of teacher training represents about 7 per cent of the number presently in the profession (lower in the compulsory system and higher at the upper secondary level), more than enough to meet demand. As a result, new entrants, over 60 per cent of whom were over 30 years of age in 1994 and 1995, have for the most part worked less than full-time.³⁷ Shortages are currently widespread for teachers of mathematics and science and may exist in some rural areas, especially for primary and specialised types of teachers (such as those teaching music, art, physical and special education), but this would seem to point merely to a need for special pay premia by subject or in order to compensate for such unattractive locations. The recent devolution to the local level should allow greater flexibility by subject area and location.

The student/teacher ratio is the other key determinant of the level of compensation spending. Available data seem to show that the student/teacher ratio is in fact fairly low by international standards at the pre-primary and compulsory levels, but close to normal at the upper secondary level.³⁸ Until 1995, maximum theoretical class sizes were laid down by the national government: the legal ceiling had been 18 for children in the first grade, 22 for the following two grades and 28 for the remaining years of compulsory education. However, regional officials (abolished by the 1995 Act) were permitted to add two more to those figures. Effective mean class size seems to be around 20, with larger classes in Reykjavik and the nearby Reykjanes peninsula and 16 to 17 elsewhere.

Table 17. **Fields of study at the tertiary level in the Nordic countries**

Percentage shares except as noted

	Iceland		Denmark		Finland		Norway		Sweden	
	1986-87	1994-95	1986-87	1994-95	1986-87	1994-95	1986-87	1994-95	1986-87	1994-95
Total (level)	4 744	7 238	118 641	160 352	133 933	205 039	104 246	179 226	183 551	245 543
<i>of which:</i>										
Teacher training	10.2	19.7	14.0	12.9	10.3	9.3	12.7	15.3	11.7	15.6
Fine and applied arts	0.0	3.0	3.4	2.7	2.2	2.5	1.0	1.0	2.9	1.7
Humanities	16.5	15.1	12.7	15.5	12.4	10.4	7.2	10.7	11.6	18.8
Religion and theology	1.3	1.5	1.5	1.1	1.2	0.8	0.8	0.8	0.0	
Social and behavioural science	6.3	9.1	9.7	9.2	7.2	6.2	7.6	10.0	7.3	8.3
Business administration	16.6	8.8	9.3	13.9	9.4	11.6	25.0	13.8	14.5	10.2
Law and jurisprudence	9.3	6.9	4.0	3.6	3.0	2.1	4.5	4.7	5.0	4.4
Natural science	5.2	5.1	3.4	3.7	6.3	5.1	6.7	5.8	2.7	4.6
Mathematics and computer science	5.5	3.6	3.8	4.3	6.3	6.1	1.4	0.8	6.3	5.8
Health-related programmes	19.1	15.2	14.4	11.0	12.7	17.6	10.3	10.6	14.1	11.4
Engineering	7.2	8.1	14.0	12.3	22.9	22.0	11.9	10.0	17.3	15.3
Architecture and town planning	0.0	0.0	1.5	1.2	1.1	0.8	0.6	0.4	0.6	0.5
Trade, craft and industrial programmes	0.0	0.0	1.0	1.4	0.0	0.0	0.2	0.1	0.8	0.3
Transport and communications	0.0	0.7	1.0	0.1	0.0	0.0	0.8	0.6	0.3	0.3
Agriculture, forestry and fisheries	0.4	1.2	2.4	2.2	3.2	3.0	1.3	1.4	1.5	1.0
Home economics	0.7	0.6	0.0	0.0	0.6	0.7	0.0	0.0	0.3	0.1
Mass communications and documentation	1.5	1.3	1.2	1.3	0.2	0.0	0.6	0.9	1.0	1.4
Service trades	0.0	0.0	0.1	0.1	0.4	1.1	0.1	0.5	0.1	0.0
Other and unknown	0.0	0.0	2.5	3.5	0.3	0.7	7.3	12.8	7.5	0.3

Source: Nordic Statistical Secretariat (1988 and 1996).

Capacity utilisation and the length of the school-year

Another question is whether the system is operating above physical capacity, that is whether there is sufficient capital stock to meet demand. Closely related to this capacity question is the length of the school year. A lack of premises – no doubt related to the poor financial situation of many municipal governments (see Chapter II) – lies behind the need for a shift system in about one in three compulsory schools covering around 62 per cent of all students, especially in Reykjavik and the Reykjanes peninsula: some children attend school in the mornings (starting at 8 am), others in the afternoon, and sometimes the same teacher teaches both classes.³⁹ Lessons are 40 minutes long, and, in recent years, the standard week has comprised 25 lessons per week for the first few years of compulsory school, rising to 34 per week by age 13. With a low share of instructional hours in total teacher hours (see above) and a fairly typical student/teacher ratio, the school year of around 533 hours for six year-olds in 1994-95 was lower than anywhere else in Europe except Sweden and 26 per cent less than the European mean; for nine year-olds it was easily the shortest school year in Europe (555 hours, 31 per cent less than the mean); and 725 hours of instruction time per year at age 13-15 was lower than all other OECD countries with data except Turkey and 22 per cent less than the mean (OECD, 1996a, Table P11.1). Smaller, rural schools (which often board their pupils⁴⁰ because of their remote locations) were traditionally open for as little as seven months per year, sometimes transforming themselves into hotels in the summer months; the attendant long summer breaks may well have hindered learning, even though it did free up labour for an important period in what was traditionally a labour-short economy.⁴¹ But the nine-month school year has become predominant since the mid-1980s, with over 90 per cent of compulsory pupils in nine-month schools.

At the upper secondary level the school year is especially short, with Icelandic hours 16 per cent below the European mean (Menntamálaráðuneytið, 1996): instruction time is around 624 hours per year, although under 1996 legislation it is to be lengthened by 96 hours, as it is for compulsory levels (the standard week will be 30 lessons for the youngest children and 37 for the oldest), apparently by shortening the examination periods.⁴² Recent legislation also sets as a goal the elimination of double-shift schools by 2002. It is possible that the shortness of the school year is partly responsible for the need to have so many

years of schooling: the typical age at upper secondary graduation and the median age for completion of a first university degree are 20 and 27, respectively, both well above OECD norms and the latter a full five years after the Australian equivalent (OECD, 1996a, Table R12.3). Many vocational students also do not take their final secondary school examinations until the age of 24 or 25. The authorities are studying whether it is possible to shorten upper secondary schooling from four to three years as the school year is lengthened; this would free up capacity and release students to the job market faster.

As pointed out above, the question of capacity is especially relevant for the tertiary sector where overall and especially capital spending looks meagre by international standards. The University of Iceland seems especially subject to overcrowding: student numbers have risen sharply in recent years, reaching nearly 5 700 in 1995, a rise of one-third since 1988. This was largely unanticipated, as projections made a decade ago (OECD, 1987) called for a student body of only 5 200 by the year 2000. But the overcrowding problem is not entirely a recent development: OECD (1987, p. 35) already stated that “there is a shortage of everything: funding, classroom facilities, laboratories, library space (a situation some describe as ‘disastrous’) and student accommodation”. Either capital spending should rise to conform to greater student numbers or, where that is not efficient, more should be encouraged to study abroad. Another obvious answer is to extend the use of “distance learning” (as the United Kingdom has done with the Open University) by making use of modern communications technology, such as the Internet;⁴³ this could also improve the quality of education as well.

The output and efficiency of the system

Attainment and the drop-out problem

To this point it has been shown that Iceland’s initial education system is low cost but that it may entail low educational output, given the unusual shortness of the school year, combined with the inordinate number of years required to finish both secondary and tertiary education. It is, therefore, crucial to look at whether output reaches international standards – in which case efficiency would be good in most dimensions⁴⁴ – or whether further efforts would be needed to meet such standards. One way of looking at the output of the system is to look at educa-

tional attainment.⁴⁵ It is certain that attainment has been rising steadily over time⁴⁶ (Table 18), even if good data exist only for the 1990s (Table 19), and that average attainment is significantly higher in Reykjavik than elsewhere in the country (especially in the north-west). But it is less than sure how Iceland compares with other OECD countries in this domain. It would appear that the distribution of attainment among the population has a similar mean but probably greater dispersion than that in the average OECD country: there is probably both a slightly higher proportion of the adult population who have completed tertiary schooling than elsewhere (but about the same as in other Nordic countries) and a higher share who have completed only lower secondary, but not upper secondary education.⁴⁷ A key issue is whether it is satisfactory to have such a high share of the population who begin but fail to complete (upper) secondary education, which amounts to what is commonly referred to as a drop-out problem.

Table 18. **Share of 20 year-olds passing matriculation examination**

	Per cent		
	Total	Males	Females
1974-75	21.7	21.7	21.6
1975-76	21.4	21.4	22.0
1976-77	24.5	24.6	24.4
1977-78	22.3	20.3	24.3
1978-79	24.3	22.6	26.2
1979-80	25.1	21.8	28.6
1980-81	29.3	25.4	33.4
1981-82	30.3	25.5	35.2
1982-83	32.1	25.6	39.0
1983-84	34.6	27.9	41.3
1984-85	35.2	28.5	42.3
1985-86	37.3	30.6	44.2
1986-87	39.2	31.4	47.2
1987-88	40.1	33.7	46.8
1988-89	40.2	32.7	47.7
1989-90	44.7	34.4	55.4
1990-91	42.4	32.6	52.8
1991-92	44.9	35.9	53.3
1992-93	45.1	37.0	53.8
1993-94	51.4	42.8	60.4
1994-95	49.0	39.1	59.0

Source: Statistics Iceland (1996).

Table 19. **Educational attainment for the population aged 16-74**

	Per cent				
	1991	1992	1993	1994	1995
Share with lower secondary education only	49.8	49.8	49.6	48.0	43.3
Share with upper secondary or non-university tertiary education	40.5	40.6	40.7	41.7	45.6
Share with university education	9.7	9.5	9.8	10.3	11.2

Source: Statistics Iceland, *Labour Market Statistics*, seriatim.

This problem is vividly illustrated by the fact that while 90 per cent of all youths completing compulsory education enrol in an upper secondary programme only 50 per cent of them graduate from academic programmes, while another 15 to 20 per cent complete vocational education. However, the situation seems to have improved significantly over the past 20 years (Table 18). Failure to complete upper secondary schooling is compounded by further heavy dropping out at the university level (OECD, 1987), as only around half of all students entering ultimately graduate. Oskarsdottir (1995) argues that this upper-secondary drop-out problem is no worse than in Norway and the United States and probably less serious, even if Icelandic students do begin dropping out earlier than their US counterparts. Indeed, it must be admitted that these figures probably overestimate the extent of the secondary drop-out problem, because many such students may prove to be only temporary drop-outs and to return to school later on, after having gained valuable work experience. But, on the other hand, OECD data (OECD, 1996a, Table R11.1) would seem to indicate that the overall cohort upper-secondary graduation rate is very low, given that the average country sees 37 per cent of a cohort graduate from general programmes at the upper secondary level and an additional 42 per cent from vocational programmes. While drop-out rates from academic programmes are high by international standards, that may well be largely because of the accent placed on the academic stream, rather than vocational education: 61 per cent of all upper secondary students (and 72 per cent for women) are in general programmes, 14 percentage points above the OECD mean (OECD, 1996a, Table P3.2). Thus, the drop-out problem appears to be inextricably related to the weakness of the vocational system at the upper

secondary level; 1996 legislation attempts to increase the emphasis on vocational studies and sets entrance requirements for some programmes. Some observers have also attributed the drop-out problem to the lack of a sense of cohort in the schools which have a credit system and allow different paces of progress toward matriculation. It is possible that more widespread access to remedial teaching in the first year of upper secondary schooling would help. Nevertheless, rather than academic difficulties, some survey evidence points to a lack of money as the main reason individuals do not continue their education, even though grades and parental educational attainment are also important determinants. If money is indeed the crucial factor and there are difficulties in borrowing against expected future income in the private sector, the authorities should consider making student loans more generally available to all upper secondary students and not just to those following certain vocational courses of study as at present.

Comparative outcomes

Although it is, of course, theoretically possible that standards are higher in Iceland than abroad, that does not appear to be the case. International comparisons of this sort are notoriously difficult to make, but some evidence has begun to emerge in the 1990s on this question.⁴⁸ Some years ago a reading literacy test was administered to 9 and 14 year-olds in a large number of countries including Iceland. It showed Icelandic children were slightly above average at the younger age and that they moved even a little further ahead of the pack in the following years (Table 20), even though they seem not to read very much (OECD, 1995a, Table R05).⁴⁹ But very recently similar tests were administered in mathematics and natural science to children in lower secondary school, and the results were clearly disappointing as far as Icelanders were concerned. In both subject areas they scored well below average in the first year and then, if anything, fell back even further in the following grade. Only 2 per cent of participants stood in the top 10 per cent in the OECD in both tests (OECD, 1996a, Table R9). This may at least partly be attributed to curriculum focus (see Box 1). There is thus some evidence that Iceland is not able to get the same educational output in all subject areas as other OECD countries while spending substantially less.

Yet it should be remembered that the evolution of educational outcomes is influenced by many factors other than the formal educational system. For example, the home environment is widely acknowledged to be crucial in determining

Table 20. Achievement in reading literacy, mathematics and science¹

Mean scores

	Reading literacy			Mathematics			Science		
	9 year-olds	14 year-olds	Difference	Seventh grade	Eighth grade	Difference	Seventh grade	Eighth grade	Difference
North America									
Canada	n.a.	n.a.	n.a.	494	527	33	499	531	32
United States	389	514	125	476	500	24	508	534	26
Pacific									
Australia	n.a.	n.a.	n.a.	498	530	32	504	545	40
Japan	n.a.	n.a.	n.a.	571	605	34	531	571	40
Korea	n.a.	n.a.	n.a.	577	607	30	535	565	30
New Zealand	364	528	164	471	508	36	481	526	45
European Union									
Austria	n.a.	n.a.	n.a.	509	539	30	519	558	39
Belgium									
Flemish	n.a.	n.a.	n.a.	n.a.	565	n.a.	n.a.	550	n.a.
French	334	446	112	n.a.	526	n.a.	n.a.	471	n.a.
Denmark	291	500	209	465	502	37	439	478	39
France	367	531	154	492	538	46	452	498	46
Germany	329	498	169	484	509	25	500	531	32
Greece	332	482	146	440	484	44	449	497	49
Ireland	337	484	147	500	527	28	495	538	43
Netherlands	304	486	182	516	541	25	517	560	43
Portugal	n.a.	n.a.	n.a.	423	454	31	428	480	52
Spain	330	456	126	448	487	39	477	517	40
Sweden	379	529	150	478	519	41	488	535	47
United Kingdom									
England	n.a.	n.a.	n.a.	476	506	30	512	552	40
Scotland	n.a.	n.a.	n.a.	463	499	36	468	517	49
Other Europe									
Czech Republic	n.a.	n.a.	n.a.	523	564	40	533	574	41
Hungary	n.a.	n.a.	n.a.	502	537	36	518	554	36
Iceland	350	514	164	459	487	27	462	494	32
Norway	358	489	131	461	503	43	483	527	44
Switzerland	340	516	176	506	545	40	484	522	38
Country mean	346	500	154	483	516	33	484	523	39

1. 1991 for reading literacy; 1995 for mathematics and science.

Source: International Association for the Evaluation of Educational Achievement and OECD (1995 and 1996).

outcomes. Parental involvement in assisting pupils with their homework is obviously constrained by labour force participation, especially that of women. As elsewhere, this has risen substantially over time and is higher than in most other OECD countries (see Chapter IV). Furthermore, single parenting makes academic achievement more difficult. The proportion of all children under 16 living with only one adult rose almost monotonically from 11.6 per cent in 1980 to 16.8 per cent in 1991, before edging back to 15.5 per cent in 1994. For children under 18 the share in 1994 was 16.2 per cent. These figures seem to be intermediate by international standards. The simple mean for the other four Nordic nations for the under-18 group in the early 1990s was 13.1 per cent, but in the United States the corresponding share is over a quarter.

Quality control and accountability

There is arguably a risk of a lack of incentives to perform and thus of quality control and accountability in the system. Little competition is provided by private schools: less than 2 per cent of all compulsory-level pupils attend any of the six private schools (one of the lowest shares in the OECD), and school choice for families in most districts is of necessity largely a fiction due to the sparseness of the population and the lack of crossing of district lines. Twenty years ago optional secondary school-leaving examinations granting admission to upper secondary grammar schools were abolished, but there are currently common ending examinations in Icelandic, English, Danish and mathematics; these show substantial variation across regions, with pupils in Reykjavik easily outdistancing their more rural counterparts (Menntamálaráðuneytið, 1996), perhaps in part because of the traditionally longer school year. Girls' results are also clearly superior to boys'. In 1996 for the first time all 9 and 12 year-olds were tested in Icelandic and mathematics. Standardised, nationally set examinations are scheduled to be introduced by 2002 for graduation from upper secondary school in order to raise standards (few of those sitting the current, locally set examinations are given failing grades),⁵⁰ even though some observers fear this may lead to teaching to the examination. Since 1993 the independent Institute of Educational Research has been responsible for the development, implementation and grading of national examinations.

Under strong parental pressure for more information and decision-making input,⁵¹ the 1995 Act on Compulsory Education and the 1996 Act on Upper

Secondary Education put greater emphasis on evaluation and quality control, which OECD (1987) claimed was lacking, by requiring all schools to have a nationally accredited self-evaluation system within five years; this may even include a system of evaluating individual teacher performance, already undertaken at the university level. Competition between schools should be enhanced as information on results of standardised compulsory school-leaving examinations has just begun to be made public systematically.⁵² This is consistent with the conclusions of OECD (1995*b*) that while the question of whether test results should be used to guide parental choice regarding enrolment is controversial, it is in the interests of the public, parents and students that education systems provide information on individual and school performance. Thus far, it is only at the upper secondary level that reputational effects seem to be operating – since access to preferred schools is at least unofficially determined by grades – and that choice mechanisms might be said to function. Finally, at the university level, access has always been open to all who have passed the matriculation examination. There have been a few external evaluations of individual faculties/departments – with favourable assessments – but such efforts have not yet been institutionalised, although there are plans to increase evaluation in a forthcoming bill on higher education.

The special costs (and benefits) of being small

Iceland does face some related cost disadvantages in education as in a number of other domains due to its extremely small size and the uniqueness of its language. The most obvious of these is the cost of providing teaching materials in its native language: at the compulsory level school book publishing is a state monopoly under the aegis of the National Centre for Educational Materials.⁵³ Curriculum development is therefore a special challenge, particularly, according to the authorities, in social studies, world history and science. The need to devote a substantial amount of school time, even at the compulsory level, to learning foreign languages (especially English and Danish) is also burdensome, even though it is a crucial investment in today's increasingly English-speaking world. One possibility might be to try to teach some non-core subjects in a foreign language, preferably English,⁵⁴ even at the compulsory level.

In addition, costs are probably boosted by the small school sizes prevalent in rural areas, especially at the compulsory level (Table 21). Closely related is the

Table 21. Average school size, 1995-96

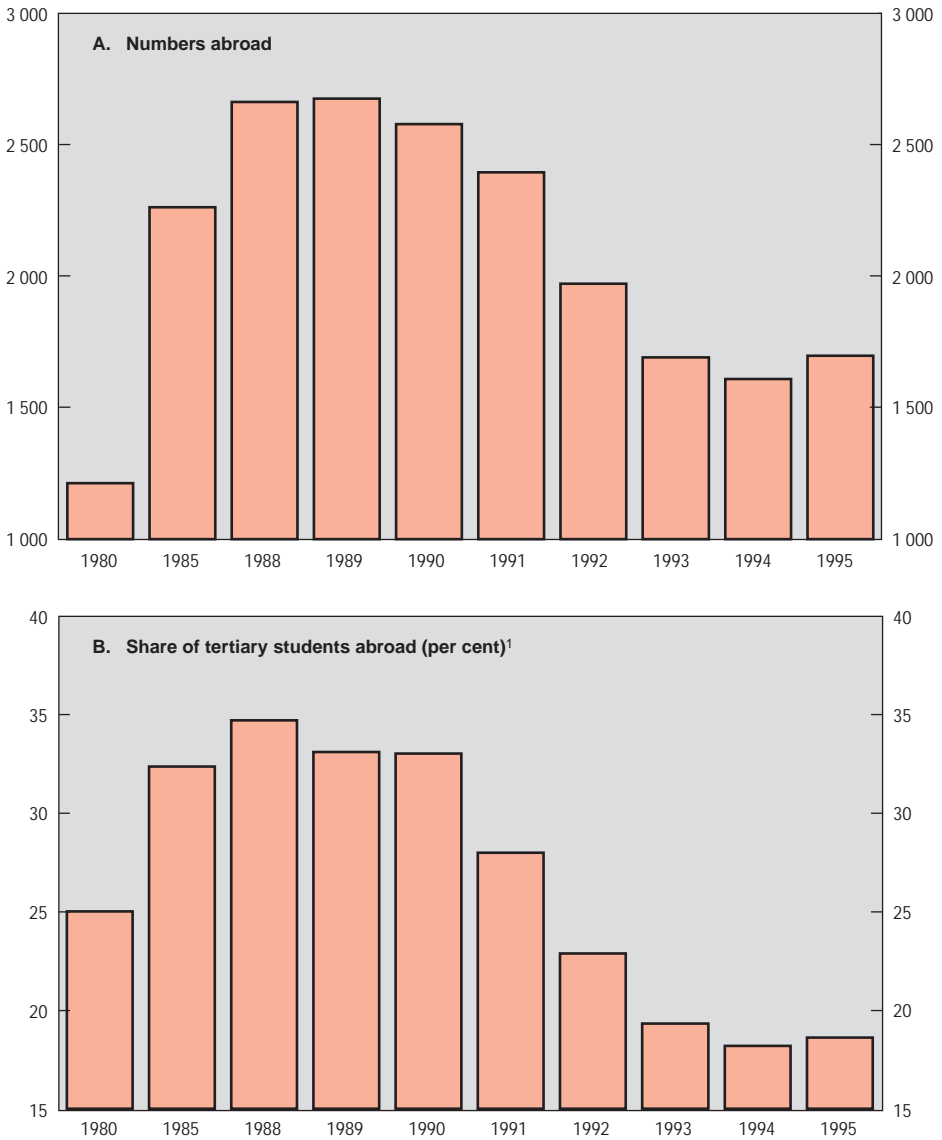
Number of students	Compulsory level		Upper-secondary level ¹		Tertiary level	
	Number of schools	Percentage share of students	Number of schools	Percentage share of students	Number of schools	Percentage share of students
50 or less	64	3.7	7	1.0	2	0.4
51-100	33	5.7	5	2.5	4	4.0
101-200	30	10.0	4	4.6	2	3.9
201-400	39	27.6	5	9.9	3	12.6
401-600	33	39.0	5	15.7	0	0.0
601-800	4	8.0	4	17.8	1	8.3
801-1 000	4	6.0	5	28.4	0	0.0
1 000 and more	0	0.0	2	20.1	1	70.8
Total	207	100.0	37	100.0	13	100.0

1. 1994-95.

