

# OECD ECONOMIC SURVEYS

**ICELAND**



OECD  
ECONOMIC  
SURVEYS  
1992-1993

**ICELAND**

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

## **ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT**

Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The original Member countries of the OECD are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries became Members subsequently through accession at the dates indicated hereafter: Japan (28th April 1964), Finland (28th January 1969), Australia (7th June 1971) and New Zealand (29th May 1973). The Commission of the European Communities takes part in the work of the OECD (Article 13 of the OECD Convention).

Publié également en français.

© OECD 1993

Applications for permission to reproduce or translate  
all or part of this publication should be made to:

Head of Publications Service, OECD  
2, rue André-Pascal, 75775 PARIS CEDEX 16, France

# Contents

<b>Introduction</b>	9
<b>I. Recent trends and projections</b>	11
The near-term outlook	19
<b>II. Economic policies</b>	22
Fiscal Policy	22
Monetary and exchange-rate policy and financial developments	27
<b>III. Medium-term problems and opportunities</b>	36
Quotas, fish stocks and some hard choices	36
Diversification	42
Saving and investment	47
The impact of the EEA	49
The increasing burden of foreign debt	51
<b>IV. Health care and other aspects of the social-security system</b>	54
Overview of the health-care system	54
Outcomes	57
Costs and financing	58
Aspects of efficiency	68
Recent and prospective reforms	72
Other aspects of the social-security system	75
<b>V. Conclusions</b>	80
Notes	85
References	89

## *Annexes*

I. A time-series estimation of the expenditure on health care in Iceland	90
II. A pooled approach to health-care spending in 24 OECD countries	93
III. Main economic events	96

<b>Statistical and structural annex</b>	99
---	----

## **Tables**

### *Text*

1. Demand and output	15
2. Saving, investment and the current account	17
3. Labour-market conditions	18
4. Short-term projections	20
5. Treasury finances	23
6. Agricultural subsidies, 1991-93	25
7. Public-sector borrowing requirement	26
8. The index of competitive position	30
9. Growth in monetary and credit aggregates	33
10. Fisheries management: quotas, landings and stocks	37
11. The future of the cod fishery: three scenarios	40
12. Profitability of the fisheries, 1983-92	41
13. Transfers of quotas between vessels, 1984-92	42
14. Commodity concentration of foreign trade in smaller OECD countries	44
15. Sectoral output, employment and productivity	46
16. Care of the elderly	55
17. Comparative health outcomes	58
18. Health-care expenditures in Iceland	61
19. Factors in increasing health expenditures in the OECD	67
20. Employment in health care	69
21. Reported public expenditure on health administration	71

22. Approximate savings from recent measures to cut health expenditures	73
23. Social-security system's current transfers, 1980-91	76

*Statistical and structural annex*

A. Supply and use of resources, current prices	100
B. Supply and use of resources, constant 1980 prices	101
C. Production and employment	102
D. Gross fixed asset formation and national wealth, current prices	103
E. Gross fixed asset formation and national wealth, constant 1980 prices	104
F. Balance of payments, OECD basis	105
G. Central government and social security income and expenditure	106
H. Fish catch, wages and prices	107
I. Foreign trade, total and by area	108
J. Foreign trade by commodity group	109
K. Money and credit	110
L. Public sector	111
M. Labour market	112

## **Diagrams**

*Text*

1. Aggregate economic performance	12
2. The fish catch	13
3. Export prices and the terms of trade	14
4. Inflation performance	19
5. Nominal and effective exchange rate of the króna	28
6. Interest-rate developments	32
7. Cod stocks and landings	36
8. Country size and the volatility of real export and consumption growth	45
9. National saving and investment rates	47
10. Long-term foreign debt and its service	52

11.	Public expenditure on nursing-home care	56
12.	Total expenditure on health, 1970-91	60
13.	Where the money goes	62
14.	Health-care expenditures: an international comparison	64
15.	Health-care prices and volumes in the OECD, 1990	65
16.	Trends in the relative price of health care, 1970-91	66

## 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 1992	262 202	Occupational distribution, 1990 (per cent):	
Net increase 1982-92, annual average (per cent)	1.1	Agriculture	4.9
		Fishing and fish processing	11.8
		Other manufacturing	12.5
		Construction, total	10.8
		Commerce	14.5
		Communications	6.7
		Services and other	38.8
			100.0

### GOVERNMENT AND PARLIAMENT

	1987	1991
Parliament, number of seats:		
Independence Party (Lib. Cons.)	18	26
Progressive Party (Agrarians)	13	13
Peoples' Alliance (Socialists, Communists)	8	9
Social Democratic Party	10	10
Citizen's Party	7	-
Women's Alliance	6	5
Other	1	-
	63	63

Last general election: April 1991

### PRODUCTION AND CAPITAL FORMATION

Gross national product in 1992:		Gross fixed capital formation in 1992:	
IKr million	368 290	IKr million	64 400
Per head, US dollars	24 385	Per cent of GNP	21.1

### FOREIGN TRADE

Exports of goods and services in 1992, per cent of GNP	33.4	Imports of goods and services in 1992, per cent of GNP	33.7
Main exports in 1991 (per cent of merchandise exports):		Imports in 1991, by use (per cent of merchandise imports):	
Fish products	80.0	Consumer goods	33.4
Aluminium	8.8	Investment goods	31.1
Other manufacturing products	8.6	Intermediate goods (excl. fuels)	27.3
Agricultural products	1.8	Fuels and lubricants	8.1
Miscellaneous	0.9		

### THE CURRENCY

Monetary unit: Krona		Currency units per US dollar, averages of daily figures:	
		Year 1992	57.6
		March 1993	65.1

*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 15th March 1993.*

•

*After revisions in the light of discussions during the review, final approval of the Survey for publication was given by the Committee on 7th April 1993.*

•

*The previous Survey of Iceland was issued in June 1992.*

## Introduction

Iceland's economy continues to experience severe difficulties. After four years of largely stagnant output, production fell sharply in 1992, and the prospects are for a further decline this year. Joblessness has become a real problem for the first time, as the unemployment rate has risen to the 5 per cent range, compared with 1½ per cent as recently as 1991. The factors which have made for this weakness in activity are not difficult to decipher. Poor cod stocks have necessitated reductions in catch quotas; foreign demand for aluminium and ferro-silicon has continued to languish, as export volumes have stagnated and prices have slid from already low levels; and the need to correct previous problems of the public finances and inflation has enforced a tight macroeconomic policy stance.

Nevertheless, there have been notable successes over the past year or so as well. Inflation was brought down to the average level of trading partners already in late 1991 and by mid-1992 was essentially eliminated. Although a further rebound in price rises is now underway, due to the recent devaluation of the króna and the effects of indirect-tax increases, it should prove short-lived. Also, the authorities have managed to follow up on their 1992 effort to bring order to the public finances after the previous year's marked widening of the Treasury deficit: despite the pronounced recession, the 1993 Budget embodies an important reduction in the fiscal imbalance. Similarly, the external deficit has shrunk, even in the face of export weakness.

However, the adjustment process is by no means complete. Prudent husbandry of marine resources will rule out any relaxation of quotas in the near future, and the implementation horizon for some major development projects has receded into the medium term. In the meantime, there is little choice but to consolidate the gains made thus far in structural reform and to pursue the planned liberalisation initiatives related to European integration.

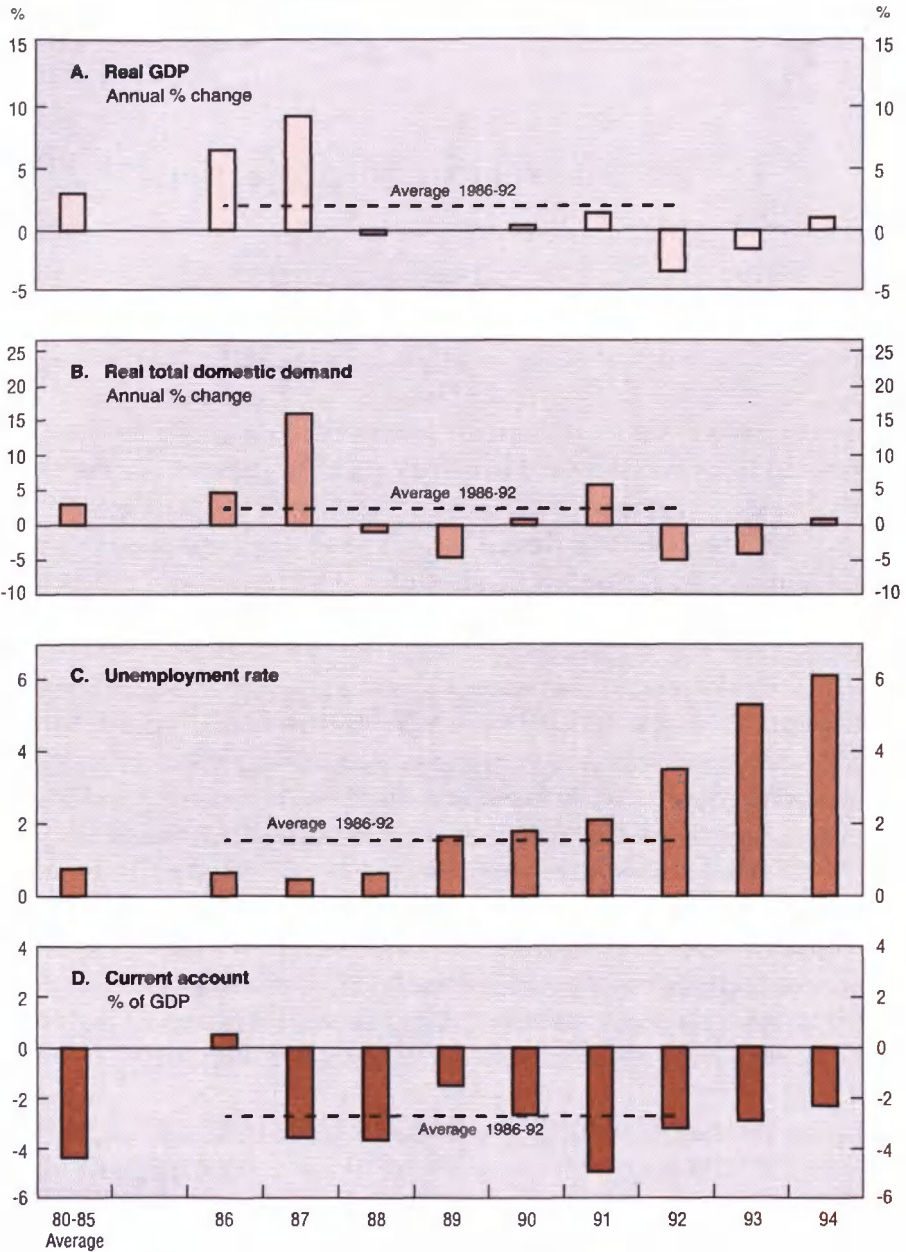
The first chapter of this Survey discusses recent developments in the economy, before presenting projections for the next two years, while a second chapter reviews the principal features of macroeconomic policies and their outcomes. Chapter III examines some of the remaining structural problems confronting the nation: the continued deterioration in the fisheries and the lack of success in diversifying the economy; the steady dwindling in aggregate saving and investment; the mounting burden of foreign indebtedness; and the challenges and opportunities offered by the European Economic Area agreement. Chapter IV discusses Iceland's health-care system, an area of increasing concern in most Member countries in recent years, as well as other aspects of the social-security system that appear to call for reform. Finally, conclusions are presented in Chapter V.