Source: Menntamálaráðuneytið (1996).

need to reach minimum efficient scale to offer educational opportunities in a number of fields, especially at the tertiary level. Iceland has therefore had a tradition of requiring those students who wish to pursue certain specialised studies, especially at the graduate level, to do so abroad, relying on the government's Student Loan Fund (see below) to finance the costs. Studying abroad is clearly the cost-effective solution to this inescapable problem of small scale, especially for programmes with very heavy fixed costs. It also allows the individual to choose the institution best suited to his or her needs, and the resulting international perspective probably constitutes a clear advantage in today's globalised labour and product markets. Of course, there is a resulting risk of "brain drain", but the evidence is that the large majority (probably around 90 per cent) of those students have returned to Iceland, even though it may be becoming more acceptable to stay abroad, given poorer employment prospects at home in recent years. The number of students abroad grew rapidly in the 1980s, reaching more than 2 500 (35 per cent of all tertiary students) near the end of the decade (Figure 21), but they have fallen rather sharply in recent years due to the tougher terms on Fund lending imposed in 1992 (see below), as well as the decision not to lend to those wishing to take courses abroad which are available in Iceland. While this latter change seems to make fiscal sense in view of the subsidy element remaining in Fund lending (see below), it may limit the diversity

Figure 21. **STUDENTS STUDYING ABROAD**



1. Assuming all those studying abroad are at the tertiary level. Only includes those receiving assistance from the Students Loan Fund.

Source: *Statistical Yearbook of Iceland*.

of views available to Icelandic students. Finally, it should be noted that overall there are also about 200 foreign students at the University of Iceland, about half of whom are studying the Icelandic language.

The financing of education spending

The way in which education is optimally financed is also much debated. Education is not as clear a public good as, say, defence, and so other arguments must be raised as to why it should be subsidised or publicly provided. OECD (1996*f*) and Trostel (1996) cite equity reasons (access should not depend on socio-economic background), paternalism (basic education is compulsory in all OECD countries), borrowing constraints (because human capital is risky, non-diversifiable and not easily collateralised) and both economic and other externalities (which probably diminish with the level of schooling) as the traditional justifications for subsidy. But, as Trostel points out, the first and third would not call for a blanket subsidy, the second relies on the dubious proposition of systematically ill-informed parents and students and the fourth is unlikely to justify free provision at all levels. However, income taxation (either if progressive or if transfer income is not fully taxed) discourages investments in human capital, and subsidies can be seen as a second-best solution to reversing that distortion. The optimal subsidy rate is higher the higher the marginal tax rate and the lower the dead-weight loss associated with the financing of the subsidy.

In Iceland's case, as elsewhere in the OECD, education is nevertheless publicly provided, as it is seen as cementing social relationships extending beyond those which are market based. There has also long been an emphasis on free access. Even at the pre-school level, family financial contributions average only about one-third of operating costs. At the compulsory level they pay for some materials. At the upper secondary level there are registration fees of IKr 3 000 to 5 000 per semester (\$100 to \$150 per year), and students also have to pay for textbooks and a portion of materials costs for vocational subjects. At the tertiary level there are also registration fees (see below), but students have access to the Student Loan Fund to cover living expenses, as they do in a few cases for vocational studies at the upper secondary level. Finally, for evening classes students are charged one-third of instructional costs.

Pre-schools and day-care institutions are the responsibility of local government; they pay almost two-thirds of the total cost, with the rest picked up by parents. Compulsory-level schools were until 1996 jointly financed by local and central government.⁵⁵ Now the nation's 167 municipal governments have taken over full responsibility⁵⁶ in exchange for 2 percentage points of taxable personal income. In addition, a special fund has been set up with a further half point in order to offset the effects of different per capita income levels and school sizes. Representatives of local government are confident that they can do a better job of running schools than when responsibilities were divided; for example, they can plan young people's leisure activities in conjunction with their education. But whether the special fund will be adequate to prevent local authorities in weaker economic areas⁵⁷ from making unwarranted cuts in educational spending is as yet unclear. Since 1990 the State and local governments have split capital costs for upper secondary schools in the ratio 60/40, with all other expenses covered by the State. It is only at this level that money directly follows the number of students at an institution; however, at no level are funds allocated according to the number of students successfully passing (with none provided for those who fail) examinations, as in Denmark for example. At tertiary institutions the State covers salary costs and most other costs as well (see below). Overall, prior to the recent financing reform, Iceland's system of funding was more centralised than that of the average OECD country: 73 per cent of initial sources of public educational outlays in 1993 were provided by central government, compared to a country mean across 24 current OECD Members of 59 per cent (OECD, 1996a, Table F12.1).

University-level funding is of special importance. The University of Iceland receives a State subsidy in the form of a block grant of IKr 1.6 billion⁵⁸ as well as IKr 400 million in grants and research contracts, IKr 300 million from the university-run lottery for capital spending and only IKr 100 million from students (who are required to pay only IKr 22 000 (about \$330) per year in registration fees. Thus, students pay only a tiny share of the cost of their education,⁵⁹ only about one-sixth as much in relation to GDP as the average of the 17 Member countries for which data were available in 1993 (OECD, 1996a, Table F1.1c). And, as regards loans, even though no explicit grant element is included, full costs are not recovered, and the maximum annual loan ceiling for married students with children, for example (IKr 1.3 million or nearly \$20 000 dollars), is

Table 22. Student grant and loan schemes in Europe

	Entitlement (G: general; T: targeted)	Per cent of students covered	Grants	Loans	Max. ann. grants and loans, % of APW earnings	Principal design features
Belgium	T	20	x	x	22	Subsidised loans are available in Wallonie for families with three or more children; no loans in Flanders.
Denmark	G	70	x	x	27	The grant amounts to 69 per cent of maximum total support. The interest rate on loans is substantially lower than market rates during the period of study, but is equal to market rates thereafter. Repayment starts one year after termination of studies, and the repayment period is 7 to 15 years (depending on the size of the loan).
Finland	G	n.a.	x	x	24	The grant amounts to 57 per cent of maximum total support. The loans are supplied by banks, with state guarantees up to a certain limit. Interest rates and repayment periods are agreed between individual students and banks.
France	T	18	x	x	30	Banks provide loans at market interest rates.
Germany	T	32 ¹	x	x	21	The grant amounts to 50 per cent of total support. Loans are interest free, and repayable over 20 years at most.
Greece	T	7	x	x	9	The grant amounts to 50 per cent of total support. Loans are interest free.
Iceland	G	63 (1990/91) 43 (1993/94)		x	85 ³	The loans are fully indexed, and the real rate per annum can be up to 3 per cent after termination of studies (no interest during the period of study). Repayment starts two years after the end of studies and repayment periods vary.
Ireland	T	34	x	x	12	Interest-bearing bank loans are available when studies are well advanced.
Italy	T	3	x		4	Loans carry zero real interest rates.
Netherlands	G, T	75	x	x	19	The basic grant amounts to 65 per cent of total support. The loans carry interest rates which have a premium of half a percentage point over market rates.

Table 22. **Student grant and loan schemes in Europe** (*cont.*)

	Entitlement (G: general; T: targeted)	Per cent of students covered	Grants	Loans	Max. ann. grants and loans, % of APW earnings	Principal design features
Norway	G	70	x	x	28	The grant amounts to 18 per cent of total support. The interest rate is lower than the market rate after the termination of studies (no interest during the period of study). Repayment starts one and a half years from the end of study, and the repayment period is up to 20 years, with low payments in the first three years.
Portugal	T	10-15	x	x	40	Loans are interest free.
Spain	T	20	x		28	Loans are for three years, and the state guarantees 50 per cent of the loan.
Sweden	G	n.a.		x	34	Interest rate is applied during the period of study. The interest rate is below the market rate. Repayment commences half a year after the termination of studies and is set equal to 4 per cent of taxable income in the previous year. Repayment stops at age 65.
United Kingdom	G	76 ²	x	x	23	Undergraduates can obtain interest-free loans. The repayment period is 5 to 7 years. The long-term aim is that the grant will amount to 50 per cent of total support.

Note: x means that grants and loans are available.

1. The figure refers to the Western Länder. In the Eastern Länder 90 per cent of students receive support.

2. The figure refers to students receiving grants. Twenty-two per cent of students took loans.

3. The figure refers to students with dependent spouse and two children. For single students in rented accommodation the loan amounts to 39 per cent.

Source: Finansministeriet, Administrationen af Statens Uddannelsesstotte, Copenhagen, 1994; Menntamálaráðuneytið, Upplýsingar um námsaðstoð í ýmsum Evrópulöndum, Reykjavík, 1994.

nearly as high as average production worker earnings, several times higher than in other European OECD countries (Table 22).⁶⁰ The question of whether university students should pay a greater share is, therefore, apposite. Since most of the returns to tertiary studies are likely to be private, such heavy subsidisation is probably not necessary and may be welfare-reducing. OECD (1996*f*, Table 8.19) lists 12 different financing schemes according to seven criteria and concludes that a combination of individual entitlements and substantial income-contingent loans are probably the best choice, even though such loans introduce an adverse selection problem (Krueger and Bowen, 1993). If students were to begin paying tuition fees, as is the case in Australia, for example, then they would undoubtedly come to feel like customers and bring pressure to bear to ensure that a quality service is provided,⁶¹ and they might make field choices which might better reflect labour-market signals – fewer would enrol in fine and applied arts,

Table 23. **The Student Loan Fund**

Ikr million

	Central government capital transfer to the fund (current prices)	Column 1 in real terms (1997 prices)	Column 1 as share of GDP (per cent)	Column 1 as share of Treasury expenditures (per cent)	Gross lending (current prices)	Gross lending less repayments
1980	54	1 174	0.33	1.4	62	49
1981	83	1 198	0.33	1.3	118	98
1982	153	1 445	0.39	1.6	216	176
1983	362	1 947	0.53	2.1	432	394
1984	428	1 834	0.48	2.0	736	662
1985	896	2 925	0.74	2.9	1 173	1 078
1986	1 072	2 790	0.66	2.7	1 352	1 200
1987	927	2 019	0.44	1.8	2 070	1 729
1988	1 607	2 850	0.63	2.2	2 742	2 244
1989	1 798	2 661	0.58	2.1	2 811	2 407
1990	2 174	2 755	0.60	2.2	3 571	3 045
1991	2 432	2 864	0.61	2.2	4 198	3 529
1992	1 996	2 267	0.50	1.8	3 684	2 819
1993	1 699	1 884	0.41	1.5	2 559	1 671
1994	1 497	1 626	0.34	1.3	2 648	1 698
1995	1 444	1 523	0.32	1.2	2 710	1 551
1996 ¹	1 450	1 485	0.29	1.1 ²	2 790	1 575
1997 ³	1 600	1 600	0.31	1.3	2 883	1 517

1. 1996 budget figure.

2. Share excluding the Ikr 10.1 billion in interest payments incurred due to early bond redemption.

3. 1997 budget figure.

Source: Ministry of Finance, National Economic Institute and OECD.

religion and theology and teacher training (where Iceland has high shares by Nordic standards) and more would study business administration, engineering and mathematics and computer science (where shares are low; see Table 17). In order not to impinge on the equity aspects of access, increased availability to loans through the Student Loan Fund could be provided to those in need. Since the mid-1980s the Fund's importance has dropped by half or more in relation to overall Treasury expenditure and with respect to GDP (Table 23).

The returns to education in the labour market

Would additional spending yield adequate private and social returns to justify the outlay? In other words, does investment in human capital development confer productivity-enhancing skills which manifest themselves in higher wages and higher productivity or is it merely certifying "trainability" and therefore ordering individuals who are about to enter the labour market? It is still by no means clear to what extent school resources influence attainment and yield additional earnings to the individual (Burtless, 1996; Moffitt, 1996).⁶² OECD (1996*e*) presents a summary of estimated returns to education in the United States, the United Kingdom and the Netherlands showing them for the most part concentrated in a range of 3 to 12 per cent for both private and social measures. Higher pre-tax returns are estimated in OECD (1997, Table II.24) for 12 OECD countries. Alsalam and Conley (1995) find private returns mostly in excess of 10 per cent, especially for men. Vaillancourt (1995) also finds that returns to education in Canada in 1985 were much higher in private terms than for society as a whole and that they were highest from the completion of high school, that is that they decline thereafter.⁶³ Cross-country analysis by Psacharopoulos (1985) has shown that the returns decline with per capita income, implying that they may not be so high for Iceland.

Over the past decade some evidence has emerged on the role of education in the Icelandic labour market. The general belief had been that there would be minimal correlation between education and earnings due to a strong commitment to equity,⁶⁴ the progressivity of the tax system (relevant for after-tax measures of earnings), union power and the undiversified nature of the economy.⁶⁵ Indeed, the fact that such a high proportion of university graduates are employed in the public sector⁶⁶ where market forces do not operate to determine wages serves

both to make comparisons difficult and possibly to hold down measured returns. That such returns have been low was partly confirmed by Hilmarsson (1989) in estimation of cross-sectional wage equations for 840 Icelanders in 1987 (possibly an unrepresentative year, due to a temporary income tax holiday): his estimate for the private returns per additional year of schooling lay in the range of 3 to 7 per cent, leading him to conclude that education was less important than elsewhere in determining earnings.⁶⁷ But Jonasson (1992, cited in Oskarsdottir, 1995) is said to have verified a positive relationship between attainment and labour market outcomes for the university-educated, even though Jonasson and Jonsdottir (1992, cited in Oskarsdottir, 1995) found, with a different set of data, that differences between university graduates and drop-outs are not large in the first years in the workplace. In addition, Oskarsdottir (1995) surveyed 746 Icelanders born in 1969 at age 24 and, controlling for gender, experience and hours, found that women earned significantly more for some levels of higher educational attainment, but that the effects were generally at best only marginally significant for men. Nonetheless, the estimated effects were often large: the average woman with a university degree was already earning 71 per cent more than someone with compulsory education only; her male counterpart gained 41 per cent, only slightly more than a man with vocational education certificate (35 per cent). Furthermore, it is possible that the returns to education may increase with age and experience (Murphy and Welch, 1988; Burtless, 1996). In addition, higher attainment seemed to be associated with a shorter workweek (but probably only for this age group, as overall labour force statistics show that, if anything, the workweek is positively related to educational attainment), higher occupational status and greater job satisfaction (Table 24).

In an unpublished tabulation done expressly for this chapter, the Social Science Research Institute of the University of Iceland surveyed around one thousand Icelanders employed in November 1996 and found the highest monthly wages were earned by those with vocational training working in crafts and trades. But once adjusted for a much longer average work week, it is rather those with a tertiary education who earned the most – about 36 per cent more than the average, while those with compulsory education alone earned over 23 per cent less. The ratio of the two, at 1.77 is fairly near the average of the OECD countries for which data are available and substantially higher than in the other Nordic nations (OECD, 1997, Table 28).

Table 24. **The importance of education to early labour market outcomes¹**

	Total	Post-compulsory schooling	
		Completed	Not completed
A. Number in total sample	746	432	314
Shares (per cent)	100	58	42
B. Labour force status (per cent)			
Employed	69	65	75
Unemployed	3	3	4
Student	20	28	10
Other	8	5	12
C. Mean monthly earnings of those working (thousand IKr)			
Total	106	110	103
Males	137	138	133
Females	73	71	74
D. Mean number of hours worked per week			
Total	45	44	48
Males	53	51	54
Females	39	37	41
E. Occupational status ²			
Total	38	41	33
Males	37	41	31
Females	39	42	35
F. Job satisfaction ³			
Total (per cent)	72	77	65

1. Results of a 1993 survey of 746 Icelanders born in 1969.

2. International Socio-Economic Index scores, varying from 23 to 75, for 19 occupational groups.

3. Share indicating they would choose their present job again if they were once more in the same situation as when they took this job.

Source: OECD calculations based on data presented in Oskarsdottir (1995).

Many observers assert that the labour market as it is currently structured does not accord a great deal of importance to human capital in non-pecuniary forms such as career paths, skill requirements and frequency of spells of joblessness. While educational requirements have risen as elsewhere, this is believed by some to represent at least partly an adjustment to increasing supply of human capital and higher levels of unemployment, although the widening in the income distribution over the past decade (see Table 32 in Chapter IV) would not appear to be consistent with this hypothesis (as it indicates demand for human capital is outstripping any increases in supply). Many traditional production sectors such as

fish processing do not seem to need upgraded skills (according to a 1992 report cited in Oskarsdottir, 1995, p. 145), except at the managerial level; accordingly, the share of graduates of fisheries-related vocational programmes at the upper secondary level has declined steadily over the past twenty years (Menntamálaráðuneytið, 1996). Yet unemployment rates do vary substantially by attainment levels as in other countries (see Chapter IV); indeed, the penalties to low attainment seem more than modest,⁶⁸ and they have risen in the 1990s. It is possible that the size of this differential and the fact that it has been on a widening trend may be attributable to institutional constraints on wage dispersion which are generating wage outcomes more equal than the underlying productivity distribution. Increased “credentialism” is another albeit unlikely possibility.

It is likely that relative wages would be more dispersed or that the differentials between unemployment rates would be even larger, were it not for the fact that a large proportion of the workplace has been designed to deal with low-skilled employees, as it has possibly been in other countries. Many jobs, even those occupied by the more qualified, *i.e.* secondary school graduates, do not require much in the way of learned skills: even though internationally comparable data are not available, it is noteworthy that 33 per cent of Oskarsdottir’s sample of 24 year-olds in 1993 had jobs with no reading requirements, 29 per cent had no writing requirements, 18 per cent no mathematics requirements and 65 per cent did not work with computers; furthermore, even among the sub-sample of upper secondary school graduates (55 per cent of the sample) the figures remain 28, 21, 15 and 57 per cent, respectively.⁶⁹ When asked where they learned most of what they needed to know to do their job, only 20 per cent chose formal schooling (still only 30 per cent among high-school graduates), while more than half said on-the-job training. Fully 21 per cent said school had prepared them rather or very badly for work. Employers seem to prefer personal qualities and experience as hiring criteria over formal credentials and learned skills: for example, most employers say they have all the basic skills they need, and only 2 out of 20 hiring personnel managers interviewed by Oskarsdottir said they ever look at school grades, thereby depriving secondary school students of the incentive to do more than what is needed to pass, unless they wish to pursue university studies.

Vocational and workplace education and training

The peculiar problems of vocational education

Proponents of vocational and technical education and training (VOTEC) see it as one key to a highly skilled work force and a competitive economy (OECD, 1994a). It is said to be increasingly recommended for those who learn better when the relevance of the material is clearer (so-called “contextual learning”). Three forms exist: apprenticeships, co-operative programmes and what are now called “career academies”.⁷⁰ As they apply to Iceland the first two suffer from the smallness of employers who therefore lack the time to supervise trainees and may be unable to provide the same breadth of skills. However, apprenticeship is utilised in about 40 programmes covering about 15 per cent of each cohort, with pay reaching half or more of starting wages in the sector. Apprentice pay is fixed during union wage negotiations in accordance with the apprentice’s progress through the programme, even though apprentices are not union members.

But despite the government’s declared wish to develop it,⁷¹ VOTEC has remained relatively stunted in Iceland, perhaps in part because of a reputation which is unjustifiably poor (in view of the returns evidence provided above). As in some other OECD countries, it is widely regarded by families as being the repository of those students who are incapable of academic studies and therefore there is a stigma attached to participants. Rather than receiving students straight from compulsory schooling who wish to acquire more practical, job-related skills, the more customary pattern is that young people ultimately enrolling in VOTEC programmes either have worked first or have dropped out of academic programmes at the upper secondary level. Some of the two-year programmes have especially low status. But at least VOTEC is not a dead-end course, even though the best students in VOTEC often leave it to rejoin the academic stream as soon as they have the chance. Iceland’s VOTEC has also been criticised for being too sensitive to short-term skills needs.

Perhaps the most obvious causal factor for this unsatisfactory state of affairs is the weak link between VOTEC institutions and the business world (Oskarsdottir, 1995). Even though unions are generally supportive and employers are involved in setting curricula for upper secondary VOTEC programmes, they claim to be unable to evaluate the worth of VOTEC training, in part because they suspect that the relevant teachers are not renewing their skills.⁷² It would seem

that the means must be found to establish a closer working relationship involving intensive information transfer between employers and educators. The 1996 law provides for advisory committees for the design and implementation of vocational programmes; in practice this had applied only for traditional skilled trades; elsewhere there has been little direct connection with the labour market. In these occupations students must finish their programmes by finding an apprenticeship with a master craftsman, and this often proves difficult, some allege because of monopolistic attempts to restrict entry by unions. Vocational certificates do seem to yield good returns in the labour market for young people (see above), but whether those returns persist through working lifetimes has been questioned. At which level VOTEC should be stimulated and a broader choice of programmes should be encouraged (lower secondary, upper secondary or tertiary) is also much debated; there has been a recent tendency to move programmes to the tertiary level (nurses, midwives, pre-school teachers). Some advocate imitation of the Finnish vocational high schools (polytechnics, as initially conceived in the United Kingdom). Others look to a recent Norwegian reform which stimulated VOTEC enrolment through a guarantee of employment upon programme completion, boosting employer stakes in participating in advisory committees. Nevertheless, there are some Icelandic success stories: recently, for example, a programme for training auto mechanics was set up with IKr 100 million in equipment; but in general equipment funding is scarce. In any case, even at its best, VOTEC should not be seen as a panacea nor will it solve the drop-out problem.

Workplace training

Training and experience are probably substitutes for formal education (Sloane *et al.*, 1996). Training and learning on the job are likely to suffer from the same sources of market failure as initial education. It will tend to be underprovided due to the existence of:

- real externalities (the added human capital will provide benefits to the firm's customers and to society at large through higher tax payments and greater innovation, for example; and the skills derived will be difficult to signal in the market);
- tax-induced distortions (not all costs are deductible, and the benefits will generally be taxed at higher rates due to progressive tax schedules);

- high borrowing costs and liquidity constraints (especially as government loans may not be available and employers run the risk of losing the trainee after the skills are acquired);
- and government regulations and institutional norms, especially negotiated minimum wage levels which constrain the provision of training wages and the rate of post-training wage gain (Bishop, 1995).

In general, it is not in employers' interest to invest in training unless the derived returns exceed the turnover rate plus the cost of capital. Training may, however, boost returns by improving employee morale and thereby lower turnover itself.

There is little statistical evidence regarding the nature and prevalence of workplace training in Iceland. However, it is a well-established fact that less formal training is provided the smaller the employer (OECD, 1993*a*, Table 4.10 and OECD, 1991*a*, Table 5.5), and, given the tiny firm size which is most common in Iceland, it would be surprising if much formal employer-based training is undertaken. And whatever skills are taught are likely to be rather general in nature. Nevertheless, about 36 per cent of adult Icelanders claim to have undergone some training in the last three years, possibly at their own initiative (Baldursson and Hansen, 1993, cited in Oskarsdottir, 1995), often in the evening, and, as stated above, that seems to suffice for most jobs. In many cases employers do provide some initial on-the-job training to new hires (Oskarsdottir, 1995). According to Baldursson and Hansen (1992, cited in Oskarsdottir, 1995) a little over half of the firms they surveyed in 1990 offered some kind of training to their workers. About one-quarter of all workers (but mainly managers and clerical staff) attended courses. Contract training away from the workplace is not, however, as prevalent as in the United States (through community colleges), for example: only about one firm in six had made any such arrangements.

Adults can pursue their education in part-time programmes at the upper secondary level. Some 4 000 people were registered for such courses in the autumn of 1994. The University of Iceland also offers several multi-semester courses (for example, business administration, fisheries, real estate assessment and family therapy) through its Inservice Training Institute.

A summing-up

Once again, close examination of a set of economic institutions in Iceland has revealed a system which functions reasonably well but which would profit from reform. Its principal positive feature is that it produces outcomes which are adequate in most respects at a very low cost, especially when consideration is taken of obvious diseconomies of small scale. But this chapter has argued that outcomes which have sufficed in the past are likely to prove no longer sufficient in the future, especially with regard to the human capital development needed to provide comparable productivity and real incomes with citizens in other OECD Member countries in an increasingly skill-based world. Specifically, Iceland would be well advised to boost its educational inputs: by increasing the number of school-days at least as rapidly as currently planned, especially at the compulsory level and, above all, in subjects which should prove most useful in career preparation; by making more resources available for counselling, guidance and remedial teaching; and by raising capital spending, particularly for vocational programmes, still regarded as a backwater, and at the university level where overcrowding seems most problematic. Financing of this latter change could be provided by increases in student fees, given their low level and the largely private nature of the returns to post-compulsory education. Concerns over access could be dealt with by expanding the Student Loan Fund whose lending should be purged of its subsidy basis. Such a package could also provide the incentives to students to choosing courses with good prospects for healthy returns on their investments and to finish their studies in good time. With a more qualified pool of labour, it is to be hoped that employers would then re-examine their workplaces in order to ensure that they are producing goods and services in the most productive way possible.

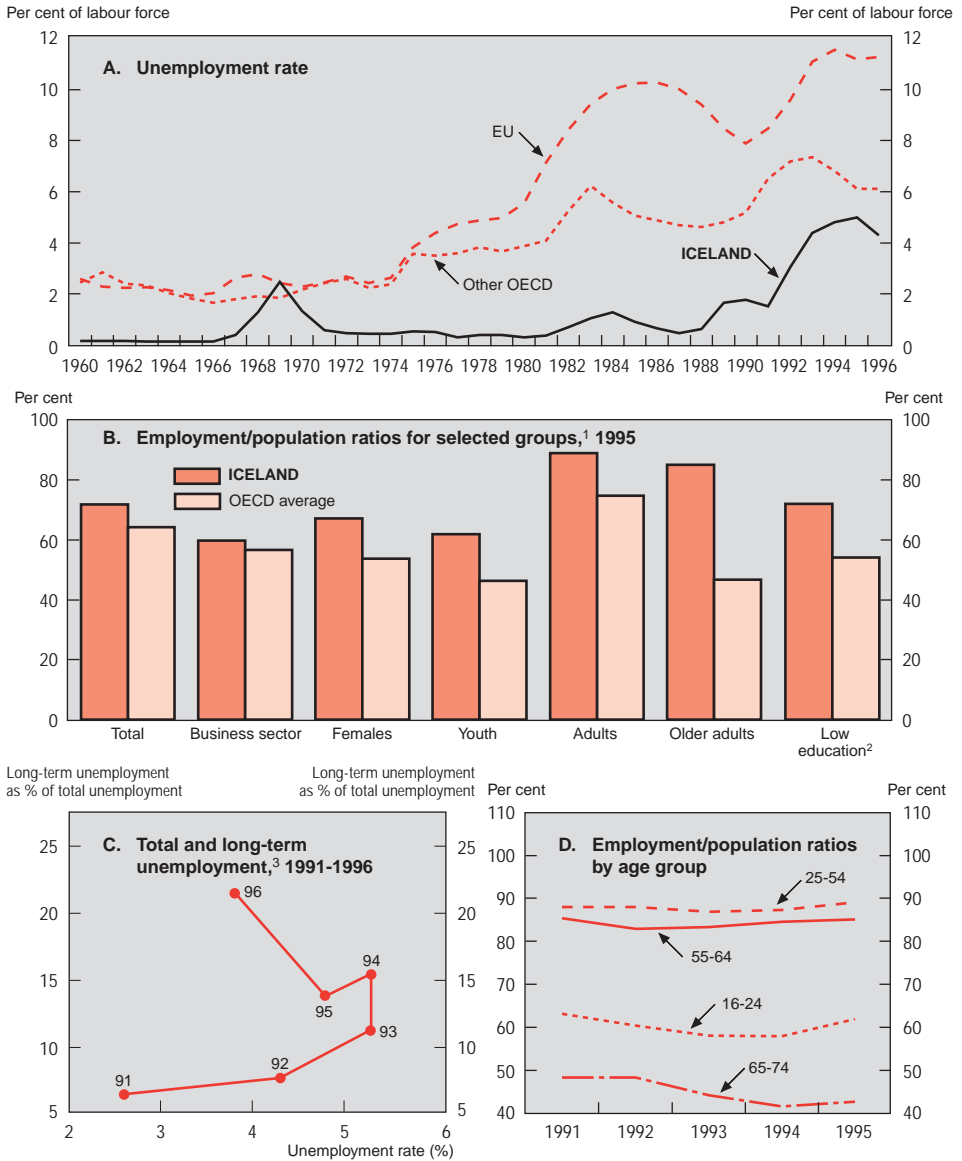
IV. Implementing the OECD's Jobs Strategy

Introduction

The Icelandic economy has operated at very high levels of labour utilisation for most of the nation's history as a republic. Indeed, it has the highest labour force participation rate and one of the lowest unemployment rates in the OECD (Figure 22). Recently, the unemployment rate has been much higher than earlier, reflecting both temporary conditions and structural changes; but Iceland has in no way suffered the severe deterioration of labour market outcomes that has occurred in continental Europe over the past two decades.

Iceland has also enjoyed a fairly high level of per capita income. In part this is due to the highest level of work effort in the OECD, resulting from the elevated levels of employment relative to population and the long average work week. This means that labour productivity is not as high as is implied by per capita income measures. This chapter follows up the OECD Jobs Study in an Icelandic context. First, key characteristics and developments of the labour market are described. Next, important features of the policy and institutional environment are examined with respect to their effects on the ability of labour markets to adjust and adapt in order to increase the efficiency of the economy and its capacity to grow. Finally, recent policy initiatives are presented, and the scope for further action is assessed (Box 2).

Figure 22. KEY FEATURES OF THE LABOUR MARKET



1. Defined as the percentage of each working-age population group.
 2. Completed less than upper secondary education, 1992.
 3. Long-term unemployment is defined as individuals looking for work for one year or more.
 Source: Labour Market Statistics and OECD.

Box 2. The OECD Jobs Strategy: synopsis of recommendations for Iceland

The OECD Jobs Study sets out a strategy based on nine recommendations for improving the ability of OECD economies to cope with structural change, through enhancing the ability to adjust and adapt, and increasing the capacity to innovate. The nine distinct policy areas covered included: the macroeconomic policy framework, creation and diffusion of technology, the entrepreneurial climate, working-time flexibility, wage and labour cost flexibility, employment security, active labour market policies, labour force skills and competences, unemployment and related benefit systems.

With respect to the Iceland, policy settings appear to be generally effective at creating a dynamic and flexible economy. Over the past decade, macroeconomic policy settings have ensured the creation of a low-inflation environment. Structural policies have generally been sound, resulting in a labour market with very high employment rates. But the average workweek is very long, implying low average productivity levels. Recent years have witnessed reforms to boost product market competition, particularly with regard to trade and investment policy. This chapter has identified several areas where further policy adjustments should be made.

Continue to reform the unemployment benefit system

- Benefit eligibility should be tightened to encourage greater job search efforts by the unemployed.
- Time limits should be reduced to prevent the development of dependency.
- Replacement rates should be lowered to prevent competition with low-skill jobs and be made more uniform across skill groups.
- The public employment service should be enhanced to provide better job placement service, and benefit management should be integrated into public employment service.
- Experience rating could be introduced to reduce implicit subsidies to sectors with chronically high unemployment rates.

Improve education system

- The school year should be further lengthened with added hours focused on foreign languages, natural sciences and mathematics.
- Performance incentives should be sharpened by boosting information available on schooling outcomes.
- Graduation rates from upper secondary schools should be raised to that of other countries by increasing access to loans, improving counselling and increasing remedial teaching.

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(continued)

- The time taken to complete post-compulsory schooling should be shortened. Lengthening the school year would contribute to this. More rapid completion would also be stimulated by increasing fees along with enhanced student loan availability.
- Vocational education needs to be improved through greater funding, closer relationships between educators and employers and a more forceful attempt to burnish its image.

Boost product market competition

- Further reform would be welcome, especially in agriculture and the financial sector. The government should resume its privatisation programme.

Enhance working-time flexibility

- The social partners should be encouraged to examine the extraordinary wage premiums paid for work outside standard daytime hours. This could take place in the context of the negotiations following the adoption of the EU working time directive. The government should take the lead in this regard when negotiating with its own employees.

Decentralise industrial relations system

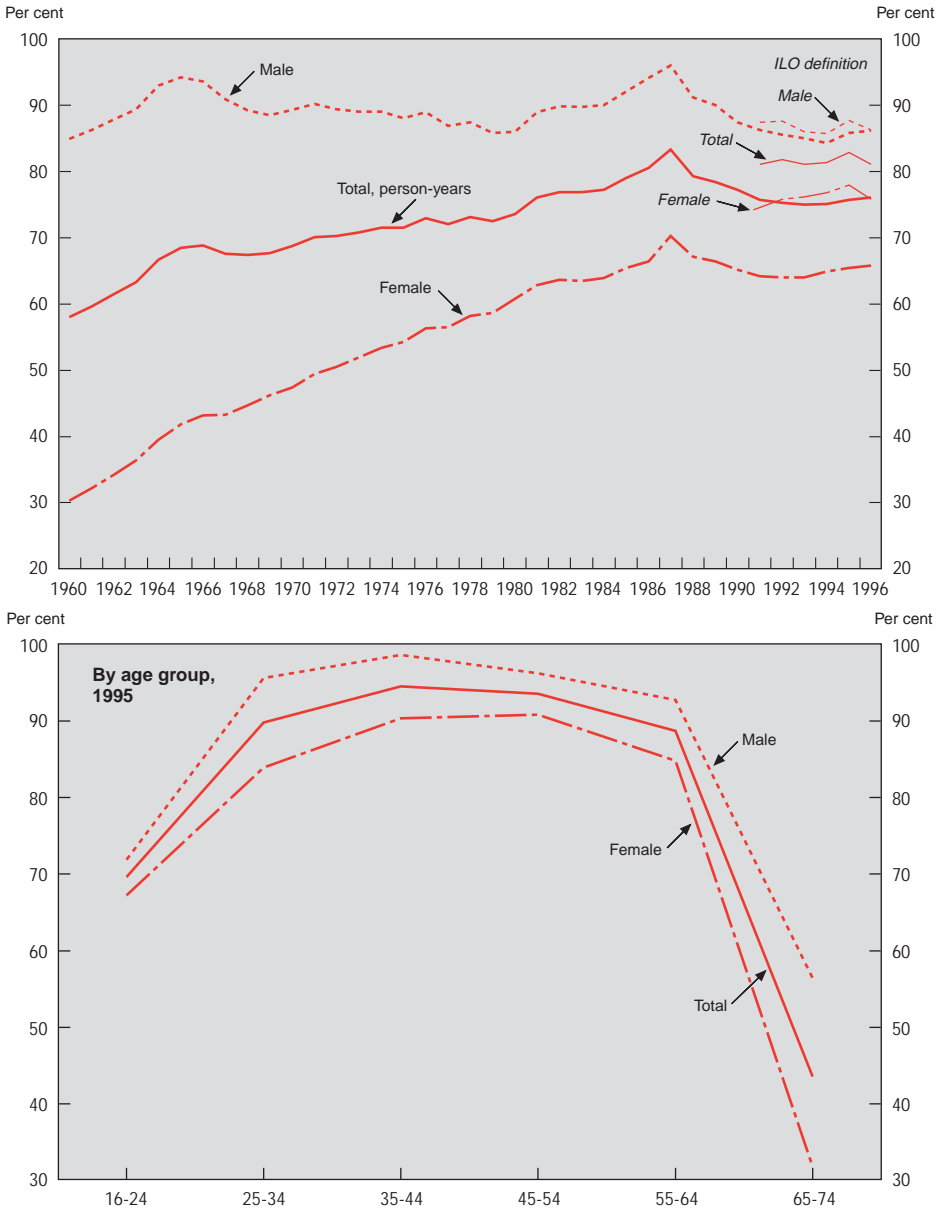
- Employers and unions should also be encouraged to move away from the two-stage wage bargaining process which is long and drawn out; it may also generate an upward bias to wage outcomes.

Labour market and employment performance

Labour supply

Labour force participation rates are the highest in the OECD, reflecting the exceptionally high rates for women and older persons (Figure 23). The overall participation rate grew rapidly until 1987 (a special year due to a temporary tax holiday), owing to sharp increases among women. While the working-age population grew 15 per cent over the ten years ending 1988, the labour force grew by over 26 per cent. In recent years, the overall rate has been roughly constant, as further gains by women have been offset by declines among men. The rate for

Figure 23. **LABOUR FORCE PARTICIPATION RATES**



Source: National Economic Institute and *Labour Market Statistics*.

women probably has little upward momentum, as rates have approached those of men, except in the case of women with young children. The difference in participation rates between men and women is narrower only in Sweden among OECD countries. The rates for Icelandic women with no children or children over the age of six are relatively close to those of men, but those with young children have much lower participation rates than those without.

While labour force participation by those in the 65 to 74 age group has declined noticeably, it is still exceptionally high. Interestingly, the participation rate of those in the 55 to 64 age group has actually risen in recent years, in stark contrast to developments in most other OECD countries, especially in Europe. Youth frequently combine work with school: about half of 16 to 24 year-old students are in the labour force, typically in part-time employment (Table 25). Labour force participation rates are similar for the capital region, towns and other municipalities, but do vary by educational attainment, with 96 per cent of those with tertiary education (13 per cent of the total) in the labour force compared with 75 per cent of those with only compulsory primary and lower secondary education (40 per cent of the labour force).⁷³

The levelling off of participation rates in recent years may also reflect the more difficult job climate. Labour force participation rates in the 1970s and 1980s rose and fell with employment demand, and, thus, there was little change in the unemployment rate. This was also the case during the recent period of stagnant employment, although participation has not been as pro-cyclical as previously. Regression analysis shows that labour force participation by both males and females has been related to the unemployment rate.⁷⁴ Based on the results of such estimation, the rise in the registered unemployment rate from 1 per cent in 1990 to 5 per cent in 1995 may have depressed the participation rate by some 4 percentage points. But this result may be confounding cyclical with other emerging secular trends, such as a cresting of female participation rates and, thus, may overstate the effects of the rise in unemployment.

Immigration and emigration have often been cited as important factors in balancing labour supply and labour demand. Data over the past thirty years show a small and positive correlation between changes in labour demand and the level of net immigration in the following year (Figure 24).⁷⁵ Consistent with this, there has been a net outflow during the 1990s, but the peak year was in 1995 after the economy began to grow again.

Table 25. **Labour force participation rates, 1995**

Per cent

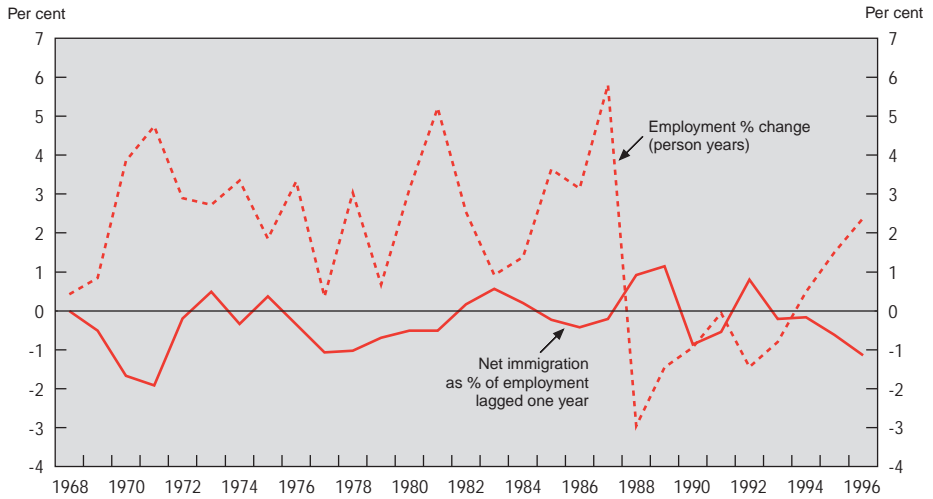
	Total	Male	Female	Share of labour force
Age				
16-74	82.9	87.7	77.9	
16-64	84.7	88.8	80.2	
16-24	69.6	71.9	67.2	
25-34	89.8	95.6	83.9	
35-44	94.5	98.6	90.3	
45-54	93.5	96.2	90.8	
55-64	88.7	92.7	84.8	
65-74	43.6	56.4	31.8	
Educational attainment				
Compulsory	74.6	78.6	72.0	40
Upper secondary	85.4	89.0	79.6	47
Tertiary	96.1	97.7	93.7	13
Region of residence				
Capital region	82.1	86.6	77.8	60
Towns	83.6	89.2	77.1	26
Other	84.9	89.6	79.8	15
Family status: ages 25-64				
Never married	90.4	91.6	88.9	
Married and cohabitating	92.5	97.2	87.6	
Previously married	88.1	93.7	86.0	
No children			92.1	
Youngest child 0-6 years			81.8	
Youngest child 7-15 years			91.9	
Students				
Age				
16-19	49.1	45.1	53.1	
20-24	49.1	49.3	48.9	
25-29	54.6	62.6	46.7	
30 and over	66.0	69.7	64.2	

Source: *Labour Market Statistics, 1995.*

Evolution of employment

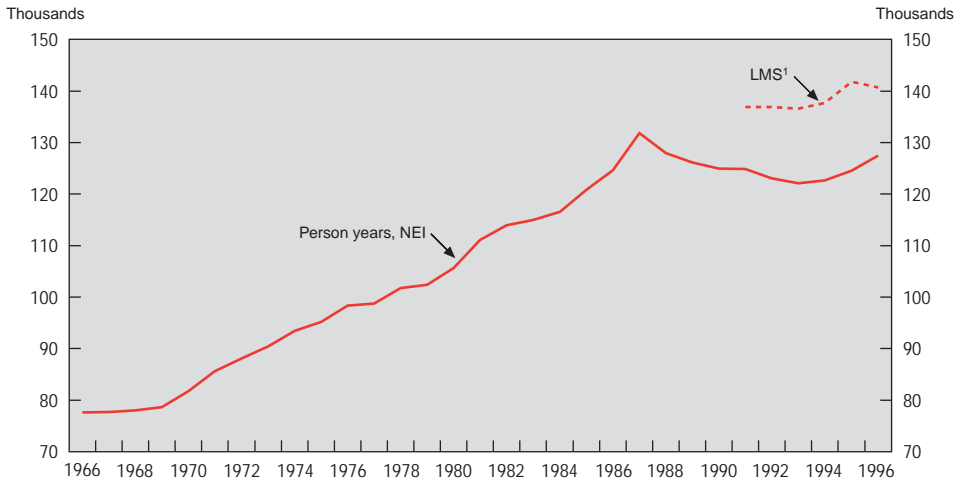
Until the late 1980s employment virtually matched the labour force. From 1988 to 1994 employment growth stalled as the economy worked its way through various shocks – the transition from high to low inflation, budget restraint, agricultural reform and the decline in the cod stocks (Figure 25). But employment growth revived in 1995 and 1996 as the economic recovery gained momentum.

Figure 24. **LABOUR DEMAND AND IMMIGRATION**



Source: National Economic Institute and *Labour Market Statistics*.

Figure 25. **EMPLOYMENT**



1. ILO definition.

Source: National Economic Institute and *Labour Market Statistics*.

Table 26. **Employment by industry¹**

Share of total

	1963	1970	1980	1990	1995
Agriculture	12.5	11.4	7.2	4.9	3.7
Fishing	6.1	6.1	4.8	5.0	5.1
Manufacturing	23.5	21.2	22.1	16.7	14.8
Fish processing	9.0	7.2	8.3	5.4	5.2
Other	14.5	14.0	13.9	11.3	9.5
Electricity and water supply	0.4	0.6	0.8	0.9	0.9
Construction	9.9	9.8	9.3	8.1	7.0
Wholesale and retail trade	11.0	10.9	10.5	10.5	10.8
Hotels and restaurants	1.6	1.6	1.7	2.2	2.4
Transportation and communication	8.9	7.8	6.6	6.2	5.9
Finance, insurance and business services	2.5	3.7	5.0	7.3	7.7
Other private services	7.4	7.7	8.8	11.0	12.4
Public services	8.8	11.4	14.3	16.3	17.0

1. Based on full-time equivalents.

Source: *Thjodhagsreikningar: 1945-1992*, National Economic Institute.

The share of employment in fishing and fish processing has declined over the years, with the decline concentrated in the fish processing industry, reflecting smaller catches, the shift to on-board processing, and increased mechanisation (Table 26). The latter has also been a major source of the reduction in manufacturing employment. No major manufacturing sector registered growth in employment over the 1986-93 period. In addition, declines in output have affected certain manufacturing sectors such as textiles and apparel and fabricated metals which have posted very sizeable job cuts since 1985. As in all OECD countries, employment has shifted from the primary sector and manufacturing to services, especially public services. Among occupations, professional and other skilled jobs have been rising in importance over the past five years, while employment in agriculture and demand for unskilled workers and clerks has fallen.⁷⁶

Part-time and multiple job-holding is common. Part-time work is particularly common among women, youth and older workers because the shorter and more flexible schedules meet the needs of students and those with child-care responsibilities and assist in the transition to retirement (Table 27). About half of all employed women have part-time jobs, a high share compared with other OECD countries.⁷⁷ Part-time work is particularly prevalent in fish-processing,

Table 27. **Part-time and multiple job holding, 1995**

Per cent of total employed

	All ages			16 to 24 years		
	Total	Males	Females	Total	Males	Females
Full-time worker	71.6	88.5	52.4	58.5	70.4	45.7
1 job	63.9	79.4	46.2	53.3	65.0	40.9
2 or more jobs	7.8	9.1	6.2	5.2	5.4	4.9
Part-time worker	28.4	11.5	47.6	41.5	29.6	54.3
1 job	23.6	9.2	40.1	36.8	25.8	48.5
2 or more jobs	4.7	2.3	7.4	4.7	3.8	5.7

Source: *Labour Market Statistics, 1995.*

banking and the public sector. About 12 per cent of the employed hold two or more jobs, with a full-time job combined with a part-time job the most common arrangement. Multiple job holding increases sharply with educational attainment – while 10 per cent of those who have completed only compulsory education hold two or more jobs, this rate rises to 20 per cent for those with university education.

Self employment had declined as a share of employment over time until five years ago, largely reflecting the fall in agricultural employment. It has since levelled off at around 17 per cent. Agriculture is still the most common industry for self-employed workers, accounting for one-third of the total, while fishing's share is unimportant. Construction, transportation, and real estate are other significant areas of work for the self-employed, as well as being areas where employment has been rising.

Unemployment has emerged

Unemployment was virtually non-existent in Iceland until the 1990s; registered unemployment averaged only $\frac{1}{2}$ per cent of the labour force in the 1960s and 1970s, rising to just $\frac{3}{4}$ per cent in the 1980s. In the 1990s the registered unemployment rate has averaged $3\frac{1}{2}$ per cent, peaking at 5 per cent in 1995 before declining in 1996. A portion of the rise reflects cyclical conditions and the temporary effects from re-orienting production away from low value added activities and the decline in fish stocks. But some also reflects changes of regime:

the desire to operate at a slightly lower level of resource utilisation and move to lower levels of inflation, and the willingness of workers to suffer bouts of unemployment. Importantly, although Iceland has suffered from a deterioration of labour market outcomes, the scale of its problems is dwarfed by those in continental Europe.