## I. Recent trends and projections

Iceland's fisheries have been beset by problems since 1987, leaving the economy stagnant, and in 1992 the country's economic difficulties became even more severe. The fisheries faced a double crisis: weak cod stocks forced down fisheries output, and falling fish prices further cut into export earnings. The resulting drop in national income drove down aggregate demand, and the demand weakness caused output to fall in a variety of other sectors: overall, real GDP fell an estimated 3.3 per cent (Diagram 1). Weaker activity and tight monetary policy slowed the pace of inflation during most of 1992, but the devaluation in late November led to a year-end spike in consumer prices.

Environmental conditions in Iceland's fishing grounds were quite favourable in 1991 and 1992, with warm waters and high plankton concentrations. Nonetheless, stocks of cod, the most important export product, are perilously low – due to overfishing and poor marine environmental conditions in previous years. The low level of cod stocks has forced the government to reduce catch quotas every year since 1987, and landings have dropped correspondingly. The cod catch in 1991/92 was only 277 thousand tonnes, down 29 per cent from 1987, the highest catch in the 1980s. This decline has been partly offset by boosting the catch of other species. Nonetheless, the total real catch fell 1 per cent in 1992, continuing a five-year string of output declines (Diagram 2). Furthermore, the average foreign-currency price of fish exports fell nearly 4 per cent in 1992, following two years of strong price rises (Diagram 3). This revenue decline was partially offset in the first half of 1992 by disbursements made from the Fisheries Price Equalisation Fund. Ikr 2.6 billion was paid out in 1992, amounting to 4 to 5 per cent of groundfish revenues. When disbursements from the Fund were largely complete in the autumn, the pinch in fishery revenues was felt more severely. The financial position of the fisheries deteriorated more sharply: only the most effi-

Diagram 1. AGGREGATE ECONOMIC PERFORMANCE



Source: National Economic Institute; OECD, *National Accounts* and OECD projections.

Diagram 2. THE FISH CATCH



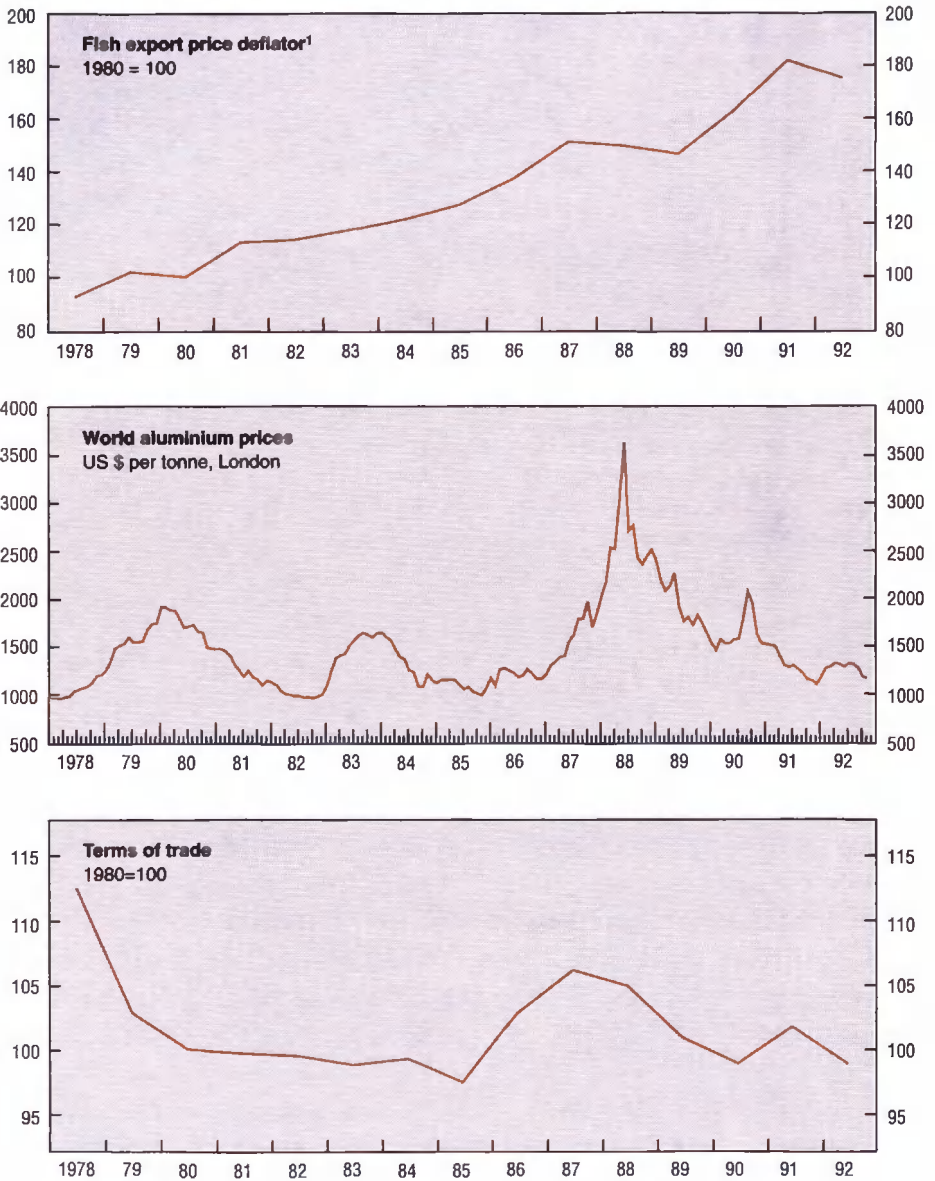
Note: e = estimate; p = projection.

Source: National Economic Institute.

cient producers avoided financial losses and a surge in already-high levels of debt.

The year was also discouraging for the aluminium industry, the second-largest export sector. Aluminium production edged downward, but, more importantly, worldwide economic weakness and increased supply from Eastern Europe drove prices down a further 2 per cent. With this decline, last year's prices were about 20 per cent below peak levels of 1987. Ferrosilicon export earnings were also affected in 1992 by weakness of world economic activity: although volumes were about 6 per cent higher than in 1991, they were nonetheless more than 25 per cent below 1989 levels; furthermore, prices were little more than half the level seen in early 1990. Export earnings fell in a variety of other manufacturing sectors, where the worldwide economic slowdown cut into volumes demanded. Overall, real merchandise exports fell 2 per cent last year, after an 8 per cent decline in 1991 (Table 1). On the services side, receipts from the Keflavik NATO base showed no sign of a cutback by mid-year, but NATO budget cuts were expected to result in significant declines by end 1992 and in 1993. Services receipts were also impaired by a 0.6 per cent decline in tourist arrivals in 1992. In

Diagram 3. EXPORT PRICES AND THE TERMS OF TRADE



1. Trade-weighted foreign-currency export price index.

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

Table 1. **Demand and Output**  
 Percentage change in volume terms, 1980 prices

	1988	1989	1990	1991	1992 <sup>1</sup>
Private consumption	-4.3	-4.2	-0.6	5.6	-3.5
Public consumption	4.2	2.4	4.1	5.2	0.5
Gross fixed investment	-0.6	-8.3	2.8	2.9	-13.9
Business	-6.5	-16.5	5.4	2.0	-17.2
Residential	10.6	2.3	0.0	-5.0	-6.0
Public	4.4	-0.4	0.7	10.2	-14.1
Final domestic demand	-2.0	-3.8	1.1	5.0	-4.9
Stockbuilding <sup>2</sup>	1.0	-0.8	-0.3	0.8	-0.2
Total domestic demand	-1.0	-4.6	0.8	5.8	-5.0
Exports of goods and services	-3.0	2.5	-0.4	-5.7	-2.2
Exports of goods	-1.0	3.5	-1.4	-7.9	-1.9
Exports of services	-7.4	-0.1	2.3	0.5	-2.9
Imports of goods and services	-4.6	-10.2	0.7	6.4	-7.2
Imports of goods	-3.9	-10.9	0.3	4.9	-7.9
Imports of services	-0.5	-8.3	1.6	11.3	-5.0
Foreign balance <sup>2</sup>	0.7	4.7	-0.4	-4.3	1.8
GDP	-0.3	0.0	0.4	1.4	-3.3
GNP	-1.2	-0.2	0.4	1.4	-3.5
Gross national income <sup>3</sup>	-1.2	-2.0	-0.2	2.9	-4.2
<i>Memorandum items:</i>					
Export production	-0.1	1.8	-1.8	-3.8	-2.7
Marine products	-0.2	-2.3	-1.2	-2.6	-1.5
Aluminium	-1.7	7.8	-1.8	2.7	-0.6
Ferrosilicon	14.7	3.8	-12.2	-20.6	6.5
Other goods	-1.8	13.5	-0.8	-22.5	-10.6
Cost of living index	25.5	21.1	14.8	6.8	3.7

1. Provisional

2. Contribution to GDP growth, *i.e.* changes in aggregates expressed as a percentage of GDP of the previous year.

3. GNP adjusted for effects of changes in the terms of trade.

Source: National Economic Institute.

this sector, however, expansion had been extraordinarily rapid over the 1980s – even with the small decline, tourist arrivals last year were more than double the 1980 level.