Since 1991 labour force surveys using International Labour Office (ILO) definitions have provided additional information about unemployment. The labour force surveys recorded distinctly higher unemployment rates than the registration data until 1996, reflecting a large number of individuals looking for work who were not registered as unemployed (Table 28), perhaps because they did not meet the qualifications for benefits such as being new entrants to the labour force. In 1996, the survey recorded a lower unemployment rate because many of the registered unemployed were categorised as employed by the ILO definition, including workers who can collect partial benefits because of shorter than normal hours.⁷⁸

The distribution of unemployment across various demographic groups is similar to that found in other OECD countries. Male and female unemployment rates are nearly equal, the youth unemployment rate is two to three times the adult rate, the rate for older workers is somewhat lower than average, and the

Table 28. **Reconciling unemployment definitions**
Number of unemployed

	1991	1992	1993	1994	1995	1996 ¹
Labour Market Statistics	3 600	6 200	7 600	7 700	7 200	5 500
Registered ²	1 300	3 000	4 600	4 700	4 500	3 700
Other ³	2 300	3 200	3 000	3 100	2 700	1 900
Registered ⁴	2 200	3 700	5 300	5 800	5 100	6 500
Labour Market Statistics ²	1 300	3 000	4 600	4 700	4 500	3 700
Other ⁵	800	700	800	1 100	600	2 800
Difference	1 400	2 500	2 300	1 900	2 100	-1 000

1. April survey.

2. Those determined to be unemployed by ILO criteria and who are registered unemployed.

3. Includes those looking for work who are ineligible for benefits or eligible but not registered.

4. Average for April and November, the two survey months.

5. Includes those not in labour force and those working as well as some who work while registered as unemployed.

Source: *Labour Market Statistics*, various years.

unemployment rate declines sharply with increased education, especially for males (Table 29).⁷⁹ The unemployment rate is similar across regions, probably reflecting the effects of a mobile population equilibrating labour market outcomes.⁸⁰ Work by Gudmundsson and Zoega (1996) indicate that internal migration has been consistently towards the capital area with annual rates of net migration of about 1 per cent of the population from most areas of Iceland to the capital area, and relatively higher rates of out-migration from areas with higher than average unemployment rates.

Table 29. **Unemployment rates, 1995**
Per cent

	Total	Male	Female
Age			
16-74	4.9	4.8	4.9
16-64	4.9	5.0	4.9
16-24	11.0	13.1	8.6
25-34	3.9	2.6	5.5
35-44	3.6	3.1	4.3
45-54	3.4	3.8	2.9
55-64	4.1	4.1	4.0
65-74	2.3	2.6	1.8
Educational attainment			
Compulsory	7.7	8.8	6.8
Upper secondary	3.6	3.3	4.1
Tertiary	0.7	0.8	0.5
Occupation			
Managers and specialists	1.0	0.7	1.5
Associate professionals, clerks, trade and services	3.3	3.1	3.4
Farmers, fishermen and craftworkers	4.4	4.6	3.4
Machine operators and elementary occupations	7.3	7.7	6.6
Region of residence			
Capital region	5.1	5.2	5.1
Towns	4.9	4.6	5.2
Other	3.8	3.8	3.8
Family status: ages 25-64			
Never married	5.8	7.0	4.4
Married and cohabitating	3.0	2.1	4.0
Previously married	8.1	10.5	6.6
No children			2.9
Youngest child 0-6 years			6.1
Youngest child 7-15 years			3.8

Source: *Labour Market Statistics, 1995.*

Table 30. **Unemployed by length of job search**

Per cent of labour force

	1991	1992	1993	1994	1995	1996 ¹
Total	2.6	4.3	5.3	5.3	4.8	3.8
Less than 6 months	1.9	3.1	2.9	3.3	2.8	2.3
6 to 11 months	0.1	0.3	0.9	0.8	0.7	0.4
12 months or more	0.1	0.3	0.5	0.8	0.7	0.8
<i>Memorandum:</i>						
Mean duration, months ²	4.0	4.0	6.0	7.0	7.0	10.0
Median duration, months ²	1.6	1.8	3.8	3.7	3.4	3.9
Long-term unemployed as a share of unemployed ³						
6 months or longer	12.9	15.4	32.3	32.4	32.3	33.3
12 months or longer	6.5	7.7	11.3	15.5	16.1	21.6

Note: Parts do not sum to total due to exclusion of those with unknown durations.

1. April survey.

2. OECD estimate assuming individuals are distributed evenly within time brackets.

3. Excludes those with unknown duration.

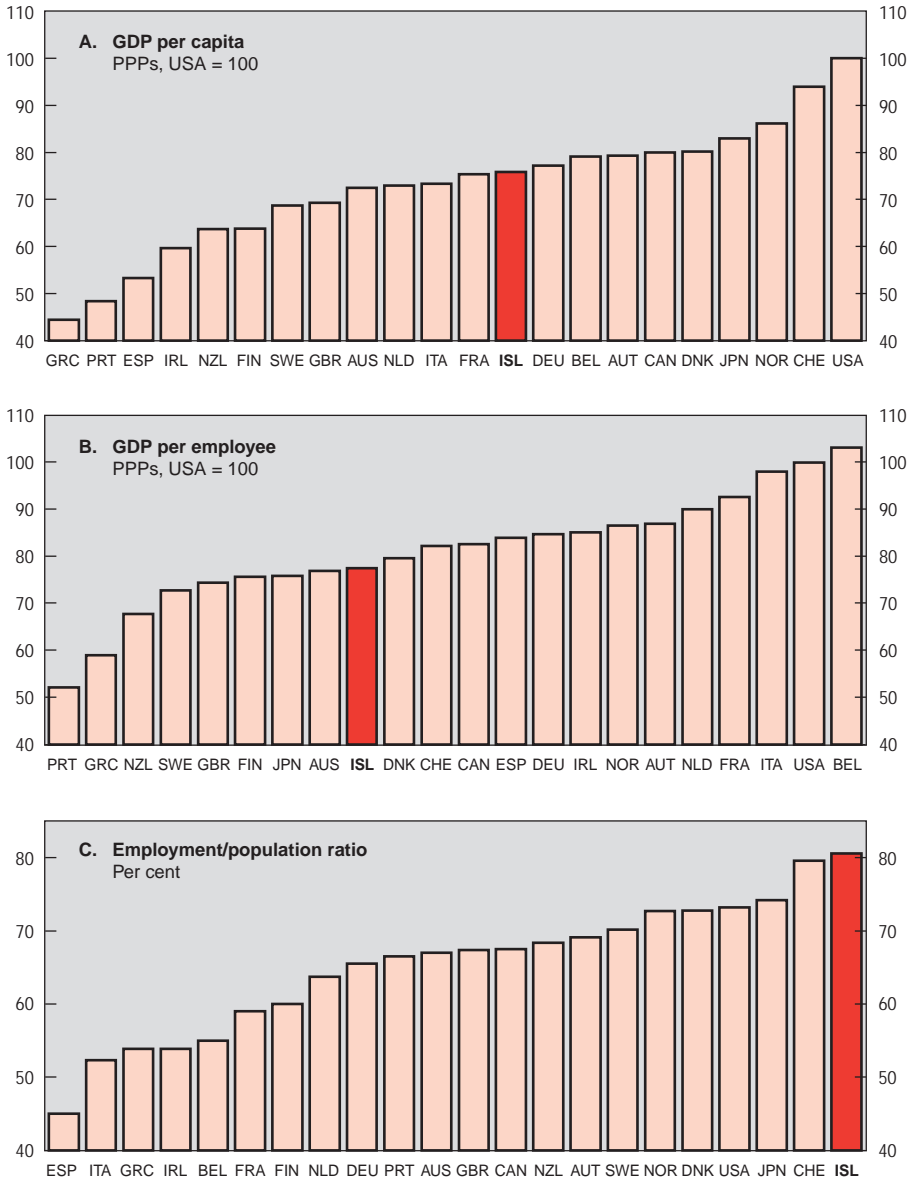
Source: *Labour Market Statistics*, various years.

As the unemployment rate has mounted, so has the average time spent looking for work (Table 30). Indeed, long-term unemployment, those searching for work for over one year, was non-existent when the unemployment rate was low, but it has now moved up to approximately 1 per cent of the labour force. Even at this level, it is one of the lowest rates in the OECD (only Japan, Luxembourg, Mexico and the United States were lower in 1995). That said, job search appears to take time: the median spell of unemployment in 1995 was about four months (compared with two months in the United States).

Productivity and income

Iceland's relatively high per capita income appears to indicate that its reasonably well educated labour force, abundant natural resources, and capital stock have been employed efficiently (Figure 26). But, after accounting for the much higher employment to population ratio, Iceland's performance relative to other European countries slips. While Iceland's per capita GDP (in PPP terms) is about 8 per cent above the European Union average, its GDP per worker is 13 per cent below average. In addition, real per capita income growth has failed to keep up with the OECD average over the past decade, reflecting the difficulties in the

Figure 26. **RELATIVE PRODUCTIVITY LEVELS, 1994**



Source: OECD.

fisheries sector, the stagnation of employment and reduced levels of investment.⁸¹ Despite the fall-off in investment, labour productivity growth has actually picked up over the past decade (Table 31), perhaps reflecting efficiency gains from restructuring. Until very recently, real wages and incomes did not reflect these improvements (Chapter I, Figure 8).

At the same time, gauging from tax return data, the distribution of earned income has become somewhat less equal (Table 32). For recent years, this probably reflects a less equal distribution of hours of work (owing to the rise in unemployment) because the dispersion of hourly earnings has narrowed. Indeed, the ratio of hourly earnings of male private-sector workers at the ninetieth percentile to those of the tenth percentile is about 2.4. By contrast, the ratio of annual earnings among all tax filers (aged 25 to 65) at the ninetieth percentile to those of the tenth percentile is nearly 9.⁸² Compared with calculations in a recent OECD study (OECD, 1996c), the hourly earnings ratio is about the same as is found in other Nordic countries studied (Finland and Sweden) and substantially lower than that found in the United States and Canada. The distribution of income after taxes and transfers is much more equal than that of earned income, because both taxes and transfers assist in redistributing income towards groups with relatively low earnings.

Table 31. **Labour productivity growth**
Annual per cent change

	1973-80	1980-86	1986-93	1973-93
Agriculture	1.2	2.7	1.9	1.9
Fishing	8.3	-1.3	1.0	2.9
Manufacturing	2.5	-0.2	2.8	1.8
Fish processing	3.3	-1.8	4.2	2.1
Other	2.0	0.7	2.2	1.7
Electricity and water supply	-4.5	5.3	-0.1	0.0
Construction	-0.4	-0.3	1.6	0.3
Wholesale, retail trade, hotels and restaurants	0.7	-0.8	1.5	0.5
Transportation and communication	3.4	4.0	2.2	3.2
Finance, insurance and business services	1.3	-1.9	-0.7	-0.4
Other private services	1.2	3.7	-0.1	1.5
Total industry	2.3	0.8	1.3	1.5
Public services	0.6	1.8	1.6	1.3
Private non-profit	-0.4	-0.1	-1.9	-0.9

Source: OECD calculations based on gross factor income and employment data on a full-time equivalent basis from *Thjodhagsreikningar: 1945-1992* and *Atvinnuvegaskýrsla: 1993*.

Table 32. Measures of the distribution of income

	Distribution of earned income			Distribution of income components for couples, all ages, 1995 ¹					
	All earners		Couples aged 25-65	Taxable income				Net tax payments	Disposable income
	1986	1995	1995	Total	Labour	Social security and pension	Other		
Decile									
1	1.1	0.8	3.2	3.5	1.9	26.2	0.6	-1.7	4.8
2	2.9	2.4	5.6	5.1	3.5	27.7	1.3	-0.8	6.5
3	4.5	4.1	6.9	6.2	5.7	15.0	3.9	1.2	7.5
4	6.1	5.6	8.0	7.4	7.4	8.3	6.5	3.6	8.3
5	7.7	7.1	8.9	8.5	8.8	6.0	6.5	6.2	9.0
6	9.4	8.9	9.9	9.6	10.2	4.4	7.4	8.9	9.8
7	11.3	10.9	11.1	10.9	11.7	3.3	9.5	11.8	10.7
8	13.7	13.6	12.4	12.5	13.5	3.0	10.0	15.0	11.9
9	17.2	17.6	14.3	14.7	15.9	2.7	12.3	19.8	13.5
10	26.1	29.0	19.7	21.5	21.4	3.3	42.2	36.1	18.0
Average level, IKr 1 000	490.0	1 272.0	3 140.0	2 867.0	2 465.0	207.0	195.0	558.0	2 309.0
Gini coefficient ¹	0.396	0.433	0.254	0.248	0.288	n.a.	0.447	n.a.	0.180

1. The Gini coefficients for "Couples, all ages, 1995" are calculated using the decile information only. They may be 10 per cent smaller than calculating using more detailed data: similar calculations for the first three Ginis yield values of 0.354, 0.387 and 0.224 (versus 0.396, 0.433 and 0.254).

Source: National Economic Institute.

Policy requirements

Enhancing the ability to adjust and adapt

The wage formation system

The wage formation system in Iceland combines centralised and decentralised features. Approximately 85 per cent of Icelandic employees participate in unions, with relatively high rates across all industries and occupations.⁸³ Unions, which number over 300, are usually organised by trade and municipality rather than by firm or industry. These individual unions are organised into national federations. The Icelandic Federation of Labour (ASI), with about 60 per cent of all union members is composed of nine of these national federations as well as some unions that are directly affiliated with it. There are other large federations such as the Federation of State and Municipal Employees and a small share of the work force is organised in independent unions. Each individual union of the ASI can grant authority to the ASI for centralised bargaining, and agreements are voted on in individual unions. More importantly, national wage agreements negotiated by the federations often set increases for minimum wage rates, allowing other wages to be negotiated at lower levels. Union representatives have been calling for further decentralisation in recent years.

The employers have two separate confederations whose members account for perhaps 40 per cent of wages and salaries earned. They have preferred centralised negotiations in recent years. The government has often played an important role bringing the negotiations to a close by offering changes in spending and tax policies. In addition, some transfers are keyed off negotiated minimum wages (there is no legal minimum). In effect, this gives the social partners added weight in these decisions. For example, government expenditure overruns in both 1994 and 1995 were in part due to additional spending that was authorised to conclude wage agreements.⁸⁴ How much this affects overall budget targets depends upon whether the government makes implicit provisions for these changes in advance or offsets them in subsequent decisions.

The outcome of these institutional arrangements has been a labour market that has experienced relatively low unemployment and narrow wage dispersion. Wage movements across geographical regions diverge for only short periods of time, suggesting that the labour market is national in scope (Gudmundsson and

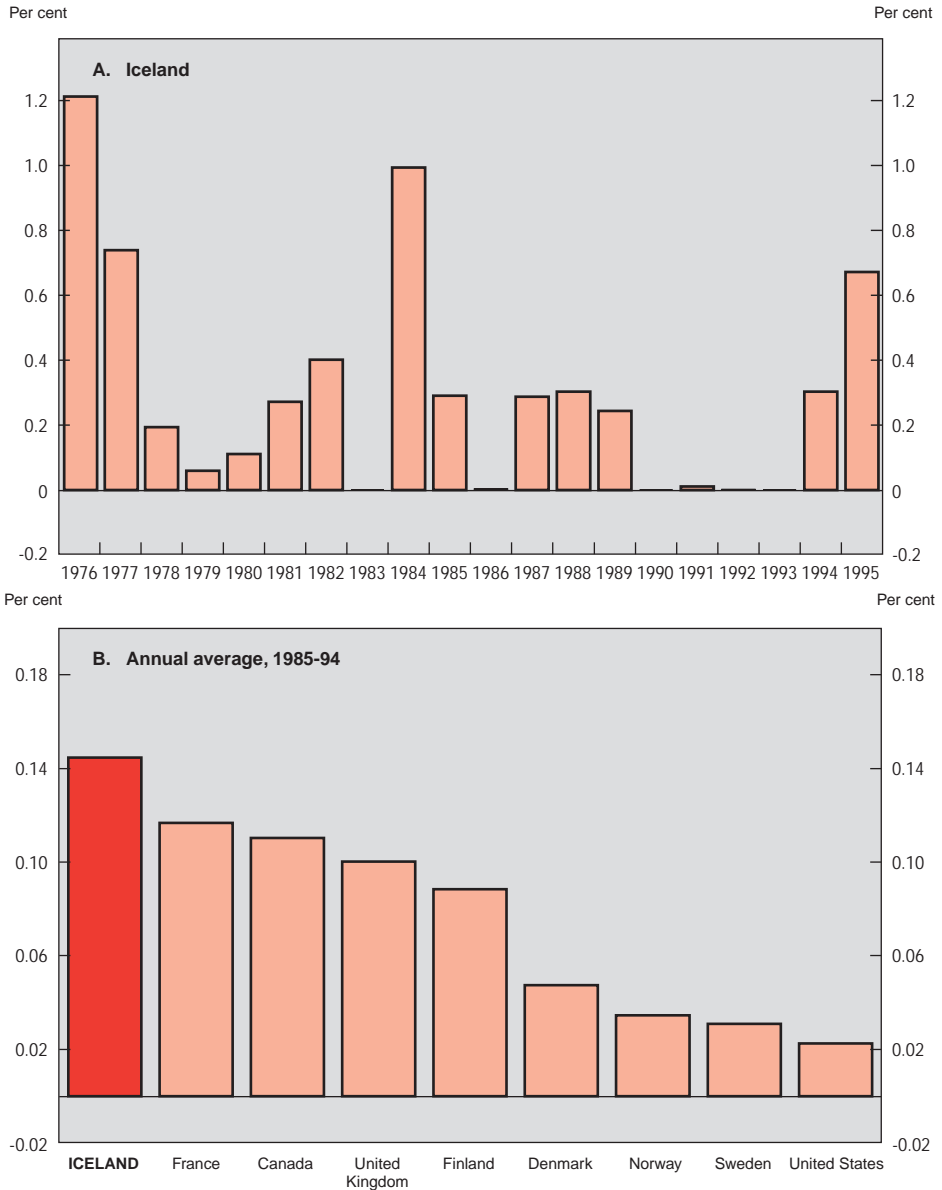
Zoega, 1996). Negotiated minimum wages (excluding overtime) are about 50 per cent of earnings of an average production worker. Aggregate real wages show significant temporal variation, suggesting considerable flexibility.⁸⁵ The ultimately decentralised nature of wage bargaining does not appear to yield much flexibility at the enterprise level, given the narrow range for wages and the relatively high level of work stoppages (Figure 27). During the 1980s when the unemployment rate was low, Iceland suffered from a relatively high number of days lost due to strikes, but in the early 1990s work stoppages became rarer. Despite record unemployment, work stoppages mounted in 1994 and 1995 as well as real wage demands, suggesting greater tolerance for unemployment, as workers appeared unwilling to trade lower wages for greater job security.

Increasing the flexibility of employment and working time

Iceland has few regulations on employment or working time; the governing provisions are found in labour contracts. There are no provisions on fixed-term contracts or part-time employment. Legal notice requirements are minimal: 1 month notice for those with one year of employment, rising to 3 months after 5 years (and longer for older employees who have been employed at the same firm for over 10 years). Overtime is legally defined as work over 40 hours per week, and many union contracts include time-of-day provisions such as 8 am to 4 pm daytime period on weekdays. The overtime pay rate, as set by collective bargaining, is 180 per cent of daytime wages. This arrangement is unique in the OECD; typically overtime is based on work beyond the contractual weekly period of 37 to 40 hours and the pay premium is smaller, often 25 or 50 per cent (OECD, 1994c).

As a result, workers have strong incentives to work overtime, and Iceland has the longest working hours in the OECD; 43 hours per week, 50 hours for those with full-time jobs and 24 for those with part-time employment (including paid breaks which total about 3 hours per week, but excluding paid holidays and vacations). Males with full-time employment worked more hours than females: 53 *versus* 44. Strictly comparable data across countries are difficult to obtain. That said, similar figures for the United States, another country with a long work week, indicate an average of 39 hours for those at work (*i.e.* again excluding paid vacations, holidays and sick time) and 43 hours for persons who usually work full time. Eurostat collects data on the typical work week which are comparable

Figure 27. **WORKING DAYS LOST DUE TO STRIKES**
Working days lost as a per cent of total working days



Source : National Economic Institute and OECD.

to the Icelandic data and are presented in Table 33. The average normal work week in the European Union is 37 hours, with 40 hours for full-time workers and 20 hours for part-time workers.

The combination of a long work week and a large premium for overtime work means that a significant portion of the pay package is in overtime pay, even in the public sector. For example, overtime pay accounted for 27 per cent of total pay for state employees in 1995, 36 per cent of total pay for workers of the Alliance of Graduate Civil Servants and 31 per cent for members of the Teachers' Association.

Employers supported this arrangement because the high premium pay insured access to labour when labour markets were particularly tight. Now with some slack in labour markets, the current arrangements may provide a barrier to efficient labour utilisation in several ways. Evening and weekend shifts, which boost capital utilisation rates, may be prohibitively expensive. Workers may be resistant to changes in production processes that boost efficiency and reduce the

Table 33. **Working time in OECD countries**

Per week	
	Usual hours of work for full-time employees
Austria	39.6
Belgium	38.4
Denmark	38.9
Finland	38.6
France	39.9
Germany	39.7
Greece	40.3
Iceland	50.2¹
Ireland	40.2
Italy	38.4
Luxemburg	39.5
Netherlands	39.5
Portugal	41.2
Sweden	40.0
Spain	40.7
United Kingdom	43.9
United States	43.0 ¹

1. Actual hours.
Source: EU, Eurostat; Iceland, *Labour Market Statistics*; US, Bureau of Labor Statistics.

need for overtime. The high premiums for work outside of daytime hours discourage hiring the lesser skilled during these time periods. In contrast, in the United States and in Germany, where such premia generally do not exist, lesser skilled individuals work during these less desired hours, providing an important entry point into the labour market (Hamermesh, 1995).

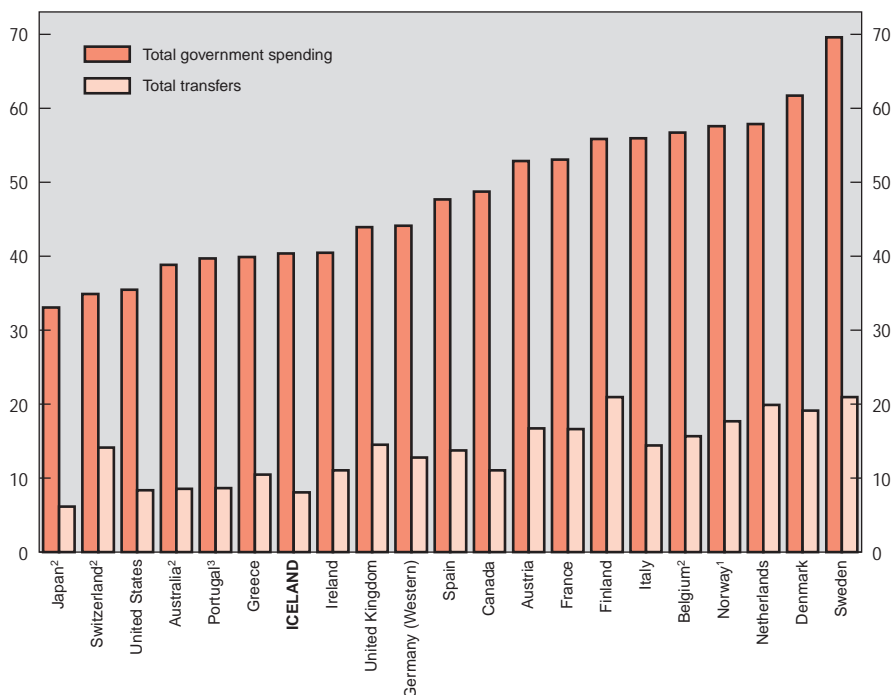
The social partners have made two agreements adopting the EU working time directive, one covering the private sector and one covering the public sector. In addition, Icelandic law specifies 15 public holidays, a minimum vacation period of 24 days, maternity leave and some paid sick leave. Individual union contracts may augment these benefits.

Taxes and transfers

The extremely high labour force participation rates in Iceland show that the tax/benefit system in Iceland has not had a substantial dampening effect on incentives to work. In part, this reflects the relatively low level of taxation due to low levels of spending and transfer payments in Iceland compared to other countries (Figure 28).

Nevertheless, the personal income tax system has been criticised for the high effective marginal tax rates, and a major reform has just been proposed. The tax schedule has a substantial personal tax credit, about equal to annual earnings at the minimum wage (IKr 60 000 or about \$900 per month). There are two tax brackets, a standard rate of 42 per cent (up from 35 per cent in 1988) and an additional 5 percentage points on high incomes. In addition, during the phase-out range for child benefits, the marginal tax rate is boosted by 6 percentage points for the first child, 5 for the second and 4 for the third. The phase-out of housing benefits boosts marginal tax rates by a further 6 percentage points for the interest subsidy or 24 percentage points for the rent allowance. All told, effective marginal tax rates on a couple with children may be 60 to 70 per cent. Despite these high rates, those most likely to be affected, women with school-age children, are as likely to be in the labour force as those without children (Table 25). Another measure of the effects of the income tax system is the change in employment in 1987 when income was temporarily free of tax. Employment rose by 6 per cent in 1987 and then fell 3 per cent in 1988. But real wages jumped sharply and while it is difficult to disentangle the relative supply and demand effects, it is likely that only a portion of the additional supply was induced by the tax holiday.

Figure 28. **GOVERNMENT SPENDING AND SOCIAL TRANSFERS**
Per cent of trend GDP (1993 or nearest year)



1. Per cent of mainland GDP, 1991.

2. 1992.

3. 1990.

Source: OECD, Social Expenditure Database and *Annual National Accounts*.

Moreover, some of the rise in activity in 1987 may have been a temporary shift of pay and/or work from surrounding years; thus, the permanent effects of the income tax could be smaller.

Retirement income in Iceland is based on three pillars: union-based pensions, a small public pension scheme (social security) and personal savings which benefit from various tax incentives.⁸⁶ The union-based pension plans are primarily defined-benefit plans funded by contributions from both employees (4 per

cent of daytime wages) and employers (6 per cent). The retirement age for full pension benefits ranges from 65 to 70 years, and full benefits are typically about 63 per cent of previous daytime earnings for a worker with forty years of contributions.⁸⁷ The social security scheme provides full benefits at age 67. In 1996, the basic benefit for an individual was IKr 160 476 (about \$2 400) per year; couples receive 180 per cent of the individual rate (about 11 per cent of the average earnings of a married couple). Most beneficiaries receive an income-tested supplement of up to IKr 319 373 per year. Benefits are subject to tax. The social security pensions are financed on a pay-as-you-go basis with about half of the contributions paid by employers and the rest by the central government. The social security tax is 6.85 per cent of salaries except for a special 3.55 per cent rate for agriculture, fishing, manufacturing, hotels and restaurants, rental of cars and computer services. This dual rate scheme, which effectively subsidises employment in these industries, will be phased out during the next few years and will be replaced by a unified rate of about 5½ per cent.

The unemployment benefits programme was overhauled in 1993 when eligibility was expanded. The programme is financed half through dedicated wage taxes and half through general revenues. Now all wage earners are eligible, instead of just union members, as well as self-employed and those working short hours. Wage and salary earners must have worked a total of at least 425 hours during the previous 12 months to be eligible for the minimum benefits and 1 700 hours for full benefits. For the self-employed, eligibility is based on previous social security tax payments, and they must close their business to be eligible. Workers whose hours have been reduced because of a decrease in activity at an enterprise are also entitled to a partial benefit and are, therefore, counted among the registered unemployed.

Beneficiaries must register each week with an employment exchange, and their benefits may be denied if they refuse a job offer. Decisions on the right to a loss of benefits are made by a Benefit Allocation Committee which is composed of union and employer representatives (union representatives are a majority). Full basic benefits have been set equal to wages for eight hours of daytime work in ordinary fish processing, based on the seniority level of seven years, which equalled IKr 52 728 (nearly \$800 per month) in 1996. In addition, there are child benefits that amount to 4 per cent of basic benefit per child under the age of 18. Unemployment benefits would replace 97 per cent of wages for minimum wage

workers who work no overtime.⁸⁸ Benefits are taxable, and for a single worker at average wages they would replace half of after-tax income. This is lower than in other Nordic countries, but higher than most other non-Nordic OECD countries (Table 34).

Beneficiaries are eligible for 52 weeks of payments, and in the following 16 weeks no benefits are paid, whereupon eligibility is renewed and the cycle repeated. Beneficiaries can eliminate the waiting period between cycles by attending retraining and vocational training courses or taking part in other programmes run by local authorities. Thus, benefits can be received for an indefinite period, which makes the system potentially one of the most generous in the OECD, since most other countries having indefinite benefit periods have moved to limit them. Reforms have just been legislated (see below).

Table 34. Unemployment benefit replacement rates,¹ 1995

	First year			5 year average
	Single	With dependent spouse	With spouse in work	
Australia	29	52	0	27
Austria	35	38	21	26
Belgium	51	51	47	42
Canada	54	54	54	27
Denmark	71	73	69	71
Finland	65	65	64	43
France	58	58	58	38
Germany	35	38	35	26
Greece	44	53	44	22
Iceland	53	53	53	40
Ireland	26	42	26	26
Italy	45	45	45	20
Japan	30	30	30	10
Netherlands	70	70	70	46
New Zealand	33	54	0	30
Norway	62	62	62	39
Portugal	65	65	65	35
Spain	65	65	65	32
Sweden	76	76	76	27
Switzerland	70	70	70	30
United Kingdom	18	29	18	18
United States	27	29	25	12

1. Benefit entitlement before tax as a percentage of previous earnings before tax. Data shown are averages over replacement rates at two earnings levels (average earnings and two-thirds of average earnings).

Source: OECD Database on Unemployment Benefit Entitlements and Replacement Rates.

The unemployment benefits programme may be contributing to the rather long job search, the rising caseload of long-term unemployed and the difficulty of finding employees for low-wage jobs. Given that unemployment benefits equal daytime wages in the fish-processing sector (although only 44 per cent of monthly pay including bonuses and overtime), it is not surprising that this sector is having difficulty attracting Icelandic workers and has had to resort to foreign workers.⁸⁹ The rapid rise in long-term unemployment may have been aided by indefinite benefits coupled with the emergence of labour market slack, and thus the opportunity to be unemployed. Indeed, it is worrisome that a significant number of the registered unemployed are not actively searching for work.⁹⁰

Disability benefits per person are similar in magnitude to social security retirement benefits. The number of persons receiving disability benefits has risen sharply in recent years from around 4 000 in 1989 (nearly 3 per cent of the labour force) to 7 000 in 1995 (over 4½ per cent of the labour force). As in many other countries, some of this increase may result from worsening employment prospects, particularly among low-skilled workers.

Active labour market policies

Two strategies have been pursued to assist the unemployed. The unemployment benefit system has been managed by the social partners and the government in 56 municipal offices (Public Employment Exchanges). While their primary role has been administration of benefits, they have also provided job counselling and placement services, including information on local manpower supply and demand. In addition, they provide information and advice on education and training to improve skills, which is necessary to undertake to maintain benefit status. The government has also used public sector job creation to help provide work in recent years, in particular road building and summer work for youth (Table 35).

The public employment offices have not been the primary source of employment information; informal methods and newspaper listing are utilised more frequently (Table 36). One of their limitations has been their local focus. This is being addressed by just passed legislation to consolidate the municipal labour offices into eight district offices. In addition, stepping up efforts in counselling and placement may be beneficial. This appears to have been successful in the Reykjavik area, where use of the public employment office is much more common than in other regions, as well as in other countries.

Table 35. **Public expenditures on labour market programmes**

IKr million

	1993	1994	1995	1996
Labour market measures	2 943	2 311	2 150	1 084
Employment-generating				
Projects	2 844	2 158	2 002	922
Road building	1 550	900	1 250	650
Public construction and repair	760	515	0	0
Temporary job creation	454	713	432	252
Other specific measures	80	30	320	20
Education and vocational training	99	153	148	162
Unemployment benefits	2 664	2 817	3 523	2 900
Total expenditure	5 607	5 128	5 673	3 984
<i>Memorandum item:</i>				
Total expenditure, % of GDP	1.4	1.2	1.2	0.8
Employment-generating	0.7	0.5	0.4	0.2
Unemployment benefits	0.7	0.7	0.7	0.6
Temporary job creation in man-years	630	990	600	350

Source: National Economic Institute.

Table 36. **Unemployed persons by residence and method of job search, 1995**Per cent of unemployed¹

	Total	Capital region	Other regions
Public employment office	36.9	41.7	29.0
Private employment office	10.3	25.0	9.6
Direct contact with employee	61.3	62.3	59.7
Through the press	78.5	85.5	66.5
Through friends and relatives	56.5	60.4	50.0
Other methods	43.9	45.1	41.8
Stopped searching	15.5	12.5	20.7

1. May sum to more than 100 as more than one method of search was used.

Source: *Labour Market Statistics*, 1995.

Increasing the knowledge base, efficiency and innovative capacity of the economy

Icelanders frequently lament the long hours of work needed to maintain their high standard of living. Indeed a recent report to the Prime Minister stated that

while Icelanders enjoy a high standard of living, it was because low labour productivity was offset by long hours of work (National Economic Institute, 1996). Ultimately, labour productivity, and thus wages as well, are determined by the average quality of the labour force, the amount of physical capital at its disposal and management's ability to utilise these resources efficiently. In the case of Iceland, educational attainment levels are moderate, although improving, and the level of competition may have not been strong enough in all sectors to promote the most efficient use of resources. Meanwhile the capital-to-labour ratio is in line with those in other countries.

Upgrading skills and competences

As described in Chapter III, educational achievement is moderate in Iceland compared with other OECD countries, both in terms of years of schooling and scores on some achievement tests. This low level of achievement is probably one factor in Iceland's low level of labour productivity.

Labour market outcomes vary by educational attainment in two dimensions. Those who have advanced further through the education system experience higher rates of employment and higher wages. Wage differentials have traditionally been narrow in Iceland, like those in other Nordic countries, and before the recent emergence of unemployment, job market success probably varied little by education. Thus, the pay-off to extra years of schooling was not as large as it is now, when it seems similar to rates of return in other OECD countries (see Chapter III). The narrow wage distributions, thus, may be one reason for the lower level of attainment and the substantial drop-out rate during post-compulsory studies.

The system of vocational education and the school-to-work transition has been an important topic in the policy debate in recent years. Most observers express concerns about weaknesses in the vocational training system. Much training, however, is probably provided on the job. The high employment rates in Iceland have traditionally guaranteed access to this form of job training. But now, with employment no longer guaranteed, it is incumbent on the social partners and the government to ensure that the low skilled continue to have access to entry-level employment. In this regard, high negotiated minimum wages, especially for night work, may become an important impediment to the development of a efficient method of informal training. That said, apprentice wages are much

lower than negotiated minimum wages; on average a beginning apprentice earns 60 per cent of the minimum.

Product market competition

Because of its small size, product market competition in Iceland – a topic reviewed in the 1995 *Survey* (OECD, 1995c) – is driven as much by its foreign trade and investment policies as competition policies themselves. In addition, the significant degree of public ownership also affects the degree of product market competition. The competitive environment may influence the rate of adoption of new technology, the efficiency of production and the relative prices of goods and services. Its effects on labour markets are quite complex. Typically a lack of product market competition is associated with rents which are shared by labour and capital. While workers and owners within the industry receive excess returns, the economy as a whole suffers from distorted production with too many resources allocated to the sector, and thus average real wages economy-wide are lower. In terms of employment, a lack of product market competition shifts the industry composition of employment but may have little effect on the level unless it lifts the level of structural unemployment. This is more likely when labour markets are less flexible. But even in the presence of flexible labour markets wage premia may lengthen optimal search time and, thus, structural unemployment rates.

In the case of Iceland, the overall degree of product market competition is sufficient to stimulate competition and growth. In particular, the export oriented industries of fishing, fish processing and international transportation have exhibited relatively higher levels and growth rates of labour productivity than the economy in general (Table 31). On the other hand, some protected sectors do not appear to be as successful. In particular, the agricultural sector is still protected by import barriers, which are amongst the highest in the OECD (OECD, 1994b). Policies enacted during the 1990s to reduce government intervention in agriculture have reduced the level of subsidies, thereby encouraging the continued movement of resources from agriculture to more productive industries and stimulating productivity gains in the sector. Performance in the banking and insurance sectors has also suffered due to a lack of competition, but entrance into the European Economic Area (EEA) has brought increased competition in the insurance market.⁹¹ As noted in the 1995 *Survey*, Iceland has a long history of public

ownership of commercial enterprises, extending to nearly every sector of the economy. Concern about efficiency and about private sector entry and entrepreneurship being stunted has led some to re-examine the rationale for the current range of activities under public ownership.

Technology and innovation

As in the area of product market competition, Iceland's technology and innovation policies are shaped by the constraints of having a small economy. Thus, Iceland devotes less of its GDP to research and development (R&D) than most other OECD economies, and that work is more heavily oriented to just a few sectors – agriculture, energy and fisheries and fish processing (OECD, 1993b). The more limited diversification is probably desirable, given scale economies and synergies and the concentration of Iceland's natural resources. Iceland's R&D investments in fishing, fish processing and energy may have been well spent. The health of the fisheries is improving, and Icelandic stocks are not as over-fished as those in many other countries. Exports of fish processing equipment have risen rapidly in recent years. Iceland's geothermal energy is increasingly being tapped for energy-intensive materials processing. A welcome development in recent years is the emergence of a computer software industry in Iceland. This is an excellent example of a niche where scale economies may be quite small, and local innovation is necessary for an economy to keep pace with world developments. Software exports are now twice as large as agricultural exports.

Spending on R&D has expanded rapidly in recent years rising from 1 per cent of GDP in 1990 to 1½ per cent in 1995, compared with a 2 per cent average for the EU as a whole. Efforts to boost R&D spending include a 20 per cent increase in funding to the Technological Fund in 1995, one of the two main funds for supporting research and technology. In addition, the Icelandic Research Council was established in 1994 to encourage Icelandic firms to participate in European technology programmes as a way to promote greater access to foreign technology and know-how.

Again, like product market competition, policy orientation towards the free movement of goods, services, labour and capital is a key aspect of technology and innovation policy. The reduction of tariff barriers for goods and services (associated with the EEA and the Uruguay round) will improve the ability of

Icelandic firms to import technology embedded in the latest products and will allow them greater access to foreign buyers, thereby gaining larger markets over which to defray R&D expenditures and simultaneously encouraging R&D in Iceland. Removal of capital controls and easing of rules on foreign investment, two policies pursued in the early 1990s, are another way to bring in new management practices and technological know-how. This can be encouraged by study abroad as well. Iceland's policy of assisting education abroad through its student loan programme is an important mechanism to ensure Iceland's integration into the rest of the world.

Recent actions

In 1996 the government made some important changes to the laws governing wage negotiations. It considered that the round of labour negotiations dragged on too long, in part because labour demands were sometimes undefined, and because it was seen that those who negotiated last received the largest settlements. Thus, a new labour law was enacted to speed the process. Beginning with the 1996-97 negotiations, unions are required to submit formal demands before the end of the contract. Union leadership must now submit formal strike votes to a secret ballot. Before, votes authorised the executive committee to call a strike, but did not set the conditions nor the strike deadline. These changes were seen as conducive to creating a more national focus for labour negotiations.

As part of the 1997 budget, the government boosted unemployment benefits by 2 per cent and removed the previous automatic linkage to wage rates in fish-processing. In March, the Althing enacted legislation to clarify and tighten eligibility criteria, place some limit on benefits duration and shift the focus to a national job market. The work criteria will be shifted from a criterion based on hours to weeks of full-time work. Full benefits will require 52 weeks of work rather than 1 700 hours in the previous year.⁹² Benefits will last for up to five years, provided that the beneficiary is willing to take job offers. After the five-year period, eligibility can be re-established by working for at least six months out of the following twelve. The five-year limit would be similar to Denmark's, but much longer than in most other OECD countries. In the case of Denmark, the Committee has found that such a long duration has created significant problems and recommended its reduction (OECD, 1996*d*). In addition, the government

plans to consolidate aspects of the unemployment insurance system by reducing the number of regional employment exchange councils from the current 56 locally-based offices to eight regional offices and by reducing the number of benefit allocation committees from over 30 to eight. This should improve job search by collecting job information on a regional rather than local basis. Moreover, these new regional agencies will provide counselling. Within ten weeks of registering as unemployed the job seeker must make a contract with the agency spelling out the job seeker's job search and training plans as well as services to be provided by the agency. Failure to make a contract may entail loss of benefits.

Assessment and scope for further action

As a result of appropriate sound economic policies and attitudes towards work, the Icelandic economy has had extremely high average levels of work effort – high employment rates and long work weeks – for many decades. Indeed, the major failing of macroeconomic policy had been to maintain resource utilisation at such high levels that high inflation was endemic. But a shift in policy orientation during the second half of the 1980s reduced resource utilisation to more sustainable levels, and consequently price stabilisation has been largely achieved. During the transition period, unemployment rates have been temporarily elevated, in part because of adjustments to reforms in the agriculture and fishing sectors.

Microeconomic policy settings have been fairly sound. In particular, government regulation of labour markets has been light, allowing the social partners to find the wage level consistent with full employment and to strike a balance among potentially competing job characteristics, job security, working conditions and pay. The government's actions to improve product market competition through increased foreign competition (trade liberalisation and removal of capital controls), improved management of natural resources (fish catch quotas and agriculture reforms) and more competitive domestic markets (the competition law and reduction of government production of goods and services) are welcome additions to this generally pro-market outlook.

However, there are areas of concern. While product market competition has been improved, there is still room for further gains. In particular, the agriculture sector should be further opened to foreign competition. This would lower prices

and increase real incomes and would free resources to sectors with greater productivity. The government should also accelerate its privatisation programme, especially with regard to the financial sector. In so doing, it is important to ensure effective competition from domestic or foreign sources so that public monopolies are not replaced by private ones.

Iceland is still in the process of updating its unemployment insurance system, so that it is better adapted to higher rates of unemployment. The current system could be enhanced in several ways. The effectiveness of the public employment service should be improved by increasing its role in job placement and counselling (as has been done in Reykjavik), by establishing a nation-wide information network (the proposed consolidation of the employment exchange councils should move Iceland in this direction), and by further tightening of benefit eligibility. Payment and management of benefit claims should be integrated into the public employment exchange. The current rules may subsidise the self-employed, part-time employed and seasonal workers as they do not discriminate between one-time transient under-employment due to a temporary lack of demand and persistent or recurrent under-employment. A shift to experience rating would reduce this subsidy. Moreover, while the shift to a five-year limit on benefits is an improvement over the current open-ended eligibility, it may still discourage labour market attachment for the least skilled.

The government and social partners should continue to work together to ensure that the labour force is well educated and trained. Secondary and tertiary education programmes need to be adjusted to meet changing needs. Graduation rates need to be raised towards levels of other countries. Vocational education and the school-to-work transition has to be improved. The social partners should re-examine, on a case by case basis, the need for the extraordinary high wage premiums for work outside of standard daytime hours. In many countries, work at less desirable times is filled by those with less experience or lower skill levels. These jobs are often an entry into regular employment at implicitly lower wages (the lack of a premium) that match the lower skill level. Moreover, a shift to more standard pay schedules will then encourage both workers and management to search for productivity enhancements that also reduce time spent at work.

The new rules governing the wage bargaining process do not seem to have succeeded in speeding the process. The advantage of synchronisation of bargaining is not entirely clear, as whether negotiating last added leverage is open to

debate. It may have been the case that those with relatively weak positions opted to conclude agreements early, while those with stronger positions had more protracted negotiations, so that ordering was correlated with, but did not cause, wage drift. The requirement of secret strike votes with more clearly defined conditions for a strike probably creates a more informed vote. The net effect of these changes including the tightening of conditions for local strikes is uncertain, but many expect that it may shift bargaining, and strikes, to the national level. This would hinder labour market flexibility if local labour and product market conditions cannot be adequately addressed.

Notes

1. To the extent that investment is financed by foreign owners there is no pressure on the balance of payments as there is an offsetting capital account inflow.
2. Developments in these sectors were used to justify the 1992 devaluation and the 1996 increase in interest rates, for example.
3. However, projections of cod stocks are fraught with uncertainty because of the imprecision of stock measurements, and variation of recruitment classes owing to shifts in environmental conditions which can lead to sizeable changes in stocks at a given level of fishing.
4. The maximum efficient yield takes into account both biological factors (sustainable mortality rates of the fishable stock) and economic factors (rising marginal cost of increasing the catch).
5. Hydroelectric plants provided 81 per cent of Iceland's installed capacity and 94 per cent of power generation in 1994. Geothermal plants had 5 per cent of both total capacity and power generation and conventional thermal plants the remainder.
6. The overall demand effect would be much smaller because of the high import content, about 56 per cent. During the construction phase labour demand would be boosted by about 950 person-years, about 0.8 per cent of the labour force and 7 to 10 per cent of labour currently in the construction sector. However, the lasting increase in labour demand would be only 155 person years.
7. Using the GDP deflator there is no real growth, but using the consumption deflator there was 2 per cent real growth over the two years.
8. Trend GDP was calculated using a Hodrick-Prescott filter (with lambda set at 50) on real GDP from 1960 through 1998 (using the OECD projections from *Economic Outlook 60*). Taxes were assumed to be have an income elasticity of 1.0 with respect to the current year's revenue after 1988 (while the income elasticity for direct taxes is probably greater because of bracket creep, that of indirect taxes may well be lower reflecting consumption smoothing). Before 1988 direct taxes were assumed to be a function of the previous year's GDP. Non-tax revenues were assumed to have an income elasticity of zero. Trend unemployment benefits were set at 0.2 per cent of GDP (the average for the 1981-96 period) per percentage point of the NAIRU which was assumed to be 1.0 in the 1980s, rising to 3.0 by 1994.
9. On the tax side the main change to the budget was to exempt the compulsory payment to pension funds (typically 4 per cent of wages) from the income tax. This was phased in, and the first stage reduced revenues by IKr 0.6 billion. With regard to outlays, the government boosted spending on social security, sickness and unemployment insurance payments by IKr 1.3 billion and granted wage increases amounting to IKr 0.8 billion.