The weakness in both export volumes and prices led to substantial erosion in export earnings in 1992. The related drop in national and household incomes (of about 3½ to 4 per cent), was the main factor depressing private consumption. In addition, household debt had risen to rather high levels, following a drop in



household saving rates over the 1980s – and real borrowing rates have also been onerous. Finally, effective personal income tax rates were increased by lowering various tax credits and allowances. All these factors combined to drive down real personal consumption by almost 4 per cent in 1992.

Last year, lower aggregate demand induced a substantial retrenchment of investment in many sectors, and the investment/GDP ratio fell to about 17 per cent – down from nearly 25 per cent in the early 1980s (see Chapter III). However, part of the 1992 investment decline reflected the lumpy nature of investment in Iceland's small economy, rather than fundamental income weakness. That is, almost 6 percentage points of the 14 per cent decline in total fixed investment reflected the completion of two projects: Icelandair's fleet renewal and a government electric power project. Their conclusion had only a small net effect on GDP, however, since the drop in investment was almost fully offset by a corresponding sharp fall in imports of capital goods.

Import volume fell 7.2 per cent in 1992: about half of the plunge reflected the completion of the two investment projects mentioned above. However, imports of consumer goods also declined sharply, in response to the drop in disposable income over the course of the year. The substantial drop in imports more than offset the weakness of exports, virtually eliminating the trade deficit in 1992 (Table 2). Non-factor services apparently followed a similar pattern. Net factor service flows also improved last year, in response to an easing of interest rates abroad. Interest payments on the foreign debt fell by about 1 billion krónur; overall, the current-account deficit shrank to 3.2 per cent of GDP, compared with 5 per cent in 1991 (the biggest deficit since 1982).

The recent narrowing of the current-account deficit is encouraging, but the improvement was insufficient to avoid a further deterioration in Iceland's large foreign-debt burden: long-term foreign borrowing by the public sector expanded sharply in 1992. Although the increase in the surplus on long-term capital account was limited by reduced private-sector borrowing<sup>1</sup>, long-term foreign debt rose to 55 per cent of GDP even prior to the November 23 devaluation – exceeding the previous record of 51 per cent in 1991<sup>2</sup>. Reversing this trend will be quite difficult in the context of weak cod stocks and stagnant fisheries output: furthermore, debt service (including amortisation) is soaking up an increasing fraction of export earnings – 26 per cent, last year. This year's personal tax increases will attenuate the rise in the debt, but reduction can only come with further increases

Table 2. **Saving, investment and the current account**  
As a percentage of nominal GDP

	1985	1986	1987	1988	1989	1990	1991	1992 <sup>1</sup>
Capital formation	20.5	18.8	19.9	19.1	18.3	19.1	19.0	16.9
<i>of which:</i>								
Private investment	14.8	13.8	14.5	13.6	12.4	12.9	12.3	11.0
Public investment	5.7	5.0	5.4	5.5	5.9	6.2	6.7	5.9
National saving	15.7	17.9	16.2	16.3	16.7	16.2	14.1	13.1
Government	-5.3	-5.3	-5.2	-5.1	-4.7	-3.8	-3.7	3.7
Private	10.4	12.6	11.0	11.2	12.0	12.4	10.4	9.4
Current account	-4.0	0.5	-3.4	-3.5	-1.3	-2.2	-4.9	-3.2
<i>of which:</i>								
Merchandise trade	0.0	2.5	-1.0	-0.1	2.4	1.4	-0.8	-0.0
Nonfactor services	0.7	1.9	0.5	-0.1	0.5	0.6	-0.3	-0.5
Net factor income	-4.7	-3.9	-3.0	-3.2	-4.2	-4.1	-3.9	-3.6
Net external debt	52.8	45.2	40.8	42.0	46.6	46.1	46.8	48.6
<i>Memorandum:</i>								
Net factor payments as per cent of exports	11.3	9.9	8.5	9.8	12.0	11.4	11.8	11.2

1. Preliminary data.

Note: Data may not add due to rounding.

Sources: Central Bank of Iceland, National Economic Institute and OECD.

in personal and government saving, given the already low levels of aggregate investment.

The budget balance deteriorated sharply in 1991, so that the government was in no position to take any major steps in 1992 to stem the short-term loss of household incomes. Real public consumption rose 0.5 per cent, but this was more than offset by increased direct taxes and lower public investment: the Treasury deficit was reduced from 3.3 per cent of GDP in 1991 to 1.9 per cent in 1992.

Iceland's unemployment rate has been among the lowest in the OECD, averaging about 1 per cent over the last decade. Employers have typically chosen to deal with cyclical declines in demand by reducing average hours worked, rather than employment. However, as aggregate output weakened in late 1991 and early 1992, man-hours demanded fell more steeply than in past recessions – in many cases, a simple reduction in the workweek was not sufficient. By April 1992 the unemployment rate had risen 1½ percentage points over year-earlier levels, and at year-end the rate (at nearly 5 per cent) was 2½ percentage points above December 1991 levels. The overall 1992 unemployment rate of

3 per cent (Table 3) was the highest average for nearly 50 years. Job vacancy statistics tell a similar story. Vacancies peaked in 1987 at 3.5 per cent of the labour force and fell to negative 1.2 per cent by mid-1992. That is, in 1992 on average surveyed employers wanted to reduce the number of their employees: not surprisingly, layoffs ensued.

Deteriorating demand for labour put unions in an increasingly difficult bargaining position during the wage negotiations which followed the September 1991 contract expiration. Thus in May 1992, after eight months without any general pay increase, the Employers Association and the unions agreed to a nominal wage increase of only 1.7 per cent (plus a supplemental allowance for low-income workers) for the period up to March 1993. With negligible wage drift, the package was restrained, given inflation rates which had been averaging about 7 per cent in 1991.

Over the course of 1992, wage rates increased by about 2.2 per cent, down 4 percentage points from the previous year. This slowdown in wage costs, along with a stable currency and a plunge in domestic demand, brought overall price inflation down sharply (Diagram 4). Inflation ground to a halt from mid-1992 until the November devaluation. For the 12 months ending November 1992, the

Table 3. Labour-market conditions

	1984-86	1987	1988	1989	1990	1991	1992
Labour vacancies							
Number (in thousands)	2.4	3.2	1.7	-0.3	0.0	0.2	-0.8
Per cent of total labour force	2.6	3.5	1.9	0.4	0.0	0.2	-0.8
Unemployment rate <sup>1</sup> (%)	0.9	0.5	0.6	1.7	1.8	1.5	3.0
Workweek of full-time manual workers <sup>2</sup> (hours)	50.0	50.1	47.9	48.2	47.5	47.6	47.4 <sup>3</sup>
Man-days lost due to work stoppages	68	116	131	611	3	27	
Earnings per worker (% change)							
Nominal	33.2	42.8	26.7	13.5	6.7	8.6	5.1 <sup>3</sup>
Real	5.1	20.2	1.0	-6.1	-6.8	1.3	0.4 <sup>3</sup>

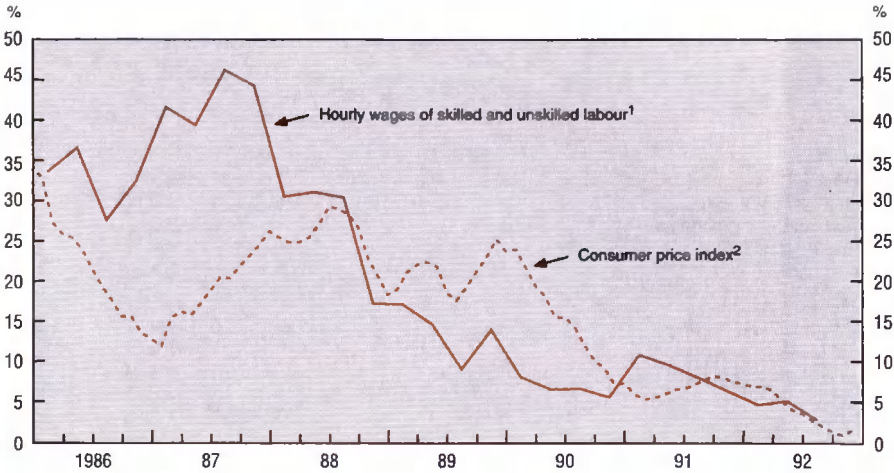
1. Based on registered unemployment.

2. More precisely, the workweek of skilled and unskilled workers who work more than 400 hours per quarter.

3. Through the second quarter.

Source: National Economic Institute; Nordic Council of Ministers and the Nordic Statistical Secretariat, *Yearbook of Nordic Statistics*.

Diagram 4. INFLATION PERFORMANCE



1. Percentage change from four quarters earlier.
  2. Percentage change from twelve months earlier.
- Source: National Economic Institute.

cost-of-living index rose only 0.9 per cent – the lowest rate in more than 20 years. This price deceleration is an impressive accomplishment, given the history of very high inflation rates over much of the 1970s and 1980s. Then, as the higher prices of imported goods began to be passed on to consumers and indirect taxes were raised, prices rose 2.4 per cent in the following three months.