10. Iceland's personal income tax has a single marginal tax rate of 41.9 per cent for all income over a threshold – the personal allowance; this reduces the average tax rate by 20 percentage points. Other allowances reduce the effective tax rate by about 4.6 percentage points, bringing the average tax rate to 17.3 per cent. The tax elasticity is, thus, about 2.4 (41.9/17.3), and the average tax rate rises as average incomes increase. In the past this was mitigated by adjusting the system for inflation, and thus there was only real bracket creep. But as from 1996, the tax system has no longer been automatically adjusted for inflation, and revenues may henceforth rise more rapidly. Aggregate income taxes have a smaller income elasticity, a weighted average of the elasticity per tax filer (2.4) and an implicit unit elasticity from additional filers.
11. The motivation for this move was to exploit the call option included in order to reduce interest charges. The redeemed bonds carried real interest rates of 8 to 9 per cent, about 3 percentage points above recent rates. The saving is estimated at IKr 2 billion in present value terms over the remaining life of the bonds.
12. Revenues should be boosted because it is expected that the increased revenue from taxation of interest income will more than offset the much lower taxation of other capital income. Portfolios will, however, probably be re-allocated away from interest income.
13. The government proposes to cut the basic income tax rate by 4 percentage points over three years (1.1 points on 1 May 1997, 1.9 points on 1 January 1998 and a final 1.0 point on 1 January 1999) and to increase the personal and other tax exemptions by 2.5 per cent per year. These changes are expected to reduce tax revenues by 1 per cent of GDP in 1999, but are partially offset by revenue-raising measures, such as increasing the special high-income tax rate by 2 percentage points to 7 per cent, (although the threshold will be raised by 11 per cent this year), freezing all tax credits and benefits at their 1996 levels for 1997 and phasing out the tax deduction for the purchase of domestic financial assets of up to IKr 150 000 per adult per year. It is to be hoped that local governments will also contribute to financing the tax cuts. Finally, the child tax credit system would also be modified as from 1998: in a revenue-neutral change, the lump-sum component would be eliminated and the phase-out range extended so that overall progressivity would be enhanced, yet the highest marginal rates would be lowered.
14. Work done by the Central Bank shows that current changes in domestic money-market rates are significantly influenced by the lagged interest spread with foreign (United States, German and a trade-weighted average of 16 foreign rates) rates in a vector auto-regression. The size and significance of this feedback effect has risen sharply since short-term capital flows were deregulated at the beginning of 1995. Since that time both the level and the increase in the effect have been much greater for the role of US rates than the other rates.
15. The Treasury began issuing such paper in September 1995.
16. These inflows were the result of a sharp diminution in private non-financial outflows after the portfolio adjustments following the capital account deregulation and substantial net foreign borrowing by both the banking sector and especially by the Treasury (see Table 12 above), anxious to avoid the high rates on the domestic market; the latter was more than offset by reduced credits from the Central Bank of IKr 14.5 billion during the three months ending in April.

17. In March, Standard and Poor's had already upgraded its rating on Iceland's foreign-currency debt and began to rate its long-term Krona debt. The April development, referred to in the text, was an announcement by Moody's Investors Services that it too would revise Iceland's credit rating; this was officially done in June.
18. This rate is 15 per cent below the end-1991 level.
19. In June 1996 these weights were updated to reflect Iceland's foreign trade in 1995. The weight of the dollar has, thus, risen from 18 per cent prior to the policy change to 22 per cent under the new system, while that on the yen has climbed from 6 to 7.1 per cent, and the weights on the European currencies have shifted from those specific to the ECU to ones pertinent to Iceland: sterling's weight has risen from 11.2 to nearly 13 per cent, and the Norwegian krona has been introduced with a weight of some 7 per cent.
20. There remains some 4.4 per cent of credits and guarantees which are reserved, so that write-offs will probably continue for several more years.
21. For example, Figure 12 shows that bank intermediation margins are very large: the gap between average loan rates and the corresponding cost of funds has probably grown still wider in recent years, often reaching 4 or 5 percentage points. Only those who are unable to borrow directly in the market at home or abroad are likely to be willing to pay such rates, raising the possibility of adverse selection problems.
22. Since April 1995 all indexation has been based on the consumer price index (formerly called the cost of living index) rather than the credit terms index which is no longer published.
23. As from January 1996 all indexed loans must be of a minimum maturity of three years rather than two; next year this floor will jump to five years, and the aim is to boost it to seven in the year 2000. The minimum duration for indexed deposits will be lifted from one to three years next year, and they may be eliminated in 2000.
24. A persistent excess supply developed, as market makers were reluctant to adjust prices downward to levels which would clear the market because of their own unhedged interest-rate exposure.
25. This catch level is lower than the maximum catch level because of the increasing effort which is needed to bring in the catch at high levels of utilisation.
26. This agreement commits the signatories to dismantling border controls for goods and persons from other member countries.
27. Of course the total cost includes the opportunity cost of lost wages from spending time out of work, but there are no readily available cross-country estimates of this component.
28. Official Icelandic data for those children participating in early childhood education (*i.e.* pre-school) are not available. This is likely to bias the figures downward, since the same missing data problem is true only for Australia amongst other OECD countries. See OECD (1996a, Table P1.1). But official sources estimate that around three-quarters of all 5 year-olds are registered in pre-schools, in line with the OECD country mean (OECD, 1996a, Table P2.1).
29. The share of the population located in these two regions rose rapidly from 21 per cent in 1910 to 56 per cent in 1960. Since then shifts have been more moderate with the share reaching 65 per cent in 1995. Absolute declines in population have been recorded in some regions, notably the two regions in the west of the island (Vestfirðir and Vesterland).

30. It is also possible that this change is attributable to lengthening periods of initial study – with different normative implications.
31. The gap for all levels combined is much smaller – about 10 per cent – because the Icelandic aggregate data include some spending (about 4 per cent) not allocated by level and the OECD country mean includes (low) figures for pre-primary education.
32. In the three estimated regressions in Figure 19 (below) the implied income elasticity at the mean is around 1.3.
33. Universities rarely offer courses in subjects entailing very heavy fixed capital costs; instead students following such courses go abroad (see below).
34. With overtime pay meriting an hourly premium of 26 per cent for primary school teachers and 44 per cent at the secondary level the incentives are fairly clear, albeit less so than in other sectors where it is 80 per cent for all non-daylight hours (see Chapter IV). Actual working time data show that about one-quarter of all teachers work 30 per cent or more in overtime and 7 per cent more than 50 per cent beyond full-time equivalence (Statistics Iceland, 1996). But at the same time there are many female teachers, especially at the primary level, who are involuntarily teaching part time.
35. OECD (1987) reported that teaching was a “depressed profession” (p. 31) with up to 70 per cent of qualified teachers (especially in science) either never entering the profession or leaving it to pursue another career. Too many in the profession worked part time and were not properly qualified (58 per cent at the upper secondary level). Very recently, the University of Iceland had difficulties finding qualified applicants for two professorships in radiology and computer engineering with starting salaries of around \$2 100 per month.
36. Prior to 1986 most teachers lacked the right to strike and were subjected to binding arbitration in disputes. In 1987 and 1989 there were important strikes in order to achieve private-sector parity. The government promised that this would be achieved by 1994 but then abandoned that promise in 1990. This was appealed all the way to the Supreme Court which decided that the government’s action constituted a legitimate termination of an agreement with three months notice. The teachers’ unions still claim: that the government is in contravention of a number of ILO conventions, for example regarding workers’ rights to choose their own union; that it engages in a “hidden wage system” whereby teachers are excluded from bonuses given to those “closest to the ministers” (Commission of the European Communities, 1995); and that it intervenes in individual hiring decisions. When the law was recently passed devolving responsibility for compulsory schools to the municipalities, however, the rights of all the existing teachers were grandfathered in order to get their acceptance and build up their trust.
37. According to figures provided in Statistics Iceland (1996), 54 and 51 per cent of newly entering teachers in state basic schools worked less than full-time in 1994 and 1995, respectively, compared with 42 and 34 per cent of other teachers.
38. For both pre-primary and compulsory schooling there are about 14 pupils per full time equivalent teaching staff, whereas the OECD country mean is around 18 to 20 (OECD, 1996a, Table P32). At the upper secondary level, however, the gap is small, with both Iceland and the average OECD country near 13. Iceland’s ratios have been on a clear downward trend since the early 1980s (Menntamálaráðuneytið, 1996).

39. The shift system is cost effective. But there is no evidence regarding its impact on outcomes.
40. The existence of these boarding schools means that the teachers are called upon to supervise outside of classroom hours; this causes motivational problems and leads to higher staff turnover. Rural schools are also often required to have mixed age-group teaching due to the sparse population, but some claim that this has educational advantages.
41. With the appearance of labour market slack in the 1990s has come a severe decline in the availability of summer employment for students.
42. This might be problematic, as such a high proportion of upper secondary school students – probably over 40 per cent – work part time, and it has been customary for children as young as 13 or 14 to get paid summer employment.
43. But at present there is only one correspondence school run with any state assistance.
44. Of course the fact that the number of years taken to complete upper secondary and tertiary studies is so great implies inefficiency in that regard.
45. The importance of educational attainment in determining the variation in output per worker across nations has recently been emphasised by Hall and Jones (1996).
46. According to Oskarsdottir (1995), the share of each cohort graduating from university preparatory programmes rose from 10 per cent in 1965 to over 20 per cent in 1975 and over 35 per cent in 1992.
47. The Icelandic data given in the table are for those aged 16-74, whereas standardised OECD data (OECD, 1996, Table C1.1) cover only the age group 25-64. However, it is possible to make assumptions regarding the two groups 16-24 and 65 and over in order to get approximations for the standardised age group. Those shares would appear to be 48 per cent with lower secondary education only, 38 per cent with upper secondary education and 14 per cent with tertiary education. The OECD country means are around 41, 47 and 12 per cent, respectively.
48. Anecdotal evidence gathered from a small number of Icelanders who have lived abroad and then returned home with their children indicates that once these children have begun their schooling in other countries they are generally well ahead of their compatriots in subjects other than language and most often are placed a grade ahead.
49. It should be noted that when looked at in detail the results do give some cause for concern and presage the mathematics results described in the next sentence: according to Oskarsdottir (1995, p. 239), 14 year-old Icelanders ranked first in reading expository texts, fourth in reading narrative texts but nineteenth (out of 31 countries) in reading charts, tables and graphs.
50. While failing grades are rare at this late stage, they are more common earlier, which is one of the reasons for high numbers of drop-outs.
51. In recent years parents have been grouping together in order to lobby for their interests. Some years ago a study showed that the public was less satisfied with education than with other public services. Some allege that the reason is that the system has been quite teacher-oriented.
52. That such differences exist both between districts and within them can be attested to by Oskarsdottir's findings (1995) of significantly better grades on four national tests for those in the capital region than elsewhere and that "substantial differences (in those mean grades) were observed among individual schools" (p. 199). Nonetheless, data provided in

Postlethwaite (1995) show that variation in reading scores across schools in Iceland was lower than in most other countries, except its Nordic partners.

53. The monopoly is not complete, however, as schools are allowed to buy up 10 per cent of their materials from others and an additional amount per pupil in the final year of compulsory education. Also, the Centre itself can decide to buy materials from others.
54. Speaking English or another major international language at home, or at least well enough to engage in a sophisticated interaction with a native speaker in another country, in order to communicate the ideas that contribute to productivity, has recently been shown to explain 24 per cent of productivity differences across 133 countries (Hall and Jones, 1996).
55. Since 1990 the situation had been as follows: capital expenditures were entirely paid for by local government, as were operating costs other than instructional, administrative and those pertaining to educational materials which were paid for by the State.
56. However, some have joined forces: for example, there are over 100 school boards.
57. By most other nations' standards regional income differences are, however, quite small: for example, in 1995 average income from employment varied from 95 per cent of the national average in two regions to 111 per cent in another.
58. Some consideration is being given to following the Swedish example and separating the funding of research and teaching.
59. There are exceptions: students at the Institute for Continuing Education and those studying at private business schools do pay tuition fees, the latter amounting to IKr 180 000 per year, more than eight times the University registration fee.
60. The Fund has gone through a number of regime shifts over the past 20 years, each one progressively reducing the subsidy element in the scheme. From 1967 until 1976 loans were charged a nominal interest rate of 5 per cent, whereas overall consumer price inflation averaged near 22 per cent per year. Throughout history no interest has been charged until studies have been terminated, and in that period repayment began only five years after termination, and anything left outstanding after 15 years was written off. This was so attractive that students were known to enrol just to obtain the subsidy implicit in the loan. In 1976 the interest rate was made equal to zero in real terms, repayment commenced three years after termination, and continued for a maximum of 20 years. From 1982 to 1992 the maximum repayment period was 40 years. Finally, since 1992 the real interest rate has been 1 per cent, there is no longer any maximum repayment period, repayment begins only two years after termination, and payments are roughly 5 per cent of gross income (with a minimum of about IKr 50 000 per year). Thus, the current subsidy element is at least the real annual social cost of capital in excess of 1 per cent: something close to 5 per cent per year.
61. See above for a discussion of the need for greater quality control and accountability.
62. Various screening theories – such as expounded in Arrow (1974) – maintain that the education-earnings relation is positive because similar traits are required to succeed in both schooling and the labour market and that education may only be identifying those who have such traits. One recent contribution to this literature, Card and Krueger (1996), concludes nevertheless that for the United States a 10 per cent increase in resources results in a 1 to 2 per cent increase in earnings, while a 10 per cent reduction in the pupil-teacher ratio generates additional earnings of 0.4 to 1.1 per cent. Burtless (1996) cites evidence that such an increase

would likewise boost educational achievement by 0.7 standard deviations on standardised cognitive tests. Greater spending may lead to longer schooling as well as more effective schooling. Denison (1985) has estimated that greater attainment has been responsible for up to one-quarter of US productivity growth. Yet these outcomes have been disputed by a number of experts who maintain that these effects have probably fallen over time, that they may be confounded with so-called “sheepskin effects” (Jaeger and Page, 1996) – a proxy for the signalling theory – and that they in no way are guaranteed independent of how the resources are utilised. Finally, it could be argued that employers, to the extent that they do not pay much attention to school records, either in Iceland or in the United States, do not manifest much sign of screening behaviour.

63. In Iceland’s case, it has recently been argued (Olafsson, 1992 and 1993, cited in Oskarsdottir, 1995) that upper secondary education (especially vocational and technical) is the level most important to future economic development.
64. Olafsson (1988, cited in Hilmarrsson, 1989) reported that in a then-recent survey 86 per cent of all Icelanders believed earnings differentials to be too large already at that point.
65. Some, for example Olafsson (1993) and Herbertsson (1993), both cited in Oskarsdottir (1995), have even gone so far as to argue that Iceland suffers from a problem of overeducation, at least in certain strata. There are indeed some disciplines where domestic oversupply is seen as a problem: besides architecture, there are *numerus clausus* limits in university studies for nearly all health care professions.
66. According to Labour Market Statistics, 55 per cent of all those with a tertiary education worked in the public sector (broadly defined) compared with its 33 per cent overall employment share. Stated another way, 23 per cent of all public-sector employees have a tertiary education, whereas only 9 per cent in the private sector do.
67. Herbertsson (1997) also argues that the returns to education in Iceland are very low by international standards and in many cases negative once the opportunity costs of the time spent studying are considered. But he does not include non-pecuniary returns to greater attainment (see below).
68. The ratio of the unemployment rate among those with less than upper secondary education to that for the university-educated in 1994 was 21 (see Table 29 in Chapter IV); the difference in percentage points was 8.0. Simple means of these measures for 21 OECD countries in 1994 were far lower, at 3.6 and 6.9, respectively.
69. Among the prime-age respondents to Hilmarrsson’s questions in 1988 most did not seem to think they lacked mathematical or linguistic skills: only slightly over a third said they could improve their job performance if they had more such skills and more than a quarter said they had an excess of such skills over job requirements. This could be interpreted as support either for the overeducation hypothesis, for a generalised problem of mismatch in a small and narrow labour market or for the lack of employer demand for skills, given the way the workplace is organised.
70. Iceland’s experience with the last is minimal, but something similar exists in the tourism field.
71. Whether those claims have been matched by funding is open to question. In any case, legislation has not proved to be an effective way of expanding VOTEC in Iceland (Oskarsdottir, 1995).

72. Others claim that VOTEC teachers need better pedagogical training.
73. However, the lower participation rate of the latter group is due in part to full-time school attendance in higher levels of education.
74. In regressions of labour force participation rate for men on the unemployment rate, a time trend and a dummy for 1987, the coefficient on the unemployment rate was -1.1 (t-statistic of 2.3) for the 1980-95 period. The coefficient on the time variable was insignificant. For women the coefficient on the unemployment rate term was -2.6 ($t = 5.0$) for the sample period and the coefficient on the time trend was very significant, 1.22 ($t = 21.7$). There is some indication that, as in other countries, the coefficients have become smaller in recent years.
75. A regression of net immigration (as a per cent of employment) on the previous year's employment growth generates a slope coefficient of 0.1 with a t-statistic of 2.7, significantly different from zero at the 99 per cent confidence level. There is no contemporaneous correlation.
76. Based on administrative records, employment in agriculture fell by 1 900 person-years from 1990 to 1996 (representing $1\frac{1}{2}$ percentage points of total employment). According to the labour market survey the number of those employed in elementary occupations or as clerks fell by 10 per cent from 1991 to 1996 (April Survey).
77. While it is tempting to suggest that this reflects the high labour force participation rates of Icelandic women, simple cross-country regressions show no correlation between these variables.
78. Workers who have a part-time job for economic reasons may collect partial benefits as can those on short-term layoffs in the fishing industry where workers may be sent home because of a lack of fish.
79. The cross-country experience on the ratio of female to male unemployment rates is quite diverse, with women on average (weighted by population) showing a slightly higher rate of unemployment. Similarly, there is quite a diverse experience for older workers, while most countries have slightly lower rates, some countries have much higher rates.
80. During the 1990s, the North East, North West and South West have had registered unemployment rates about 1 percentage point above the national average and the Westfjords about 2 percentage points below average. Reykjavik was $\frac{1}{4}$ percentage point below average.
81. A regression of the change in per capita income, measured by PPP GDPs, on the change in the employment/population ratio (1980 to 1994) and the average investment/GDP ratio revealed a weak positive relationship across OECD countries. The employment variable had a coefficient of 0.6, but a t-statistic of only 1.4 (significantly different from zero at an 82 per cent confidence level). The coefficient is about the right order of magnitude for this variable. The investment variable had a coefficient of 0.4 ($t = 1.0$). The low significance of the coefficients may arise because of mismeasurement of the changes in per capita income owing to the difficulty of measuring PPP GDPs as well as the fact that equation does not control for the efficiency of investment or labour utilisation.
82. Using the decile figures in Table 32, an estimate of the income for an individual in the 90th percentile can be obtained by taking the average of the income shares in the top two deciles (implicitly assuming that individuals are distributed evenly over the deciles) and

- multiplying by average income times ten. This yields a an estimate of IKr 3 100 000, a similar calculation for the bottom decile generates an estimate of IKr 355 000; thus, a ratio of nearly nine.
83. Excluding agriculture (53 per cent) and senior officials and managers (71 per cent), unionisation rates range between 75 per cent and 95 per cent among industries and 80 per cent and 92 per cent among occupations.
 84. The Treasury's *Treasury Finances 1994-1995* stated that one-quarter of 1994's IKr 4 billion overrun reflected additional spending owing to the 1994 wage round. *Treasury Finances 1995-1996* stated that over half of 1995's IKr 4 billion spending overrun was due to the 1995 wage agreements. For 1996, the Treasury stated that concessions made during the wage round would be offset by future cuts. A portion of the increase was for public-sector salaries and a portion was on other expenditures.
 85. See OECD (1991*b*). The wage equations shown there, however, have not remained stable. First, wages react more slowly to changes in the CPI than before. Second, the Phillips curve relationship between real wages and the unemployment rate seems to have flattened significantly in the 1990s, implying less sensitivity of pay to labour market slack than in the 1980s (see Chapter I).
 86. Until this year, interest income was exempt from tax (see Chapter II), and there are tax credits for investing in equities which the government proposes to abolish.
 87. A description of major changes to the public sector plans is presented in Chapter II.
 88. Negotiated minimum wages, including lump-sum payments, averaged IKr 57 400 in 1996.
 89. For example, in 1995 there were over 1 100 work permits (required for non-EEA workers) of which 400 were new permits. Of the new permits the most common industries were fish processing (130), sport (47), commerce (31). The three largest countries of origin were Poland, the Philippines and Thailand.
 90. As an indication, 19 per cent of the registered unemployed do not meet the labour market survey's definition of being in the labour force.
 91. This led to sharp reductions in premiums for automobile insurance and boat insurance when foreign firms entered the market.
 92. The current criterion could be fulfilled in only 34 weeks of 50 hours per week.

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Annex

Calendar of main economic events

1995

February

The Icelandic Federation of Labour Unions and the Confederation of Icelandic Employers conclude new wage agreement through 1996. Wages of 6.9 per cent to 14.5 per cent are granted, with the largest increases at the low end of the wage scale. The deal is concluded after the government agrees to phase out taxation of employee pension contributions and boost spending.

March

Central Bank raises repo rate and discount rate.

April

The consumer price index replaces the credit terms index in calculating indexation adjustments of financial obligations.

May

There is a 22-day strike by fishermen concerning the price of the catch and, thus, payments to fishermen.

Treasury begins issuing 3-year non-indexed Treasury notes.

June

New regulations restrict the indexation of deposits and loans. Beginning 1 January 1996, indexed loans must have a minimum maturity of three years and beginning 1 January 1998, indexed deposits must be tied for at least three years and the minimum maturity for loans will be lengthened to five years.

July

Government sets cod quota at 155 000 tonnes, unchanged from previous year. Quotas on other species, especially deep-sea redfish, are reduced.

Central Bank lowers discount rate and repo rate by 0.3 percentage points to 6.1 per cent and 7.0 per cent, respectively.

September

The Central Bank, in consultation with the Government, decides to widen the exchange rate band to ± 6 per cent around a central rate rather than $\pm 2\frac{1}{4}$ per cent. The weights of the exchange rate index are altered to include 16 trading partners according to the pattern of trade flows.

Central Bank lowers discount rate to 5.6 per cent.

Treasury begins issuing 5-year non-indexed bonds.

October

The government proposes a 1996 budget that is projected to reduce the budget deficit to IKr 4 billion in 1996 through spending restraint. It is based on real GDP growth of 2 per cent.

November

The expansion of the existing 100 000 tonne aluminium smelter by 60 per cent is announced.

The joint employers' and unions' wage committee confirm that the assumptions behind the wage negotiations had mostly held and it is agreed that a one-time bonus payment in December be increased and the Government agrees to accelerate the schedule of making pension contributions tax deductible.

December

Central Bank raises interest rates on Treasury bills in the money market by 0.3 percentage points.

Budget is passed by the Althing with IKr 4 billion deficit, but with IKr 1 billion more in revenues and expenditures.

1996

March

Standard and Poor's upgrades its rating on Iceland's foreign currency debt.

April

Moody's Investors Services announces that it would upgrade Iceland's credit rating.

Central Bank reduces short-term interest rates by $\frac{3}{4}$ percentage point.

The Industrial Relations Act is modified.

June

The cod quota is increased to 186 000 tonnes. Iceland reaches agreement with Norway, Russia and Faroe Islands for quotas of the Norwegian spring-spawning herring.

August

Responsibility for primary schools is transferred from the central government to the municipalities.

September

Central Bank raises discount rate by 0.4 percentage points to 6.0 per cent and other short-term rates rise similarly. The monthly liquidity ratio for deposit money banks is raised to 12 per cent.

October

The government proposes to eliminate the cash deficit and run a small surplus through expenditure restraint. The budget is based on 2.5 per cent real GDP growth and 2.4 per cent growth of the GDP deflator.

December

Budget passes the Althing; the major modification is the inclusion of public employee pension reform. Pensions are to be fully funded as government contribution rates rise from 6 to 11.5 per cent and the base is shifted from daytime to total earnings.

Agreement reached with Norway, Russia, the Faroe Islands and the European Union on the allocation of total allowable catch for the Atlantic-Scandian herring stock. Iceland was allocated 15.7 per cent for 1997, down from 17.1 per cent in 1996, in order to make room for a new EU allocation. But with a 34 per cent increase in the global catch quota,

that smaller share still represents a 23 per cent increase in tonnage. Some marine biologists are critical of the sharp rise for neglecting conservation objectives.

1997

March

Wage negotiations came to a head. Most non-bank private-sector employees sign agreements which are for three years and provide for increases in base wages of 4.7 per cent on signing and a total of around 13 per cent. In addition, minimum wages are to rise substantially, reaching IKr 70 000 (over \$1 000) per month in most cases as from 1 January 1998. For its part the government offers a major personal tax reduction to help secure the agreements. The main feature is that personal income tax rate will be cut by 4 percentage points in three annual steps, the first of which is 1 January 1997. The overall cost is estimated to be IKr 5 billion per year when implementation is complete in 1999.

Ferrosilicon plant expansion agreed to in a deal which would give its Norwegian minority owner (rather than the Icelandic State) control of the company.

Iceland signs WTO Information Technology Agreement along with 38 other nations.

Legislation is submitted to the Althing to change the two state-owned banks into limited liability companies, to merge several existing investment credit funds in order to form a state-owned investment bank as from 1 January 1998 and to create a new venture capital fund.

Unemployment Benefit Act is passed. It establishes a central Public Employment Agency, fixes a maximum duration of five years for benefits and requires job seekers to sign a contract with the Agency within 10 weeks or face loss of benefits.

STATISTICAL ANNEX AND STRUCTURAL INDICATORS

Table A. **Supply and use of resources**

IKr. million, current prices

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Private consumption	99 196	133 557	161 068	190 254	223 729	248 999	249 044	248 952	257 461	274 195	298 734
Public consumption	28 776	38 981	50 537	60 341	69 989	78 157	80 375	84 818	89 424	94 080	101 860
Gross fixed asset formation	30 911	42 639	50 498	58 698	70 102	76 153	69 554	64 176	65 877	65 951	84 934
Expenditure on final domestic use	158 883	215 177	262 103	309 293	363 820	403 309	398 973	397 946	412 762	434 226	485 528
Change in stocks of export products	-3 748	-3 783	-3 085	-8 143	-4 256	-901	-445	1 127	8	2 374	-1 028
National expenditure	155 135	211 394	259 018	301 150	359 564	402 408	398 528	399 073	412 770	436 600	484 501
Exports of goods and services	61 961	71 681	81 721	106 282	124 246	124 943	121 248	134 875	156 478	160 019	175 159
Imports of goods and services	55 880	73 965	84 100	99 240	119 595	130 305	121 943	122 466	134 631	144 725	173 550
Gross domestic product (market prices)	161 216	209 110	256 639	308 192	364 215	397 046	397 833	411 482	434 617	451 894	486 110
Net income from abroad	-5 302	-4 799	-6 506	-11 164	-12 401	-12 686	-11 305	-11 857	-12 836	-11 555	-10 268
Gross national product	155 914	204 311	250 133	297 028	351 814	384 360	386 528	399 625	421 781	440 339	475 842
Depreciation	19 696	23 473	29 001	37 267	43 814	48 346	51 425	54 579	56 746	57 757	59 841
Net national product (market prices)	136 218	180 838	221 132	259 761	308 000	336 014	335 103	345 046	365 035	382 582	416 001
Indirect taxes	35 823	48 320	61 324	72 152	79 167	83 943	83 714	77 009	79 004	82 373	88 010
Subsidies	5 273	5 988	9 107	12 835	12 953	12 319	13 225	10 504	9 607	9 492	10 087
Net national income	105 668	138 506	168 915	200 444	241 786	264 390	264 614	278 541	295 638	309 701	338 078

Sources: National Economic Institute and Central Bank of Iceland.

Table B. **Supply and use of resources**

IKr. million, constant 1990 prices

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Private consumption	207 879	241 505	232 327	222 643	223 729	232 978	222 610	212 761	216 494	226 370	241 071
Public consumption	58 394	62 205	65 108	67 071	69 989	72 192	71 579	73 240	75 936	76 923	78 846
Gross fixed asset formation	62 320	74 009	73 863	68 054	70 102	71 533	63 442	56 229	55 638	54 061	66 773
Expenditure on final domestic use	328 593	377 719	370 364	354 142	363 820	376 703	357 631	342 230	348 068	357 354	386 690
Change in stocks of export products	-6 860	-5 579	-55	7	-4 556	1 126	34	925	136	2 528	50
National expenditure	321 733	372 140	370 309	354 149	359 264	377 829	357 666	343 155	348 204	359 881	386 740
Exports of goods and services	121 271	125 238	120 725	124 278	124 246	117 090	115 091	122 636	134 753	131 601	144 592
Imports of goods and services	112 194	138 303	131 957	118 422	119 595	126 226	116 400	106 338	110 762	114 930	133 353
Gross domestic product (market prices)	330 810	359 075	359 077	360 005	363 915	368 693	356 356	359 453	372 195	376 552	397 980
Gross national product (market prices)	321 846	349 988	347 743	347 489	351 814	355 501	342 956	346 021	359 156	364 912	386 753
Effect of changes in terms of trade	2 397	8 765	7 806	2 282	0	5 207	2 011	-3 586	-4 928	-3 257	-9 195
Gross national income	324 243	358 753	355 550	349 771	351 814	360 708	344 967	342 435	354 228	361 655	377 558

Note: Estimates of real income coincide with output in real terms on the assumption of unchanged terms of trade. Due to particularly strong fluctuations in Icelandic terms of trade, national expenditure in real terms may deviate substantially from real gross national product without adverse effects on the balance of payments. This is explicitly introduced in the Icelandic national accounts, as shown above. The item "Effect of changes in the terms of trade" equals the external purchasing power of export earnings (nominal exports deflated by a price index for imports) minus the volume of exports of goods and services.

Source: National Economic Institute.

Table C. **Production and employment**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Fisheries and fish processing											
Output											
(volume change over previous year)	8.1	10.1	4.9	-0.2	-2.3	-1.1	-2.2	-2.0	6.0	5.3	-4.9
Export production											
Value (IKr million)	23 937	34 627	40 322	43 819	56 812	69 897	73 236	69 881	74 571	85 538	86 694
Fishing fleet: ¹											
Trawlers (GRT)	50 844	50 569	51 380	54 086	52 830	49 912	47 493	42 645	43 031	60 265	
Motor boats (GRT)	61 750	61 822	66 072	65 521	63 181	59 366	52 500	47 317	47 317	62 894	
Total (GRT)	112 594	112 391	117 452	119 607	116 011	109 278	99 993	89 962	86 249	123 167	
Employment (man-years)	15 728	16 064	16 788	15 145	14 893	14 539	14 303	13 023	13 744	13 739	14 715
Agriculture											
Output											
(volume change over previous year)	4.1	-1.8	2.1	-7.1	0.3	-1.8	-2.1	-2.8	2.1	2.4	2.5
Export production											
Value (IKr million)	597	690	1 015	997	1 288	1 765	1 657	1 449	1 795	2 127	2 060
Employment (man-years)	7 420	7 374	7 147	6 470	6 399	6 873	6 709	6 514	5 859	5 621	5 288
Electricity generation											
Installed capacity (MW)	921.3	922.4	921.9	923.0	928.5	912.8	936.9	1 039.0	1 043.6	1 050.3	1 048.9
Output (GWh)	3 837.4	4 057.8	4 152.0	4 415.9	4 475.2	4 447.2	4 426.7	4 540.5	4 720.8	4 773.9	4 976.8
Manufacturing (excluding fish processing)											
Output											
(volume change over previous year)	2.9	2.7	9.3	-5.1	-3.6	-3.1	2.2	-5.0	-3.3	5.3	4.3
Export production											
Value (IKr million)	7 776	8 794	10 059	13 677	19 460	18 742	15 927	15 131	16 999	21 089	25 006
<i>of which:</i>											
Aluminium	3 472	4 042	4 761	6 705	10 146	9 629	8 222	7 996	8 428	10 631	12 492
Diatomite	289	284	296	348	416	522	406	422	379	532	667
Ferro-silicon	1 267	1 352	1 195	2 203	2 899	2 180	1 637	1 691	2 413	2 451	3 254
Employment (man-years)	17 620	17 740	18 439	17 057	16 195	15 903	15 586	14 776	13 850	13 611	13 548

1. Including whale catchers, excluding open boat; stock at end of year.

Source: National Economic Institute and Central Bank of Iceland.

Table D. **Gross fixed asset formation and national wealth**

IKr million, current prices

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996 ¹
Gross fixed asset formation, total	42 639	50 499	58 699	70 102	76 152	69 554	64 177	65 875	65 951	84 934
Classification by end-use:										
Industrial asset formation	27 452	29 402	32 470	38 611	42 274	36 075	28 932	30 578	33 577	50 749
Agriculture	1 653	1 593	1 584	1 536	1 923	1 583	1 883	1 806	1 607	2 100
Fishing	4 952	6 788	4 216	2 711	2 911	5 950	2 146	3 471	1 546	4 900
Fish processing	1 440	1 509	1 265	1 730	1 413	1 408	1 679	2 429	3 166	4 000
Manufacturing other than fish processing	4 261	4 671	5 865	5 387	6 642	5 432	5 419	5 347	6 114	13 060
Electricity, heating and water supply	2 107	3 532	5 443	6 526	7 101	3 857	3 513	3 044	3 497	5 200
Various machinery and equipment for construction	1 165	1 305	1 377	1 744	2 473	1 562	1 528	1 274	1 749	2 590
Trade, restaurants and hotels	4 770	4 190	4 700	4 721	4 330	4 397	3 884	3 548	3 850	4 500
Transport and storage	3 809	2 559	5 280	10 941	11 348	7 387	3 952	2 825	4 642	5 100
Communications	1 116	752	905	1 003	1 466	1 854	2 036	2 909	2 659	3 000
Computers and office equipment	2 180	2 502	1 835	2 312	2 668	2 646	2 892	3 925	4 747	6 299
Residential construction	9 303	12 586	15 936	18 666	19 104	18 912	18 212	18 667	17 338	18 935
Public works and buildings	5 884	8 510	10 293	12 825	14 775	14 568	17 033	16 630	15 036	15 250
Public buildings	3 401	5 026	6 344	7 970	8 800	8 770	9 300	9 100	8 800	8 700
National wealth	604 337	738 023	934 180	1 114 086	1 219 677	1 269 282	1 324 159	1 377 789	1 424 551	1 502 171
Industrial sector	284 561	348 083	441 081	503 633	546 392	564 538	587 184	606 675	617 552	648 620
Private sector ²	220 167	265 465	334 786	403 167	442 068	460 342	476 819	495 127	514 883	546 099
Public works and buildings	99 609	124 475	158 313	207 286	231 217	244 402	260 156	275 987	292 116	307 452

1. Provisional data.

2. Residential housing.

Source: National Economic Institute.

Table E. **Gross fixed asset formation and national wealth**

Volume indices, 1990 = 100

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996 ¹
Gross fixed asset formation, total	105.58	105.36	97.08	100.00	102.04	90.50	80.21	79.37	77.12	95.25
Classification by end-use:										
Industrial asset formation	85.20	97.85	100.57	100.00	95.12	91.94	86.65	86.66	78.10	81.22
Agriculture	188.76	150.19	113.52	100.00	120.73	94.80	106.61	97.23	81.64	104.69
Fishing	319.45	369.98	182.06	100.00	101.53	201.83	66.46	100.25	44.85	134.66
Fish processing	140.73	123.53	82.80	100.00	77.67	74.45	83.52	115.31	147.24	181.13
Manufacturing other than fish processing	135.93	126.21	125.34	100.00	116.83	92.37	85.67	80.13	89.40	186.44
Electricity and heating	51.38	75.03	96.44	100.00	101.07	50.80	43.98	37.62	41.74	61.98
Water supply	72.75	82.32	77.39	100.00	110.60	82.30	82.84	66.21	76.02	80.83
Various machinery and equipment for construction	85.39	97.76	80.22	100.00	135.94	82.53	72.52	56.21	76.37	109.81
Trade, restaurants and hotels	157.21	117.22	106.74	100.00	85.24	84.52	73.06	65.13	68.47	77.68
Transport and storage	61.51	36.07	56.30	100.00	98.80	61.84	31.29	22.03	34.33	36.29
Communications	182.32	105.59	101.34	100.00	135.79	167.67	173.87	236.29	211.66	231.77
Computers and office equipment	156.69	143.96	80.56	100.00	110.61	105.45	103.53	130.58	156.35	201.34
Residential construction	85.20	97.85	100.57	100.00	95.12	91.94	86.65	86.66	78.10	81.22
Public works and buildings	84.61	102.56	101.37	100.00	107.26	103.45	118.33	112.72	98.71	97.35
Public buildings	78.29	98.22	100.64	100.00	102.61	99.85	103.62	98.94	92.70	88.96
National wealth	92.41	95.48	97.70	100.00	102.34	103.85	104.65	105.41	106.05	107.84
Industrial sector	92.99	96.40	98.05	100.00	102.05	102.55	101.38	100.35	99.79	101.74
Private sector ²	93.35	95.55	97.82	100.00	101.90	103.61	105.03	106.42	107.37	108.45
Public works and buildings	88.78	92.70	96.44	100.00	103.90	107.45	111.83	115.75	118.69	121.47

1. Preliminary data.

2. Residential housing.

Source: National Economic Institute.

Table F. **Central government and social security income and expenditure**

Kr million, accruals basis

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Current revenue	44 603	57 907	78 168	93 986	106 139	119 375	121 734	119 048	124 974	130 530
Direct taxes	9 080	10 184	18 395	22 387	29 267	38 199	39 345	39 763	42 778	46 837
Indirect taxes	31 193	42 468	53 460	62 665	69 562	72 601	72 143	70 105	71 816	74 148
Other	4 330	5 255	6 313	8 934	7 310	8 575	10 246	9 180	10 380	9 545
Current expenditure	39 530	51 855	72 193	88 912	103 880	113 545	116 743	119 301	123 304	131 065
Public consumption	22 534	30 838	39 603	46 843	54 864	60 537	60 696	63 445	65 925	70 011
Interest expenditure	3 931	4 340	7 174	9 685	11 370	12 962	12 875	13 678	14 795	16 499
Current transfers and subsidies	13 065	16 677	25 416	32 384	37 646	40 046	43 172	42 178	42 584	44 555
Current balance	5 073	6 052	5 975	5 074	2 259	5 830	4 991	-253	1 670	-535
Capital revenue	880	1 234	1 492	1 714	1 976	2 346	2 330	2 448	2 669	2 825
Capital transfers	169	371	474	469	468	610	517	531	688	729
Consumption of fixed capital	711	863	1 018	1 245	1 508	1 736	1 813	1 917	1 981	2 096
Capital expenditure	12 362	8 847	12 481	19 041	16 540	19 186	16 828	15 892	18 144	14 239
Gross fixed investment	1 874	3 078	3 972	4 445	6 338	7 100	6 434	8 025	8 290	7 316
Capital transfers	10 488	5 769	8 509	14 596	10 202	12 086	10 394	7 866	9 854	6 923
Capital balance	-11 482	-7 613	-10 989	-17 327	-14 564	-16 840	-14 498	-13 444	-15 475	-11 414
Financial balance	-6 409	-1 561	-5 014	-12 253	-12 305	-11 010	-9 507	-13 697	-13 805	-11 949
Net increase in claims	-3 340	3 523	3 839	707	-1 053	5 827	-1 934	-780	1 604	3 582
Borrowing requirement	3 068	5 087	8 852	12 961	11 249	16 836	7 574	12 917	15 408	15 533

Source: National Economic Institute.

Table G. **Fish catch, wages and prices**

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Fish catch (thousand of metric tons)												
Total	1 525	1 672	1 651	1 625	1 757	1 495	1 505	1 049	1 575	1 716	1 555	1 609
Demersal species	564	585	632	684	698	692	673	655	585	585	558	511
Herring	50	49	66	75	93	97	90	79	123	117	130	110
Capelin	865	993	895	804	911	653	694	260	798	941	754	716
Crustaceans	43	44	55	55	42	40	44	50	61	70	85	93
Wages and prices (indices 1990 = 100)												
Hourly wages, Federation of Labour			45.5	64.4	82.1	93.3	100.0	108.2	114.4	115.8	116.7	121.7
Consumer price index	29.9	39.5	48.2	57.0	71.7	86.6	100.0	106.8	111.0	115.5	117.4	119.3
Credit term index	31.0	40.5	50.5	59.3	73.1	86.7	100.0	107.6	111.6	114.4	116.4	118.4
Building cost	30.2	39.9	49.7	58.5	69.0	84.9	100.0	107.6	110.2	112.6	115.5	119.2
Export price of fish products (1991 = 100) ¹												
Groundfish: frozen on shore							88.0	100.0	94.5	83.3	79.6	79.3
frozen at sea							86.8	100.0	99.6	89.0	84.1	88.4
fresh							95.0	100.0	94.5	81.0	78.3	79.1
salted							89.9	100.0	95.3	74.8	76.7	79.7
Fish meal and oil							92.1	100.0	98.1	84.8	84.1	99.3

1. The index shows the development of export prices (f.o.b.) in terms of SDRs.

Source: National Economic Institute and Central Bank of Iceland, Economic Statistics.

Table H. **Foreign trade, total and by area**

US\$ million, monthly rates

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Total imports, c.i.f.	78.6	69.1	70.3	75.5	93.1	131.9	133.6	116.7	138.7	143.0	140.4	112.4	122.7	146.3
OECD countries	67.6	59.8	61.6	67.1	84.4	121.5	124.1	107.1	126.6	132.0	130.1	103.4	113.0	133.4
EU	48.0	41.5	44.2	48.3	60.9	84.1	85.0	72.6	83.4	89.5	81.3	65.2	71.6	87.4
Other Europe	6.9	6.5	5.8	6.8	8.0	13.6	15.8	11.4	10.4	10.7	22.8	16.9	20.2	19.4
USA	6.6	5.4	4.8	5.1	6.5	9.4	10.1	13.0	19.7	14.8	11.6	10.5	10.9	12.3
Eastern Europe	7.5	7.4	6.7	6.3	5.6	6.1	5.2	5.4	7.4	5.3	2.7	0.2	0.4	1.2
Non-oil developing countries	3.4	1.9	2.0	2.1	3.0	4.4	4.3	4.2	4.7	5.7	7.6	8.7	9.1	11.5
Total exports, f.o.b.	57.2	62.5	61.9	67.8	91.2	114.3	119.5	116.7	132.6	129.1	127.3	116.4	135.3	151.3
OECD countries	49.2	53.0	55.4	61.6	84.2	106.5	110.5	106.2	123.7	123.7	121.6	110.7	130.5	143.3
EU	29.5	29.0	31.3	35.4	53.5	69.9	74.3	69.6	93.8	89.0	90.8	72.0	83.3	94.9
Other Europe	2.8	4.2	3.8	4.2	6.2	6.4	10.3	11.1	8.1	7.5	6.1	8.3	6.4	8.5
USA	14.8	17.7	17.6	18.3	19.8	20.9	16.2	16.4	13.1	16.1	14.4	18.5	19.6	18.7
Eastern Europe	4.5	4.8	5.3	4.7	4.0	4.3	4.4	4.2	3.4	0.8	0.5	0.1	0.1	0.3
Non-oil developing countries	1.2	1.6	1.1	1.4	1.4	1.7	3.2	5.8	4.7	3.7	4.2	4.6	3.8	7.0

Source: Central Bank of Iceland and OECD, Foreign Trade Statistics, Series A.

Table I. Foreign trade by commodity group

US\$ million

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Imports														
Total	941.5	815.2	821.3	904.0	1 115.3	1 581.3	1 590.3	1 395.0	1 654.6	1 738.8	1 681.8	1 406.9	1 472.2	1 757.4
Transport equipment, SITC 78-79	87.5	58.4	65.4	60.7	135.4	268.4	266.8	183.8	260.8	220.7	246.3	124.1	151.1	187.1
Other imports	854.0	756.9	755.9	843.2	979.9	1 313.0	1 323.5	1 211.2	1 393.8	1 518.1	1 435.5	1 282.7	1 321.1	1 570.3
Food and live animals, SITC 0	76.1	72.9	69.5	72.0	85.2	99.8	106.6	110.7	122.5	126.8	127.5	132.4	137.8	168.9
Manufactured goods, SITC 6	182.3	156.7	149.8	163.2	211.1	275.6	286.4	256.6	275.4	305.7	278.6	249.5	251.5	298.3
Machinery and apparatus, SITC 71-77	169.1	139.0	155.9	185.0	233.3	337.9	318.2	263.1	319.9	371.9	332.2	285.1	313.4	381.8
Other goods	426.5	388.3	380.7	423.1	450.4	599.7	612.2	580.8	676.0	713.7	697.2	615.7	618.4	721.2
Exports														
Total	684.9	749.2	722.2	813.8	1 094.8	1 370.4	1 431.1	1 400.9	1 590.7	1 571.4	1 527.8	1 456.2	1 613.8	1 802.0
Fish products, total	507.9	506.7	500.2	609.3	843.8	1 044.5	1 016.9	994.3	1 197.7	1 239.5	1 213.0	1 105.2	1 213.1	1 295.0
Frozen fish fillets	220.0	245.9	222.3	261.5	320.7	381.8	367.1	398.2	522.5	589.9	569.8	521.6	508.4	504.3
Herrings, salted	17.7	18.3	24.5	21.2	18.0	21.7	24.6	21.8	26.0	14.8	11.1	8.8	11.9	12.0
Herring and capelin meal	8.5	1.9	42.3	44.4	57.0	50.9	75.1	63.1	53.9	20.4	72.8	72.9	63.3	72.5
Agricultural products	9.0	9.1	13.9	13.1	16.9	26.1	24.8	23.9	30.5	27.5	28.3	24.0	30.5	31.7
Aluminium products	68.0	130.9	108.2	80.5	100.5	131.6	153.8	180.1	164.3	136.7	139.8	122.4	154.9	190.0
Other manufactured products	82.7	87.4	99.4	102.1	115.7	144.4	167.0	164.8	159.8	133.3	122.7	122.5	145.9	196.0

Source: Central Bank of Iceland and OECD, Foreign Trade Statistics, Series C.