### The near-term outlook

The outlook for the Icelandic economy over the next two years is distinctly unfavourable, due primarily to the parlous condition of the fisheries. Another reason for depressed activity in 1993-94 is the policy measures taken late in 1992 to administer “short-term pain for long-term gain” in order to limit further deterioration in external indebtedness. Most of the decline in real output projected for 1993 is predetermined, in the sense that it follows from the reduction in the total allowed catch for cod in the current season; and there is only a slim prospect for any improvement in the following fisheries year. However, growth in house-

**Table 4. Short-term projections**  
Percentage changes, volume (1980 prices)

	1993			1994
	Official forecast October 1992	Official forecast January 1993	OECD	OECD
Private consumption	-1.2	-3.8	-4.3	-1.0
Government consumption	2.0	2.0	2.0	2.0
Gross fixed capital formation	-4.5	-10.5	-9.3	4.6
Final domestic demand	-1.2	-3.8	-3.9	0.7
Change in stockbuilding <sup>1</sup>	-0.2	-0.1	-0.3	0.2
Total domestic demand	-1.4	-3.9	-4.1	0.8
Exports of goods and services	-0.1	-0.6	-1.0	0.4
Imports of goods and services	-2.7	-8.1	-7.9	0.0
Change in foreign balance <sup>1</sup>	n.a.	n.a.	2.4	0.1
GDP	-0.5	-1.4	-1.8	1.0
GDP implicit price deflator	1.8	2.9	1.3	0.5
Consumer price index	2.0	4.0	3.0	0.2
Unemployment rate (in per cent)	3.5	5.0	5.3	6.1
Current balance <sup>2</sup>	-3.3	-2.3	-2.5	-2.3

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

2. As a percentage of GDP.

Source: National Economic Institute and OECD.

hold disposable income and therefore in private consumption will be impaired as well by declines in real wages and salaries, due to the reduction in VAT exemptions, the devaluation-induced increase in import costs and the boost in personal tax liabilities. Moreover, with unemployment projected to soar to levels not seen in 50 years, many households are likely to seek to increase precautionary saving, further damping consumer demand.

These considerations, as well as the still high real interest rates and the reduced generosity of the mortgage interest rebate system as of 1994, may drive down the demand for new housing. While public investment should increase due to the public works programme in the 1993 Budget, business investment could continue to fall sharply, in line with low capacity utilisation and the completion of certain lumpy investment projects. However, by 1994, with improved profitability resulting from lower taxes, the real depreciation and continuing wage moderation, some recovery in capital formation can be expected. Nevertheless,

the likelihood is that no new aluminium smelter or other major export-related project will get underway before 1995.

On the external side, the outlook is considerably brighter than prior to the government's autumn package of measures which was designed specifically, among other things, to curtail spending on imports. Given the projected severe decline in domestic demand, together with the shift in relative prices against foreign goods, overall imports could fall precipitously. However, export volume growth would be little improved by the devaluation, even if the effective exchange rate change were more significant, since so little is price-sensitive: in the short-term, output of both marine products and aluminium, at least, is supply-determined. With spreading weakness in export markets this year, aggregate sales abroad could fall slightly in real terms, before edging up in 1994. The net result is that, despite increasing net interest payments abroad, the current account should continue to move toward balance in both years. Inflation will probably bounce back somewhat from the low rates seen in 1992, due to higher prices for imports (which represent some 45 per cent of the consumer basket) and the higher effective rate of indirect taxation. However, the resurgence may well be less than that contained in the official forecast, so long as wages are frozen at their March 1993 expiry date because of the obvious pressures on producers to absorb some of the recent cost increases.

Over the medium term, economic activity should improve somewhat, as conditions appear propitious for at least one of the major development projects to be approved. While this would serve to increase the current-account deficit rather significantly during the construction phase, export potential would be enhanced once the capacity comes on line. Should, for example, the Atlantat or other smelter project be undertaken, the National Economic Institute estimates that real GDP growth would jump an average of  $1\frac{3}{4}$  percentage points over the first three years of construction. At the end of that time, the unemployment rate could be as much as a full percentage point lower than otherwise, in line with a boost to employment of about  $1\frac{1}{2}$  percentage points, together with a rise in wage and price inflation of  $3\frac{1}{2}$  and  $1\frac{3}{4}$  percentage points, respectively.

## II. Economic policies

### Fiscal Policy

#### *Recent outcomes*

Last year's economic downturn came at a time when fiscal options were already severely limited. On past experience, the government might have considered responding to the recession by loosening fiscal policy: however, its foreign debt levels have recently been unusually high, and its range of choices was narrowed further by the extremely disappointing 1991 budgetary outcome. That year, export earnings were unexpectedly weak, which eroded direct tax receipts. Agricultural subsidies rose sharply (see below), corporate tax rates were reduced, and some planned expenditure cuts and tax increases were not put in place until late in the year, after the elections. In all, the Treasury deficit tripled, reaching 3.3 per cent of GDP<sup>3</sup> (Table 5). Local governments' balances likewise deteriorated, as real municipal consumption rose five percentage points faster than their receipts. The volume of government loans for housing expanded rapidly, and the overall public-sector borrowing requirement increased by three percentage points of GDP.

After the major fiscal setback in 1991, the central government had to address the burgeoning deficit problem, despite indications that recession was once more spreading through the economy. Thus, the 1992 Budget called for cutbacks in government consumption, investment, subsidies and social-security transfers. The personal tax base was broadened, raising the average effective tax rate, user fees were increased or introduced for education and medical care, and taxes on the fishing industry were raised. This tightening caused the Treasury deficit to fall to 1.9 per cent of GDP in 1992 – a major reduction, although the 1992 Budget had targeted a number closer to 1 per cent. Expenditures developed for the most part as planned<sup>4</sup>, but the recession and the consequent increase in unemployment

Table 5. Treasury finances

IKr million, cash basis

	1990	1991				1992				1992/ 1991 %	1993 Budget proposal	1993 budget/ 1992 budget %	1993 budget/ 1992 esti- mate %
		Budget	Outcome	Differ- ence	% differ- ence	Budget	Estimate	Differ- ence	% differ- ence				
Total revenue	92 453	101 698	99 953	-1745	-1.7	105 463	103 447	-2 016	-1.9	3.5	104 771	-0.7	1.3
Direct taxes	17 690	20 167	19 263	-904	-4.5	21 088	20 348	-740	-3.5	5.6	20 193	-4.2	-0.8
Indirect taxes	68 448	75 228	74 240	-988	-1.3	76 215	75 422	-793	-1.0	1.6	76 698	0.6	1.7
Import duties and excise	8 354	8 718	9 460	742	8.5	8 608	8 195	-413	-4.8	-13.4	8 656	0.6	5.6
VAT	37 086	41 550	38 954	-2596	-6.2	40 450	39 944	-506	-1.3	2.5	40 950	1.2	2.5
Other	23 008	24 960	25 826	866	3.5	27 157	27 283	126	0.5	5.6	27 092	-0.2	-0.7
Other revenue	6 315	6 303	6 450	147	2.3	8 160	7 677	-483	-6.0	19.0	7 880	-3.4	2.6
Total expenditure	96 899	105 767	112 487	6 720	6.4	109 575	110 607	1 032	0.9	-1.7	111 015	1.3	0.4
Consumption	39 669	43 950	44 705	755	1.7	43 877	44 923	1 046	2.4	0.5	46 478	5.9	3.5
Transfer payments	39 630	41 774	45 109	3 335	8.0	43 925	46 243	2 318	5.3	2.5	41 252	-6.1	-10.8
Social security	24 412	26 449	28 265	1 816	6.9	26 826	28 853	2 027	7.6	2.1	27 754	3.5	-3.8
Agricultural subsidies	8 072	8 304	9 049	745	9.0	8 264	9 415	1 151	13.9	4.0	6 191	-25.1	-34.2
Other	7 146	7 021	7 795	774	11.0	8 835	7 975	-860	-9.7	2.3	7 307	-17.3	-8.4
Interest payments	8 274	9 400	9 875	475	5.1	9 900	8 346	-1 554	-15.7	-15.5	10 500	6.1	25.8
Capital expenditure	9 326	10 643	12 798	2 155	20.2	11 873	11 095	-778	-6.6	-13.3	12 786	7.7	15.2
Revenue balance <sup>1</sup>	4 446	4 069	12 534	8 465	208.0	4 112	7 160	3 048	74.1	-42.9	6 244	51.9	-12.8
% of GDP	1.3	1.1	3.3			1.1	1.9				1.7		
Treasury, net borrowing requirement <sup>2</sup>	7 170	5 879	14 648	8 769	149.2	4 900	7 175	2 275	46.4	-51.0	8 939	82.4	24.6
% of GDP	2.0	1.5	3.8			1.3	1.9				2.3		
Public-sector borrowing requirement <sup>3</sup>	27 000	23 300	40 200	16 900	72.5	19 200	23 900	4 700	24.5	-40.5	26 000	35.4	8.8
% of GDP	7.7		10.5			5.0	6.3				6.7		

1. Equals total expenditure less total revenue.

2. Equals the revenue balance plus net Treasury lending, equity purchases and short-term credit.

3. Equals the Treasury net borrowing requirement plus the net borrowing of public-sector financial and non-financial institutions, including that of municipalities, which is very small.

Source: Ministry of Finance.



led to unexpected weakness in personal income tax revenues, VAT receipts and import duties. Overall, the central-government deficit was equivalent to almost 7 per cent of budgeted revenues. The municipal governments' balances also deteriorated: after continued rapid growth in spending, their deficit amounted to an estimated 3½ per cent of revenues or 0.3 per cent of GDP.

### ***The 1993 Budget***

Since the central government debt has risen to nearly 40 per cent of GDP and growth prospects for the next few years appear poor, a Treasury deficit even as large as the 1992 outcome is seen to be unsustainable. The 1993 Budget envisages further tightening, with the Treasury deficit falling to 1.7 per cent of GDP, despite another anticipated decline in economic activity. Over the course of 1993, several tax-increasing measures will take effect, leading to additional revenues, while subsidies and social security transfers will be cut back. These belt-tightening measures should outweigh the planned rise in real public consumption and investment. Most notable among the budgeted spending increases is the Ikr 1.8 billion addition to public works investment<sup>5</sup> – a measure targeted specifically at unemployment. However, with agricultural subsidies sharply reduced, total spending by the central government is set to be only marginally above last year's level.

The 1991 agreement between the government and the Farmers Union made major changes in the system of subsidies for Icelandic agriculture: export subsidies and price supports for sheep and milk were phased out and replaced with a less extensive system of income supports for farmers. Support is based on quotas whose sum is set equal to total domestic consumption, thereby cutting the amount of supported production by about 5 per cent for milk and 30 per cent for sheep. By 1994, the real prices of sheep meat and milk are to be cut by 6 and 5 per cent, respectively. Effective in 1993, the reduction in agricultural subsidies amounts to about Ikr 3 billion, and further subsidy cuts are set for 1994. The agreement expires in 1998.

The planned entry into the European Economic Area influenced the government's decision to make certain tax changes. Iceland's import duties on industrial goods were inconsistent with the EEA agreement: thus, duties on EC industrial goods have been abolished and replaced with higher excise taxes. More fundamentally, lower trade barriers and closer integration with Europe will

Table 6. **Agricultural subsidies, 1991-93**  
IKr million, cash basis

	1991	1992 Estimate	1993 Budget
Price subsidies	5 299	5 269	994
Sheep products	2 401	2 335	500
Milk products	2 408	2 440	200
Other products	490	494	244
Export subsidies	2 426	1 335	175
Sheep products	2 024	700	
Milk products	402	635	175
Direct payments to farmers	0	1 775	3 952
Sheep products		1 775	1 706
Milk products			2 246
Payments for quotas		292	436
Other subsidies	1 324	744	634
Total payments	9 049	9 415	6 191

Source: Ministry of Finance.

require improved industrial competitiveness in order to avoid a deterioration in net exports and a widening of the current-account deficit. Until 1993, Iceland's tax structure was unbalanced and clearly not well suited to increased competition with Europe. The corporate tax burden was higher than the average elsewhere in Europe<sup>6</sup>: the statutory corporate income tax rate was 45 per cent, and the municipalities collected an additional turnover tax of up to 1.3 per cent on business operating costs<sup>7</sup>. At the same time, personal tax rates were lower than the European average: in 1992 the marginal personal tax rate was just under 40 per cent<sup>8</sup>, but numerous allowances and credits brought the average rate down to just 13½ per cent – compared with 15 per cent for Europe as a whole<sup>9</sup>. In order to reduce business costs and boost competitiveness, the government has made major changes in the corporate tax structure for 1993. Corporate income tax rates have been lowered from 45 first to 39 per cent and then to 33 per cent for 1994, but at the same time the tax base was broadened by the abolition of corporate investment tax credits (the so-called “investment funds”). The turnover tax, an important source of revenue for the municipalities, has also been abolished. The central government has increased transfers to the municipalities to offset most of this

year's loss in their turnover tax revenues<sup>10</sup>. The net loss to the central government from these tax changes amounts to about 4 or 5 per cent of revenues. However, a variety of additional measures (principally with respect to personal income taxes) should more than offset the loss.

The bulk of the tax increases in the 1993 Budget will work to hold down personal consumption. Personal income tax rates were increased by 1½ percentage points, the personal tax credit was lowered and an additional two-year tax surcharge of five percentage points was imposed on high-income households. Rebates for mortgage interest<sup>11</sup> were reduced (to take effect in 1994). Also, the VAT tax base was extended to include a variety of previously exempt goods and services<sup>12</sup>, and the government abolished corporate investment tax credits (the so-called "investment funds").

Finally, the government plans to sell several state-owned companies. Public enterprises currently account for about 30 per cent of GDP: among them, the most notable candidates for privatisation are the state-owned commercial banks and investment credit funds. Sale of a state-owned bank, for example, would

Table 7. **Public-sector borrowing requirement**<sup>1</sup>

	1987	1988	1989	1990	1991	1992	1993
	Ikr billion, net						
<b>Total</b>	11.6	17.0	22.9	27.0	40.2	23.8	25.4
Treasury	5.5	8.2	7.5	7.9	14.7	7.2	9.0
Revenue balance	2.7	7.1	6.0	4.4	12.5	7.2	6.2
Net lending, etc.	2.8	1.1	1.5	3.5	2.1	0.0	2.8
Housing system	3.8	6.1	8.0	14.2	22.2	15.9	13.8
Other	2.3	2.7	7.4	4.9	3.3	0.7	2.6
	Percentage of GDP						
<b>Total</b>	5.6	6.7	7.5	7.6	10.5	6.2	6.6
Treasury	2.7	3.3	2.5	2.3	3.8	1.9	2.3
Revenue balance	1.3	2.8	2.0	1.3	3.3	1.9	1.6
Net lending, etc.	1.4	0.5	0.5	1.0	0.6	0.0	0.7
Housing system	1.8	2.4	2.6	4.0	5.8	4.1	3.6
Other	1.1	1.1	2.4	1.4	0.9	0.2	0.7

1. Including the financing of the housing system.

Source: Ministry of Finance.

have significant budgetary impact, though privatisation is intended primarily to increase economic efficiency and encourage wider ownership of equities<sup>13</sup>. One-fifth of the revenue from privatisation is earmarked toward additional research and development and the balance toward deficit reduction. The 1993 Budget projects that the net effect of the tax changes and sales of state-owned companies will be to reduce the Treasury deficit by 0.7 percentage point of GDP.

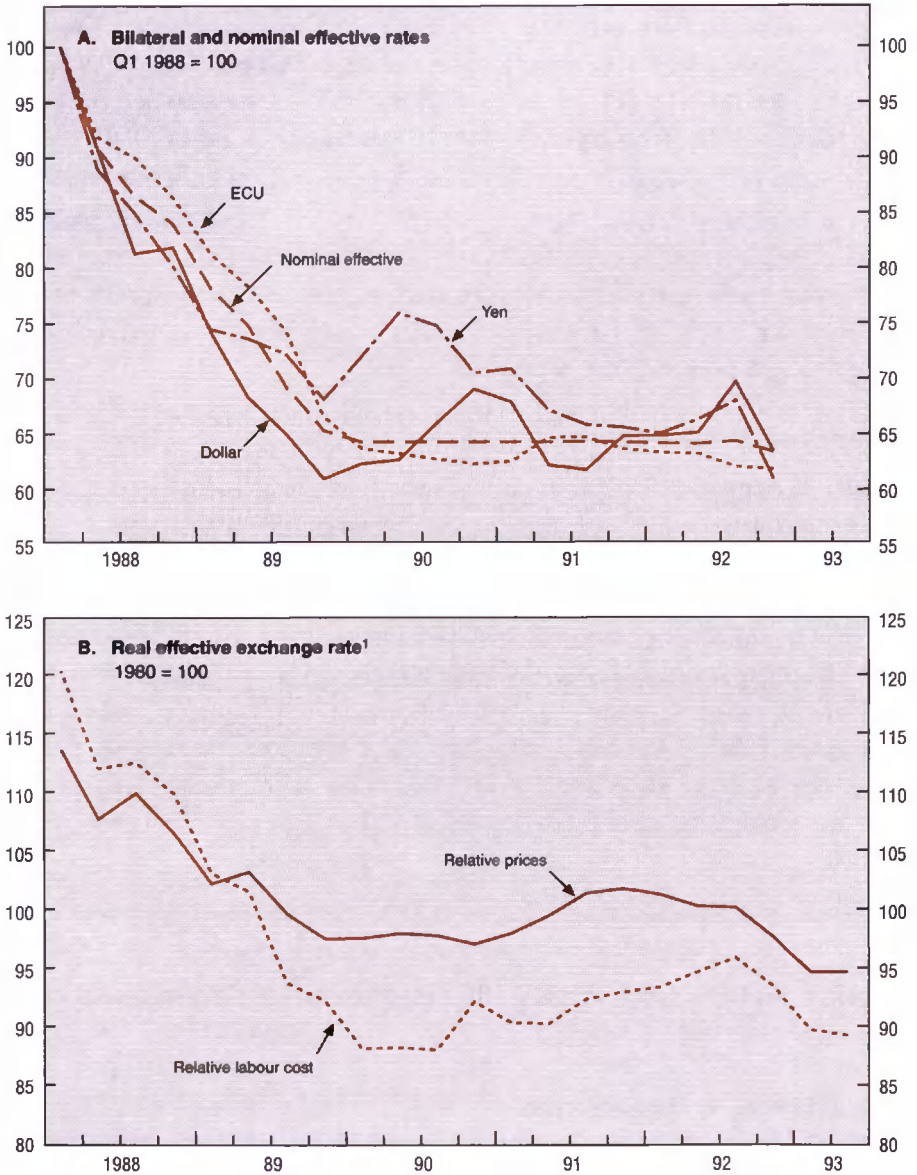
Increases in Treasury off-budget borrowing are planned for 1993. Thus even though the Treasury revenue balance is expected to improve, the Treasury net borrowing requirement is expected to increase. No major changes are foreseen for the government's activity in housing markets, though borrowing for housing bonds may diminish. Thus the overall public sector borrowing requirement is expected to rise from 6.2 to 6.6 per cent of GDP.

Some of the planned changes in government finances also weigh heavily next year. For example, 1994 will be the first full year that the VAT increase is effective. Agricultural subsidies will fall further next year, and a more permanent replacement for the municipal turnover tax revenues will have to be negotiated between the municipalities and the central government. Finally, the government is at present exploring the possibility of introducing a tax on capital income. One of the factors influencing the implementation of such a tax is its possible detrimental effect on savings, whose rate is relatively low in comparison with other OECD countries (see Chapter III). While introduction of capital income taxation would better balance the tax burden among the various sources of personal income, provided the government taxes real, rather than nominal, capital gains and avoids double taxation of dividends, it is not, however, expected to yield additional revenues, since the present taxes on net wealth would be reduced or abolished.

## **Monetary and exchange-rate policy and financial developments**

For most of 1992, as in the two previous years, monetary policy was uncompromising in bearing down on inflation. The linchpin of this policy was the stability of the exchange rate: during 1990 and 1991, the effective exchange rate had been held steady, with the króna pegged to a trade-weighted average of 17 currencies; thereafter, the basket included only the ecu (76 per cent), the dollar (18 per cent) and the yen (6 per cent). The change in the basket was a step

Diagram 5. **NOMINAL AND EFFECTIVE EXCHANGE RATE OF THE KRONA**



1. Estimates for 1993 are from the Central Bank of Iceland.  
Source: Central Bank of Iceland.

towards a policy of pegging uniquely to the ecu. As seen in the first Chapter, the policy was completely successful in reducing inflation which not only fell to the average rate of its major trading partners by late-1991, but was essentially eliminated by mid-1992. Accordingly, after some appreciation in 1991, the real exchange rate began to ease back somewhat in 1992 on a relative-price basis (Diagram 5). However, with poor productivity performance in 1992, relative costs continued to deteriorate slightly, competitiveness was further eroded, and profits were squeezed.