Table J. Money and credit

IKr. million, end of period

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Central Bank														
Penalty rates (annual rate), per cent ¹	58.2	31.5	44.0	30.5	35.9	43.9	35.9	26.0	25.0	19.5	17.7	14.2	14.6	15.8
Net position of government	852	1 159	3 147	2 806	5 550	9 117	8 237	3 594	8 748	1 551	4 444	13 849	12 300	3 695
Money supply														
M1 ²	3 700	5 299	6 662	9 682	12 750	14 853	19 725	24 644	29 553	29 942	31 564	34 955	38 316	42 471
M2 ³	12 372	18 666	30 126	41 368	56 902	73 271	92 548	105 731	116 697	124 391	129 905	113 725	111 109	114 293
M3 ⁴	19 902	26 575	39 135	52 940	71 602	88 802	112 998	129 802	148 436	154 101	164 127	167 918	171 656	181 580
Deposit money banks														
Required reserves and other funds with Central Bank	5 594	7 143	7 987	10 778	11 159	12 162	14 711	11 223	10 418	9 255	7 185	7 070	6 852	7 728
Demand deposits	2 941	4 354	5 436	7 991	10 562	12 302	16 750	21 586	26 314	26 350	27 658	30 315	33 807	37 033
Net liquid foreign assets	-45	283	144	461	658	1 700	2 943	2 379	3 506	3 413	5 851	6 182	2 217	3 648
Lending (excl. foreign funds relent) of deposit money banks														
Total	20 627	30 132	39 604	48 651	71 701	95 504	118 130	136 539	152 927	159 640	172 020	181 542	193 578	209 873
<i>of which to:</i>														
Agriculture	2 191	2 860	4 028	4 972	6 367	7 681	9 254	10 589	10 768	8 891	8 252	7 805	7 491	
Fishery and fish processing	5 570	8 857	8 537	7 602	11 699	17 161	19 261	17 938	19 306	19 545	20 254	19 981	26 279	
Manufacturing and commerce	5 806	8 694	12 567	15 782	22 596	28 737	34 518	36 038	40 854	41 929	41 371	41 628	41 642	
Dwellings	2 183	2 830	3 678	4 651	6 171	8 064	11 325	12 915	14 051	14 771	14 409	14 036	13 869	
Foreign exchange														
Central Bank														
net liquid foreign assets	2 603	2 160	7 640	11 273	10 536	11 919	20 005	23 412	24 066	31 053	28 639	18 786	19 259	36 025
Deposit money banks' net short-term foreign position	-3 088	-5 710	-10 022	-7 860	-11 105	-15 399	-11 512	-8 596	-10 008	-12 898	-9 288	-4 294	-8 972	-19 623

1. Annual average.
2. Notes and coins plus demand deposits.
3. M1 plus general savings deposits.
4. M2 plus time deposits.

Source: Central Bank of Iceland.

Table K. **Public sector**

	1960	1970	1980	1990	1992	1993	1994	1995
General government accounts (as a per cent of GDP)								
Current revenue	28.2	30.2	33.1	36.0	37.9	37.1	37.4	37.5
Tax revenue ¹	27.2	29.6	30.9	33.6	35.0	34.3	34.5	34.6
Interest income	..	..	1.9	1.6	1.7	1.7	1.7	1.6
Capital revenue	..	..	0.2	0.7	0.8	0.8	0.8	0.8
Total expenses	25.8	29.9	32.4	40.1	41.5	42.5	43.3	41.6
<i>of which:</i>								
Current expenditure	..	..	26.0	33.4	34.9	36.1	36.4	36.5
Current transfers	..	..	4.3	7.0	7.6	8.2	8.2	8.3
Subsidies	..	..	3.1	3.6	3.3	2.6	2.3	2.2
Capital expenditure	..	..	6.4	6.7	6.6	6.5	6.8	5.0
Gross fixed investment	..	..	3.7	4.0	4.0	4.5	4.3	3.4
Capital transfers	..	..	2.7	2.7	2.6	2.0	2.5	1.6
Tax receipts as a per cent of general government total taxes								
General government								
Direct taxes	31.5	30.9	26.9	35.2	39.7	43.6	44.2	45.4
Indirect taxes	68.5	69.1	73.1	64.8	60.3	56.4	55.8	54.6
Central government and Social Security								
Total taxes	77.5	77.2	79.8	80.9	80.3	80.4	80.9	80.5
Direct taxes	13.3	16.8	15.9	24.0	28.7	28.6	31.3	33.1
Indirect taxes	64.2	60.4	63.9	57.0	52.6	50.5	52.6	52.3
Local government								
Total taxes	22.5	22.8	20.2	19.1	19.9	19.3	19.8	20.7
Direct taxes	18.2	14.1	11.0	11.2	11.5	14.3	14.6	15.1
Indirect taxes	4.3	8.7	9.2	7.9	8.4	5.0	5.3	5.6

1. Direct and indirect taxes.

Source: National Economic Institute and Sögulegt Yfirlit Hagtalna, 1945-1988, National Economic Institute.

Table L. **Labour market**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Working age population										
15 to 64	155.1	157.5	160.7	162.8	164.1	166.3	168.1	169.4	170.9	172.0
16 to 74						173.4	174.9	177.9	178.9	179.8
Labour force										
Man-years	125.3	132.3	128.8	128.2	127.2	126.7	126.9	127.7	128.9	131.0
ILO definition						140.5	143.0	144.2	145.4	149.0
Unemployment rates¹										
Total Man-years	0.7	0.5	0.6	1.7	1.8	1.5	3.0	4.4	4.8	5.0
Total ILO definition						2.5	4.3	5.3	5.3	4.9
Males ILO definition						2.3	3.8	5.0	5.1	4.8
Females ILO definition						2.9	4.9	5.6	5.5	4.9
Employment										
Man-years	124.6	131.9	127.9	126.1	124.9	124.8	123.0	122.1	122.7	124.5
ILO definition						136.9	136.9	136.6	137.7	141.8
Participation rates¹										
Total Man-years	80.5	83.3	79.3	78.4	77.2	75.7	75.3	75.0	75.1	75.7
ILO definition						81.0	81.8	81.1	81.3	82.9
Males Man-years	94.1	96.0	91.2	90.0	87.4	86.3	85.5	85.0	84.3	85.8
ILO definition						87.4	87.6	85.9	85.8	87.7
Females Man-years	66.4	70.3	67.1	66.4	65.2	64.2	64.0	64.0	64.9	65.4
ILO definition						74.6	75.8	76.1	76.7	77.9
Work stoppages										
Man-days lost	1 071	98 527	100 773	79 970	231	3 413	385	120	97 343	217 186
% of total working time	0.00	0.29	0.30	0.24	0.00	0.01	0.00	0.00	0.30	0.67

1. Aged 16 to 74.

Source: National Economic Institute.

*BASIC STATISTICS:
INTERNATIONAL COMPARISONS*

BASIC STATISTICS: INTERNATIONAL COMPARISONS

	Units	Reference period ¹	Australia	Austria	Belgium	Canada	Denmark	Finland	France	Germany	Greece
Population											
Total	Thousands	1994	17 840	8 031	10 124	29 251	5 206	5 088	57 960	81 407	10 430
Inhabitants per sq. km	Number	1994	2	96	332	3	121	15	106	228	79
Net average annual increase over previous 10 years	%	1994	1.4	0.6	0.3	1.6	0.2	0.4	0.5	2.9	0.5
Employment											
Total civilian employment (TCE) ²	Thousands	1994	7 680 (93)	3 737	3 724 (92)	13 292	2 508	2 015	21 781 (93)	35 894	3 790
of which: Agriculture	% of TCE	1994	5.3 (93)	7.2	2.6 (92)	4.1	5.1	8.3	5.1 (93)	3.3	20.8
Industry	% of TCE	1994	23.7 (93)	33.2	27.7 (92)	22.6	26.8	26.8	27.7 (93)	37.6	23.6
Services	% of TCE	1994	71 (93)	59.6	69.7 (92)	73.3	68.1	64.9	67.2 (93)	59.1	55.5
Gross domestic product (GDP)											
At current prices and current exchange rates	Bill. US\$	1994	331.6	198.1	227.9	544	146.7	97.2	1 328.5	1 832.3	73.1 (93)
Per capita	US\$	1994	18 588	24 670	22 515	18 598	28 181	19 106	22 944	27 826	7 051 (93)
At current prices using current PPP's ³	Bill. US\$	1994	327.9	162.3	204.2	596.7	107	82.5	1 111.8	1 601.7	118
Per capita	US\$	1994	18 382	20 210	20 166	20 401	20 546	16 208	19 201	24 325	1 450
Average annual volume growth over previous 5 years	%	1994	2.2	2.5	1.6	1.1	1.9	-1.6	1.1	2.6	1.4 (93)
Gross fixed capital formation (GFCF)											
of which: Machinery and equipment	% of GDP	1994	21.4	24.8	17.4	18.7	14.8	14.3	18.1	18.5	17.4 (93)
Residential construction	% of GDP	1993	9.8	8.7	7.8	6.2	7.2	5.90	8.10	7.5	7.8
Average annual volume growth over previous 5 years	%	1994	0.8	3.7	0.4	-0.1	-2.8	-12.9	-1	0.8	2.7 (93)
Gross saving ratio⁴											
	% of GDP	1994	16.8	25.3	22	16	17	16.6	19	21	15.5 (93)
General government											
Current expenditure on goods and services	% of GDP	1994	17.5	18.8	15	20.2	25.3	22.4	19.6	17.7	19.1 (93)
Current disbursements ⁵	% of GDP	1993	36.9	48.4	55.3	49	61.1	58.9	51.5	45.6	51.2
Current receipts	% of GDP	1993	33.5	48.6	50.1	43	58.3	52.5	46.8	45.7	40.2
Net official development assistance											
	% of GNP	1993	0.34	0.31	0.41	0.46	1.03	0.76	0.66	0.44	..
Indicators of living standards											
Private consumption per capita using current PPP's ³	US\$	1993	10 803	10 546	12 090	11 863	10 042	8 814	11 395	10 733	6 367
Passenger cars, per 1 000 inhabitants	Number	1990	430	382	387	469	311	386	413	480 ⁸	169
Telephones, per 1 000 inhabitants	Number	1991	464	432	410	586	577	544	511	420 ⁸	413
Television sets, per 1 000 inhabitants	Number	1991	480	478	451	639	536	501	407	556 ⁸	197
Doctors, per 1 000 inhabitants	Number	1993	2.2 (91)	2.3	3.7	2.2	2.8 (92)	2.6 (92)	2.8	3.2 (92)	3.8 (92)
Infant mortality per 1 000 live births	Number		6.1	6.5	8	6.8	5.4	4.4	6.5	5.8	8.5
Wages and prices (average annual increase over previous 5 years)											
Wages (earnings or rates according to availability)	%	1994	3	5.5	3.7	3.3	3.5	4.8	3.5	5.2	14.6
Consumer prices	%	1994	3	3.4	2.8	2.8	2.1	3.3	2.5	3.3	16.2
Foreign trade											
Exports of goods, fob*	Mill. US\$	1994	47 363	44 881	137 259 ⁷	165 358	41 850	29 514	235 337	422 243	8 958
As % of GDP	%	1994	14.3	22.7	60.2	30.4	28.5	30.4	17.7	23	11.5 (93)
Average annual increase over previous 5 years	%	1994	5	6.7	6.5	7.1	8.3	4.9	5.6	4.4	3.4
Imports of goods, cif*	Mill. US\$	1994	49 731	55 071	126 006 ⁷	148 297	35 932	23 091	220 508	376 566	21 111
As % of GDP	%	1994	15	27.8	55.3	27.3	24.5	23.8	16.6	20.6	30.1 (93)
Average annual increase over previous 5 years	%	1994	4	7.2	5	5.4	6.1	-1.3	3.5	6.9	5.4
Total official reserves⁶											
As ratio of average monthly imports of goods	Ratio	1994	7 730	11 523	9 505 ⁷	8 416	6 203	7 304	17 986	52 994	9 924
		1994	1.9	2.5	0.9	0.7	2.1	3.8	1	1.7	5.6

* At current prices and exchange rates.

1. Unless otherwise stated.

2. According to the definitions used in OECD *Labour Force Statistics*.

3. PPPs = Purchasing Power Parities.

4. Gross saving = Gross national disposable income minus private and government consumption.

5. Current disbursements = Current expenditure on goods and services plus current transfers and payments of property income.

6. Gold included in reserves is valued at 35 SDRs per ounce. End of year.

7. Data refer to the Belgo-Luxembourg Economic Union.

8. Data refer to western Germany.

9. Refers to the public sector including public enterprises.

10. Including non-residential construction.

Sources: Population and Employment: OECD, *Labour Force Statistics*. GDP, GFCF, and General Government: OECD, *National Accounts*, Vol. I and *OECD Economic Outlook*, Historical Statistics. Indicators of living standards: Miscellaneous national publications. Wages and Prices: OECD, *Main Economic Indicators*. Foreign trade: OECD, *Monthly Foreign Trade Statistics*, series A. Total official reserves: IMF, *International Financial Statistics*.

BASIC STATISTICS: INTERNATIONAL COMPARISONS (cont'd)

	Units	Reference period ¹	Iceland	Ireland	Italy	Japan	Luxembourg	Mexico	Netherlands	New Zealand
Population										
Total	Thousands	1994	267	3 571	57 190	124 960	398	93 010	15 382	3 526
Inhabitants per sq. km	Number	1994	3	51	190	331	153	47	377	13
Net average annual increase over previous 10 years	%	1994	1.1	0.1	0	0.4	0.8	2	0.6	0.8
Employment										
Total civilian employment (TCE) ²	Thousands	1994	138	1 168 (93)	20 152 (93)	64 530	162 (91)	32 439	6 631	1 560
of which: Agriculture	% of TCE	1994	9.4	12.7 (93)	7.5 (93)	5.8	3.7 (91)	25.8	4	10.4
Industry	% of TCE	1994	26.1	27.7 (93)	33 (93)	34	31.5 (91)	22.2	23	25
Services	% of TCE	1994	65.2	59.7 (93)	59.6 (93)	60.2	64.8 (91)	52.1	73	64.6
Gross domestic product (GDP)										
At current prices and current exchange rates	Bill. US\$	1994	6.2	52	1 017.8	4 590	10.6 (92)	371.2	334.3	51.2
Per capita	US\$	1994	23 199	14 550	17 796	36 732	27 073 (92)	3 991	21 733	14 513
At current prices using current PPP's ³	Bill. US\$	1994	5.1	54.3	1 068.4	2 593.7	11.7	673.3	285.9	57.3
Per capita	US\$	1994	19 271	15 212	18 681	20 756	29 454	7 239	18 589	16 248
Average annual volume growth over previous 5 years	%	1994	0.6	4.7	1	2.1	4.1 (92)	3	2.3	2.5
Gross fixed capital formation (GFCF)										
of which: Machinery and equipment	% of GDP	1994	15.2	15.1	16.4	28.6	20.4 (93)	20.7	19.3	20
Residential construction	% of GDP	1993	3.9	6.3	7.4	11.5	..	9.4	8.6	9.3
Average annual volume growth over previous 5 years	%	1994	4.4	4.1	5.3	5.4	..	4.9	5.1	4.9
	%	1994	-4	1	-2.3	1.4	6.5 (92)	7.7	0.4	5.8
Gross saving ratio⁴										
	% of GDP	1994	16.9	19.5	18.8	31.2	60.2 (92)	15.1	24.4	20.7
General government										
Current expenditure on goods and services	% of GDP	1994	20.6	16	17.1	9.8	17.1 (92)	11.8 ⁹	14.2	14.7
Current disbursements ⁵	% of GDP	1993	34.9	..	53.2	26.9	..	..	55.4	..
Current receipts	% of GDP	1993	35.9	..	47.1	32.9	..	..	54.5	..
Net official development assistance										
	% of GNP	1993	..	0.15	0.42	0.27	0.34 (92)	..	0.88	0.22
Indicators of living standards										
Private consumption per capita using current PPP's ³	US\$	1993	11 546	7 750	11 029	11 791	15 545	4 853	10 726	9 266
Passenger cars, per 1 000 inhabitants	Number	1990	464	228	478	282	470	85	356	440
Telephones, per 1 000 inhabitants	Number	1991	527	300	400	454	511	70	477	436
Television sets, per 1 000 inhabitants	Number	1991	319	276	421	613	267	148	485	443
Doctors, per 1 000 inhabitants	Number	1993	3	1.7 (92)	1.7 (91)	1.7 (92)	2.1 (92)	1	2.5 (90)	2
Infant mortality per 1 000 live births	Number		4.8	5.9	7.3	4.5 (92)	8.5 (92)	18	6.3	7.3
Wages and prices (average annual increase over previous 5 years)										
Wages (earnings or rates according to availability)	%	1994	..	4.6	5.9	2.4	..	5.3	3.2	2.1
Consumer prices	%	1994	6.3	2.7	5.2	2	3.1	16.1	2.8	2.5
Foreign trade										
Exports of goods, fob*	Mill. US\$	1994	1 628	34 125	189 802	396 149	..	60 882	155 084	12 169
As % of GDP	%	1994	26.3	65.7	18.6	8.6	..	16.4	46.4	23.8
Average annual increase over previous 5 years	%	1994	2.7	10.5	6.2	7.6	..	21.7	7.6	6.5
Imports of goods, cif*	Mill. US\$	1994	1 464	25 812	167 690	274 916	..	79 346	139 800	11 859
As % of GDP	%	1994	23.6	49.7	16.5	6	..	21.4	41.8	23.2
Average annual increase over previous 5 years	%	1994	0.7	8.1	1.9	5.5	..	25.5	6.1	6.1
Total official reserves⁶										
As ratio of average monthly imports of goods	Ratio	1994	201	4 189	22 102	86 214	..	4 301	23 655	2 540
	Ratio	1994	1.6	1.9	1.6	3.8	..	0.7	2	2.6

* At current prices and exchange rates.

1. Unless otherwise stated.

2. According to the definitions used in OECD *Labour Force Statistics*.

3. PPPs = Purchasing Power Parities.

4. Gross saving = Gross national disposable income minus private and government consumption.

5. Current disbursements = Current expenditure on goods and services plus current transfers and payments of property income.

6. Gold included in reserves is valued at 35 SDRs per ounce. End of year.

7. Data refer to the Belgo-Luxembourg Economic Union.

8. Data refer to western Germany.

9. Refers to the public sector including public enterprises.

10. Including non-residential construction.

Sources: Population and Employment: OECD, *Labour Force Statistics*. GDP, GFCF, and General Government: OECD, *National Accounts*, Vol. I and *OECD Economic Outlook*, Historical Statistics. Indicators of living standards: Miscellaneous national publications, Wages and Prices: OECD, *Main Economic Indicators*. Foreign trade: OECD, *Monthly Foreign Trade Statistics*, series A. Total official reserves: IMF, *International Financial Statistics*.

BASIC STATISTICS: INTERNATIONAL COMPARISONS (cont'd)

	Units	Reference period ¹	Norway	Portugal	Spain	Sweden	Switzerland	Turkey	United Kingdom	United States
Population										
Total	Thousands	1994	4 337	9 900	39 150	8 781	6 994	60 573	58 375	260 651
Inhabitants per sq. km	Number	1994	13	107	78	20	169	78	238	28
Net average annual increase over previous 10 years	%	1994	0.5	-0.1	0.2	0.5	0.7	2.1	0.3	1
Employment										
Total civilian employment (TCE) ²	Thousands	1994	1970 (93)	4 372	11 760	3 926	3 772	19 664	25 044 (93)	123 060
of which: Agriculture	% of TCE	1994	5.6 (93)	11.5	9.8	3.4	4	44.8	2.2 (93)	2.9
Industry	% of TCE	1994	23.1 (93)	32.8	30.1	25	28.8	22.2	26.2 (93)	24
Services	% of TCE	1994	71.3 (93)	55.7	60.2	71.6	67.2	33	71.6 (93)	73.1
Gross domestic product (GDP)										
At current prices and current exchange rates	Bill. US\$	1994	103.4 (93)	87	482.4	196.6	257.3	130.7	1 019.5	6 649.8
Per capita	US\$	1994	23 984 (93)	8 792	12 321	22 389	36 790	2 157	17 468	25 512
At current prices using current PPP's ³	Bill. US\$	1994	95.3	122	531.7	153	167.4	319.3	1 030.2	6 649.8
Per capita	US\$	1994	21 968	12 335	13 581	17 422	23 942	5 271	17 650	25 512
Average annual volume growth over previous 5 years	%	1994	2.1 (93)	1.4	1.5	-0.3	0.5	3.6	0.8	2.1
Gross fixed capital formation (GFCF)										
of which: Machinery and equipment	% of GDP	1994	22 (93)	25.7	19.8	13.7	22.8	24.5	15	17.2
Residential construction	% of GDP	1993	..	..	5.7	5.7	7.5	10.3	7.3	7.7
Average annual volume growth over previous 5 years	%	1994	-3.93	2.7	-1.2	-7.6	-0.4	5.1	-2.1	4.6
Gross saving ratio⁴										
	% of GDP	1994	21.9 (93)	24.2	18.8	13.7	29.3	22.5	13.5	16.2
General government										
Current expenditure on goods and services	% of GDP	1994	22.1 (93)	17.2	16.9	27.3	14.1	11.7	21.6	16.4
Current disbursements ⁵	% of GDP	1993	..	..	43.7	67.3	36.7	..	42.7	35.8
Current receipts	% of GDP	1993	1.23	0.36	40.1	59	36	..	36.8	31.7
Net official development assistance										
	% of GNP	1993	9 826	7 780	8 412	9 240	13 730	3 617	10 942	16 444
Indicators of living standards										
Private consumption per capita using current PPP's ³	US\$	1993	378	260	307	418	441	29	361	568
Passenger cars, per 1 000 inhabitants	Number	1990	515	273	340	687	603	143	445	553
Telephones, per 1 000 inhabitants	Number	1991	423	187	400	468	406	175	434	814
Television sets, per 1 000 inhabitants	Number	1991	3.2 (92)	2.9	4.1	3	3	0.9	1.5 (92)	2.3 (92)
Doctors, per 1 000 inhabitants	Number	1993	5	8.7	7.6	4.8	5.6	52.6	6.6	8.5 (92)
Infant mortality per 1 000 live births	Number		4	..	7.2	5.4	..	..	6.7	2.8
Wages and prices (average annual increase over previous 5 years)										
Wages (earnings or rates according to availability)	%	1994	2.7	9	5.6	5.7	3.9	73	4.6	3.6
Consumer prices	%	1994	34 645	17 072	73 129	61 122	70 467	18 456	205 170	512 627
Foreign trade										
Exports of goods, fob*	Mill. US\$	1994	30.9 (93)	19.6	15.2	31.1	27.4	14.1	20.1	7.7
As % of GDP	%	1994	5	6.1	10.5	3.4	6.4	9.5	6.1	7.1
Average annual increase over previous 5 years	%	1994	27 345	25 967	92 182	51 730	68 126	22 976	227 026	663 256
Imports of goods, cif ⁶	Mill. US\$	1994	23.3 (93)	29.9	19.1	26.3	26.5	17.6	22.3	10
As % of GDP	%	1994	2.9	6.6	5.2	1	3.2	37.9	2.8	7
Average annual increase over previous 5 years	%	1994	13 033	10 627	28 475	15 929	23 790	4 911	28 094	43 350
Total official reserves⁶										
	Mill. SDRs	1994	5.7	4.9	3.7	3.7	4.2	2.6	1.5	0.8

* At current prices and exchange rates.

1. Unless otherwise stated.

2. According to the definitions used in OECD *Labour Force Statistics*.

3. PPPs = Purchasing Power Parities.

4. Gross saving = Gross national disposable income minus private and government consumption.

5. Current disbursements = Current expenditure on goods and services plus current transfers and payments of property income.

6. Gold included in reserves is valued at 35 SDRs per ounce. End of year.

7. Data refer to the Belgo-Luxembourg Economic Union.

8. Data refer to western Germany.

9. Refers to the public sector including public enterprises.

10. Including non-residential construction.

Sources: Population and Employment: OECD, *Labour Force Statistics*. GDP, GFCF, and General Government: OECD, *National Accounts*, Vol. I and *OECD Economic Outlook*, Historical Statistics. Indicators of living standards: Miscellaneous national publications. Wages and Prices: OECD, *Main Economic Indicators*. Foreign trade: OECD, *Monthly Foreign Trade Statistics*, series A. Total official reserves: IMF, *International Financial Statistics*.

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