### *The adjustment of the króna peg*

During the summer of 1992, the world's currency markets were subject to increasing tensions, as manifest in the weakness of the dollar and the strength of the Deutschemark. These pressures could not be contained, and in September the pound and the lira were forced to withdraw from the exchange-rate mechanism of the European Monetary System, and they fell substantially in value. Subsequently, there were also depreciations of other European currencies, including most notably for Iceland the Finnish markka, the Swedish crown and the Portuguese escudo. While exchange-rate pressures are translated into foreign currency reserve reduction in Iceland's case, due to the fixed currency peg, it was nevertheless clear that economic forces would require the authorities to follow suit unless an "internal devaluation" (that is, a significant reduction in domestic costs) could be successfully implemented.

Negotiations were undertaken among the social partners to try to put together a package which would include a wage freeze and reduced taxes on employers, combined with personal tax hikes and increased indirect taxes. However, before they came to fruition, the authorities decided on a 6 per cent devaluation as part of a broader policy package (included in the final 1993 Budget), invoking the arguments that the policy had always been one of stability, rather than fixity, of the exchange rate, that national expenditure was too high (as exemplified by the large current-account deficit) and that the profitability of the export sector, especially the fishing industry, was extremely weak.

Indeed, a look at the Central Bank's "index of competitive position" shows a serious deterioration in profitability in 1992 (excluding the effects of the final payout from the Fisheries Price Equalisation Fund) (Table 8). However, the index indicates far better conditions than in the period 1987-90 and shows little

Table 8. The index of competitive position

	Fishing sector		Manufacturing export sector		Domestic manufacturing sector		Average	
	Index	Change <sup>1</sup>	Index	Change <sup>1</sup>	Index	Change <sup>1</sup>	Index	Change <sup>1</sup>
<b>A. Prior to the November 1992 devaluation<sup>2</sup></b>								
1979	100.0		100.0		100.0		100.0	
1980	95.0	-6.7	107.9	10.4	97.5	-4.4	96.6	-4.8
1981	94.4	-7.4	103.9	5.1	96.7	-5.7	95.7	-6.0
1982	91.3	-11.6	106.7	8.9	97.4	-4.6	93.8	-8.4
1983	99.6	-0.6	116.7	23.8	108.5	16.4	102.9	5.1
1984	95.8	-5.7	112.9	18.6	107.7	14.8	99.8	0.7
1985	100.1	0.2	107.8	10.5	107.7	14.8	102.4	4.2
1986	106.1	7.9	97.9	-3.8	107.4	14.2	105.7	8.3
1987	99.3	-0.8	91.0	-12.7	99.2	-1.4	98.6	-1.9
1988	90.3	-12.2	96.3	-5.6	96.9	-5.4	92.2	-10.2
1989	92.8	-9.5	101.3	2.2	102.6	4.7	95.6	-5.4
1990	100.6 <sup>3</sup>	-0.1	88.1	-17.0	105.2	9.9	100.1 <sup>3</sup>	0.7
1991	106.6 <sup>3</sup>	5.8	83.2	-23.8	102.8	5.2	102.3 <sup>3</sup>	3.3
1992	100.1 <sup>3</sup>	3.9	82.2	-25.2	103.8	7.1	101.4 <sup>3</sup>	2.3
1993	100.3	1.1	83.6	-23.4	107.2	13.6	100.5	1.4
<b>B. After the November 1992 devaluation<sup>4</sup></b>								
1993	100.8	1.1	84.2	-22.7	107.8	14.9	101.0	2.2

1. The percent change needed in the value of the króna in order to maintain the share of gross operating surplus at the 1979 level.

2. Based on the following assumptions for 1993: wage increase 0.8 per cent, domestic input price increase 1.5 per cent, fuel price change -0.2 per cent, fisheries export price increase 2.5 per cent, manufactured export price increase 0.0 per cent, exchange rate change -0.2 per cent.

3. Excluding the effects of the Fisheries Price Equalisation Fund which had the following impact on the index for the fishing sector: -0.7 per cent, -2.3 per cent and +2.8 per cent in 1990, 1991 and 1992, respectively.

4. Based on the following assumptions for 1993: wage increase 0.8 per cent, domestic input price increase 3.0 per cent, fuel price change 5.5 per cent, fisheries export price increase 0.0 per cent, manufactured export price increase 0.0 per cent, exchange rate change 4.0 per cent.

Source: Central Bank of Iceland.

improvement emanating from the depreciation, even with the optimistic assumption that wages will not respond to the depreciation-induced price rises. In addition, it will be argued in Chapter III that the problems in the fisheries sector are not related to inadequate króna prices, but rather to poor stocks and excess capacity, problems which will not be alleviated by the higher profits generated by devaluation. Indeed, such profits will only serve to delay inevitable exit from the sector for the least efficient fishing boats. Furthermore, the supply of both aluminium and ferrosilicon is also very price-inelastic, at least in the short to medium term. Thus, compared with other countries, currency devaluation seems unlikely to have any significant beneficial impact of shifting resources from the production of non-tradables to that of tradable goods; rather than having volume effects, most of the impact will be on prices and the distribution of incomes. In any case, some of the impact was reversed within a matter of weeks, as the Norwegian crown depreciated by some 5 per cent in mid-December, and by year-end, the króna was only about 3½ per cent below its early-1992 level in effective terms.

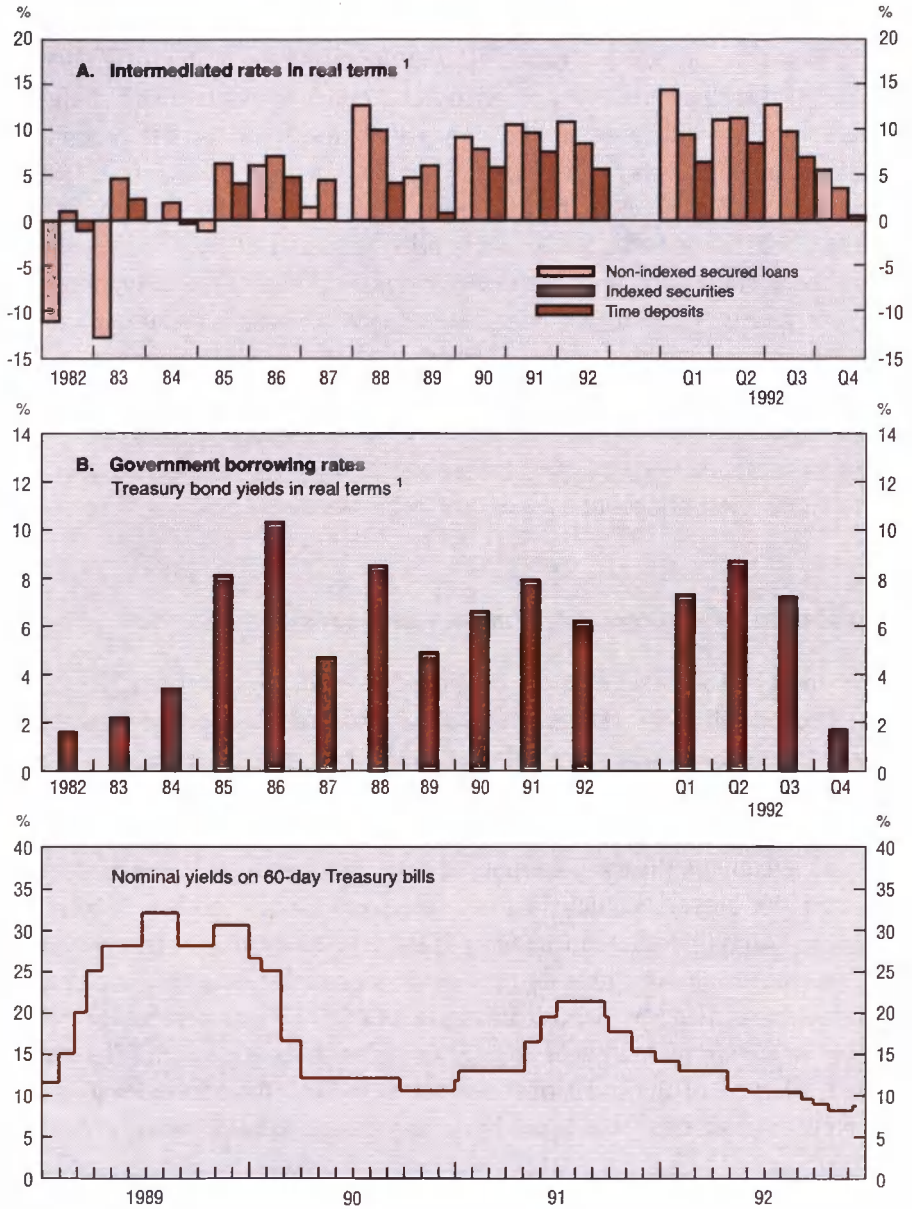
### *The evolution of interest rates, money and credit*

For most of 1992 interest rates continued to moderate, after reaching a peak in the summer of 1991 (Diagram 6). Yet most of the decline was merely reflecting the slowdown in price inflation, with no relief in real terms. Yields on indexed securities reached a trough (of around 6½ per cent on government debt, compared to a 1991 peak of over 8 per cent) during the spring of 1992 and started to rebound already by the early autumn, as fears of a devaluation began to spread. Then, after the November devaluation, risk premia over foreign interest rates surged: for example, yields on treasury bills jumped by nearly two percentage points. Intermediated rates followed a similar pattern: for example, average rates on indexed loans made by deposit money banks fell by one percentage point to 9 per cent in the spring but began to edge up again in early autumn. The declines were much larger, of the order of 4 percentage points, for non-indexed secured loans. Nevertheless, there was little sign of any easing in banks' margins – which remain substantial – as these declines were approximately matched by reductions in the rates offered to depositors.

In line with the sharp slowdown in real activity as well as the near-elimination of inflation and the extremely high level of real interest rates in 1991-92,



Diagram 6. INTEREST-RATE DEVELOPMENTS



1. Adjusted for changes in the cost of living index.  
Source: Central Bank of Iceland.

Table 9. Growth in monetary and credit aggregates<sup>1</sup>

	Per cent			
	1989	1990	1991	1992 <sup>2</sup>
<b>Money</b>				
M1	32.8	24.9	19.9	0.8
M3	27.2	14.9	14.4	3.6
Banking system lending <sup>3</sup>	24.6	9.6	12.4	3.1
<i>of which:</i>				
Deposit money banks	25.2	11.0	11.5	5.5
<b>Credit</b>				
Total	33.6	12.3	15.4	10.6
<i>of which claims on:</i>				
Central government	37.8	8.4	21.6	12.5
Municipalities	30.2	10.8	11.6	8.7
Business	32.4	6.0	8.6	8.8
Households	34.0	25.8	23.6	12.3
<i>of which originating from:</i>				
Domestic saving	32.6	18.4	18.6	7.6
Voluntary	29.1	18.7	20.0	3.8
Contractual	35.8	18.1	22.0	11.0
Foreign credit, net	35.4	1.4	8.3	17.4

1. Through-the-year growth.

2. Preliminary.

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

Source: Central Bank of Iceland.

growth in all money and credit aggregates experienced a marked deceleration during the year (Table 9). Narrow money (M1) growth averaged some 12.3 per cent in 1992, down from 14.2 per cent in 1991, but by year-end increases were in the range of 1 per cent. The trend in broad money growth (M3) was even more clearly pointed in a downward direction, with increases during the year below 4 per cent, compared with 14.4 per cent during 1991.

Similarly, the banking system was far less active in its lending operations. Overall loans (including foreign funds relent and Central Bank lending to the Treasury) were actually below year-earlier levels by the summer of 1992, although double-digit year-over-year growth rates had still been registered as recently as January. The deceleration was not so marked for deposit money banks, but even their new credit extension was meagre. However, given complete stagnation in deposits, these institutions have had to sell substantial amounts of

new debt, especially in the form of non-indexed bonds which nearly quadrupled on banks' balance sheets during the year. Despite the economic difficulties of recent years, however, the banking system has thus far avoided the crises which have occurred in some other Nordic countries. Nevertheless, in March 1993, following a doubling of the industry's loan-loss provisions between 1988 and 1991 and heavy provisions for 1992, the authorities had to provide a 2 billion krónur equity infusion and a further 1 billion krónur loan to the State-owned National Bank. With these measures, all banks meet the new Basel capital requirements.

Overall credit growth began to decelerate in the latter part of 1991, and this slowing trend continued into 1992. The cutback was visible in all segments (by agent). As in previous years, most of the growth in credit was attributable to household borrowing, with virtually no increase in business indebtedness. The public sector, too, was again a major player on the credit market in 1992, led by the central government, claims on which rose by 12½ per cent. The share of financing provided by domestic saving continues to increase, although the growth rate of voluntary saving fell sharply, from 20 per cent in 1991 to about 4 per cent in 1992, due to the severity of the economic downturn.

### *Structural changes in the financial system*

A number of important structural changes were announced over the past year. First, amendments to the Central Bank Act were approved by Parliament in March 1992 giving the Bank authority to let the exchange rate of the króna be determined on an organised foreign-exchange market. Then the Central Bank and the Treasury came to an agreement in June to phase out the latter's overdraft facility (which had provided a peak of Ikr 11 billion in financing in 1991, far more than in any other year in the past decade) by the beginning of 1993. Second, the banks' required reserve ratio was cut in two stages from 7 to 6 per cent at the end of 1992, independent of changes to offset seasonal variations in liquidity. Third, a number of reforms to debt-management procedures were implemented, primarily to reduce the cost of public borrowing, but also to improve the authorities' information regarding the state of the market. Since June 1992, about Ikr 500 million of six-month notes have been auctioned once a month. Previously, such paper was issued on tap, with the government setting the interest rate and resorting to foreign borrowing and the overdraft facility for its

residual financing needs. Also, in November 1992 the government began issuing 90-day bills in twice-monthly auctions. Fourth, in May 1992 a new centralised over-the-counter equities market was established with a membership of six brokerage firms and trading in the securities of 20 to 30 companies. But this did not prevent expanded trading on the Securities Exchange, whose listings increased from two at the start of 1992 to 17 by February 1993.

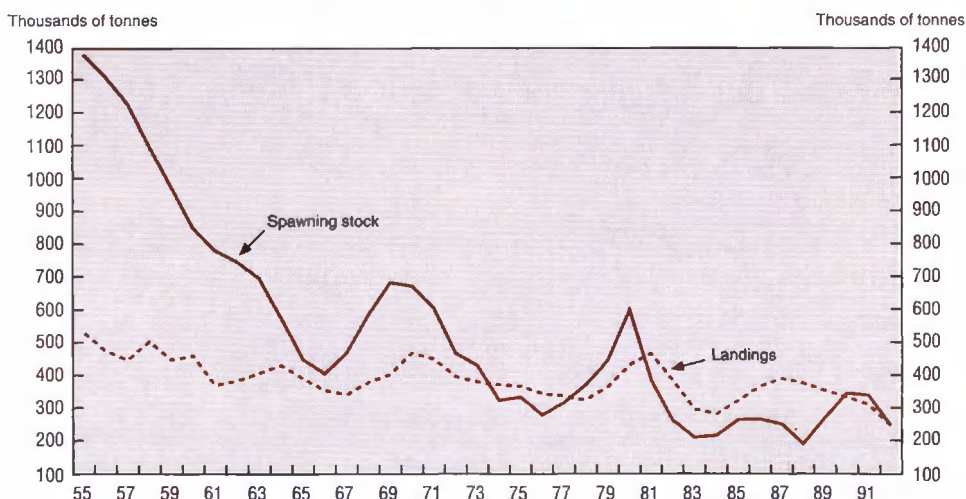
Finally, external capital controls are being dismantled. Liberalisation of controls on long-term capital movements began in mid-1990 with little in the way of resulting outflows, but the remaining constraints appear to have been binding for institutional investors. Controls on short-term capital flows, including the foreign-currency surrender requirement, will be phased out by the end of 1994, in accordance with the European Economic Area agreement (see Chapter III). The current system whereby the Central Bank unilaterally sets foreign exchange rates each morning is inconsistent with a decontrolled environment, and an interbank foreign exchange market is being set up. There will still be a target band, but its width has yet to be determined. In addition, a domestic money market will be necessary (an overnight market is in the process of being created), and the Central Bank will need to find new operating procedures for implementing its interest-rate policy.

### III. Medium-term problems and opportunities

#### Quotas, fish stocks and some hard choices

A variety of medium-term problems afflict Iceland's fishing industry, and they have come to a head in the 1992/93 fisheries season. Diagram 7 illustrates the main difficulty: the stock of cod, the major fish export, has fallen dramatically. The authorities have been slow to reduce quotas in response to past declines in cod stocks, and, with unusually poor environmental conditions for the cod recruitment in some recent years, further declines in stocks have resulted.

Diagram 7. COD STOCKS AND LANDINGS



Sources: National Economic Institute and Marine Research Institute, *State of Marine Stocks and Environmental Conditions in Icelandic Waters 1992, Prospects for the Quota Year 1992/93*, Reykjavik, June 1992.

Table 10. Fisheries management: quotas, landings and stocks

Thousand tonnes

	1986	1987	1988	1989	1990	1991 <sup>1</sup>	1991/92 <sup>2</sup>	1992/93 <sup>2</sup>
<b>Cod</b>								
Marine Research Institute catch recommendation	300	300	300	300	250	240	250	190
Total allowable catch	300	330	350	325	300	245	265	205
Total landings	369	392	378	356	339	248	259	
Fishable stock, calendar year	852	1 029	1 078	1 058	853	732	636	
Spawning stock, calendar year	268	253	192	271	347	342	250	
<b>Haddock</b>								
Marine Research Institute catch recommendation	50	50	60	60	60	38	50	60
Total allowable catch	60	60	65	65	65	48	50	65
Total landings	48	41	54	63	67	40	45	
Fishable stock, calendar year	126	166	254	248	196	154	187	
Spawning stock, calendar year	65	74	95	122	111	107	97	
<b>Saithe</b>								
Marine Research Institute catch recommendation	60	65	75	80	90	65	70	80
Total allowable catch	70	70	80	80	90	65	75	92
Total landings	66	80	77	82	98	71	81	
Fishable stock, calendar year	311	334	431	432	438	380	373	
Spawning stock, calendar year	186	176	166	163	195	153	217	
<b>Greenland halibut</b>								
Marine Research Institute catch recommendation	25	25	30	30	30	27	25	30
Total allowable catch	30	30	30	30	30	33	25	25
Total landings	31	45	49	59	37	31	29	
Fishable stock, calendar year	242	254	249	223	196	190	183	
Spawning stock, calendar year	108	120	122	112	96	99	80	
<b>Herring</b>								
Marine Research Institute catch recommendation	65	70	90	90	90	80	80	90
Total allowable catch	65	73	90	90	90	80	110	110
Total landings	65	75	93	97	90	85	93	
Fishable stock, calendar year	260	391	448	416	403	395	489	
Spawning stock, calendar year	260	391	448	416	403	395	489	
<b>Capelin<sup>3</sup></b>								
Marine Research Institute catch recommendation	1 280	1 290	1 115	1 065	900	250	740	820
Total allowable catch	1 280	1 290	1 115	1 065	900	312	740	820
Total landings	1 312	1 333	1 116	1 037	808	311	658	

Table 10. **Fisheries management: quotas, landings and stocks** (cont.)

Thousand tonnes

	1986	1987	1988	1989	1990	1991 <sup>1</sup>	1991/92 <sup>2</sup>	1992/93 <sup>2</sup>
<b>Redfish</b>								
Marine Research Institute catch recommendation	85	75	75	75	80	55	90	90
Total allowable catch	100	95	85	77	80	55	90	104
Total landings	87	89	95	92	92	64	99	
<b>Shrimp<sup>4</sup></b>								
Marine Research Institute catch recommendation		30.0	30	20.0	22	28.0	35	35
Total allowable catch		33.4	30	20.9	24.6		35	35
Total landings	30.4	34.7	25.9	22.2	24.6	31.4	34.4	

1. January to August.

2. September to August quota year.

3. Seasons (July of previous year to March).

4. Offshore shrimp.

Source: Marine Research Institute, *State of Marine Stocks and Environmental Conditions in Icelandic Waters 1992; Prospects for the Quota Year 1992/93*, Reykjavik, June 1992 and updates.

This pattern of overfishing – disinvestment in the cod stock – has been a chronic problem for many years.

The Marine Research Institute (MRI) routinely evaluates the stock of fish in Icelandic waters and recommends biologically safe catch levels for the major species each season. For those whose stocks are considered to be unsatisfactory, the MRI recommendations allow for some improvement. The government's final quota determination (the "total allowable catch") has usually been close to the MRI recommendation – for the less important species (Table 10). However, over the past seven seasons, the final quota for cod has consistently exceeded the recommended level by a wide margin. Furthermore, loopholes in the quota system have allowed the actual catch to exceed quota levels – the actual cod catch has exceeded the MRI's recommended levels by an average of about 20 per cent. As a result, fishable stocks have fallen further, and safe catch levels for cod have been driven downward by about 40 per cent over the past four seasons. Since 1991, however, the authorities have had some success in enforcing the quota system. Nevertheless, this past year cod were so scarce that, for the first

time in about a decade, even the rather low level of allowable catch could not be realised.

This overfishing and decline in cod production is similar to the pattern of herring fishing in the 1960s, though not as extreme. As a result of overfishing, the herring catch collapsed late in that decade. However, since then the MRI's recommended catch levels have generally been followed, and the herring catch has been slowly recovering. Although herring's status in the European Economic Area (EEA) agreement is unclear, its biological potential in the remainder of the 1990s is promising.

This improvident management of the cod stock has left Iceland with some hard choices over the next few years. In mid-1992, the National Economic Institute drafted three output scenarios for the remainder of the 1990s (Table 11). Scenario one involved moderate cutbacks from 1991-92 quota levels. Cod stocks would not improve, long-run GDP levels would be impaired, and the indebtedness problem would persist. In the event, the quota fixed for the 1992-93 fisheries year lay ominously close to this scenario. Scenario two involved sharp first-year cutbacks in the cod catch, which would lead to major short-run reductions in GDP relative to the first scenario, but would also restore the cod stock quickly, leading to higher catch levels and much faster growth of output in later years. This scenario would also be the most effective in reducing the overhang of foreign debt relative to GDP. The final scenario involved cutbacks in the cod catch over the next two years that are slightly more moderate than in the second scenario but with little difference in total cumulative catch: the fish stock would be restored somewhat more slowly, but the debt burden would nonetheless be alleviated.

### ***Restructuring of the fishing industry***

Low stocks are only one of the problem's in Iceland's fisheries. The fleet of fishing trawlers expanded sharply in the 1970s, and a loophole in the quota structure encouraged the addition of many small boats in the mid-1980s. Given the lack of any noticeable increase in the catch, substantial excess capacity now exists. This excess capacity is undoubtedly one cause of the industry's poor profitability in recent years (Table 12). Large trawlers and especially freezer trawlers are consistently profitable, but smaller trawlers remain marginal, and the smallest boats have lost money steadily since 1983.



Table 11. **The future of the cod fishery: three scenarios**

Thousand tonnes

	Scenario I			Scenario II			Scenario III		
	Catch	Spawning stock	Fishing stock	Catch	Spawning stock	Fishing stock	Catch	Spawning stock	Fishing stock
1993	220	235	635	150	255	630	175	258	630
1994	220	240	590	180	310	750	175	290	720
1995	220	250	675	200	355	755	175	345	730
1996	220	245	625	225	390	885	200	390	885
1997	220	240	635	250	425	1 000	250	430	1 010
1998	220	245	650	275	485	1 100	275	490	1 110
1999	230	252	660	345	523	1 180	345	530	1 190
Total	1 550			1 625			1 615		
Average real GDP growth in %, 1993-99		0.9			1.5			1.5	
Average current balance as % of GDP, 1993-99		-2.2			-2.1			-2.1	
End-of-period foreign debt as % of GDP		56.7			53.1			52.8	

Source: National Economic Institute.

Table 12. **Profitability of the fisheries, 1983-92**

Per cent of gross income

	1983	1984	1985	1986	1987	1988	1989	1990	1991	Sept. 1992
<b>Net profits<sup>1</sup></b>										
Fishing, total	-9.3	-9.4	-3.8	2.1	1.3	-1.5	-1.8	3.4	8.7	-3.3
Trawlers less than 500 GRT	-11.3	-10.5	-3.9	4.1	5.3	3.6	-2.0	2.6	1.4	-5.9
Trawlers larger than 500 GRT	-11.2	-6.7	-1.1	4.9	7.1	6.1	4.3	10.3	7.6	4.3
Boats	-6.5	-8.6	-4.3	-0.7	-4.1	-8.1	-5.5	-0.9	-1.4	-8.2
Freezer trawlers							4.9	11.2	15.4	5.7
Fish processing, total <sup>2</sup>	-0.4	-7.4	-2.6	3.9	3.6	-6.7	-5.6	1.7	2.7	-6.0
Freezing plants	1.6	-6.6	-3.5	0.4	0.5	-7.8	-1.7	3.9	4.1	-6.8
Saltfish processing	-6.5	-13.1	-0.1	10.9	8.7	-5.3	-11.7	-2.9	0.2	-4.6

1. Gross profits less imputed cost of capital, *i.e.* interest payments and depreciation.

2. With payments into the Fisheries Price Equalisation Fund added to income and payments out of the Fund subtracted from income.

Source: National Economic Institute.

In principle, continued poor profits ought to induce the retirement of smaller boats and trawlers, thereby reducing the share of the fisheries in total employment. In practice, however, the number of fishermen increased in the 1980s, and fleet tonnage did not fall significantly. Further steps were needed, and thus the government instituted several programmes to induce retirement of less efficient tonnage. Limited trading in quota allocations was introduced in 1984, with the hope that less efficient operators might sell their quotas and retire their boats. Trading in quotas was initially relatively modest (Table 13): only about 10 to 15 per cent of quotas changed hands annually in the first eight years of trading. However, a new fisheries management law which took effect on 1 January 1991 put an end to the previous provisions which had allowed vessels in excess of 6 GRT (Gross Registered Tonnage) to choose between catch quotas and effort quotas which were not transferable. Before 1991, more than a third of the total catch of groundfish had been made by vessels choosing effort quotas. Not surprisingly the trading in quotas surged in 1991 – nearly half of the industry's overall quota volume was traded in the 1991-92 fishery year. In November 1992, the government announced plans for a Fisheries Development Fund, which would be authorised to buy fisheries firms and to buy and scrap redundant vessels. (The fund would also assist firms in establishing joint ventures abroad,

Table 13. **Transfers of quotas between vessels, 1984-92**  
As a percentage of total catch<sup>1</sup>

Transfer <sup>2</sup>	1984	1985	1986	1987	1988	1989	1990	1991 <sup>3</sup>	1991/92 <sup>4</sup>
Type A	4.15	3.28	2.62	1.75	3.89	4.98	4.51	12.08	
Type B	3.83	3.36	2.17	1.84	3.03	3.62	2.97	8.99	
Type C	1.08	1.71	1.05	0.11	2.37	2.64	1.39	4.27	
Type D	3.58	5.80	2.65	2.21	4.54	4.31	5.64	7.64	
Total	12.64	14.15	8.49	5.90	13.82	15.55	14.51	32.97	45

1. Quotas are measured in kilograms of cod equivalents and represent both temporary and permanent quota transfers.

2. Type A: Transfers between vessels with the same owner.

Type B: Transfers between vessels with different owners operated from the same port.

Type C: Offsetting transfers of equal value between vessels with different owners.

Type D: Transfers between vessels with different owners operated from different ports.

3. First eight months of 1991.

4. September to August fisheries year.

Source: Ministry of Fisheries.

and in buying fishing rights abroad.) These new programmes will presumably make it easier for less efficient firms to leave the industry, while increasing the overall financial viability of the fisheries. However, the recent quota cutbacks for cod have put considerable short-term financial stress on the industry and will probably lead to increased unemployment among fishermen. The November 1992 devaluation eased these short-term difficulties, but it also may have reduced incentives for rationalisation by increasing the profitability of the least-efficient smaller trawlers and boats.

## Diversification

Iceland has the OECD's smallest economy and therefore suffers from an inevitable lack of diversification. Its small size should call for a substantial amount of foreign trade relative to GDP. However, this effect is offset by the added transportation costs imposed by its remote location. Nevertheless, comparative advantage must be the basis for the industrial structure. In principle, in the absence of regulatory or other impediments to the development of new industries, the optimal pattern of diversification would occur naturally without artificial government promotion. While the government has made some direct attempts to promote economic diversification, over the years it has focused its efforts on the

development of its rich marine resources: exports have been far more concentrated than in any other OECD country and became increasingly so in the 1980s (Table 14). This focus on fisheries has been accentuated by the special lower payroll tax rate enjoyed by the sector (along with agriculture and manufacturing), which may have inhibited the development of the services sector. While it has generated one of the highest per capita incomes in the OECD, such a lack of diversification also has drawbacks. The vagaries of fish stocks and prices have made the economy one of the most volatile in the OECD (Diagram 8). Iceland has partially buffered year-to-year changes in export earnings by adjusting its national savings; nonetheless, real personal consumption growth is by far the most volatile in the OECD.

More seriously, overfishing and, to some extent, environmental conditions in 1988-90 have caused available stocks of cod to trend downward over the past five years. Some recovery is possible if quotas are reduced further, but it is highly improbable that cod stocks will return to the levels of the 1960s. The manpower and fleet now devoted to the fisheries far exceed levels necessary to support landings expected over the rest of the 1990s. Labour and capital resources need to be freed up and reallocated to other sectors, if stagnation is to be avoided over the next decade.

While fish are clearly its most important resource, the country also has abundant hydroelectric and geothermal energy resources – still mostly untapped. The government has taken an active role in encouraging further investment in aluminium smelting and has begun to explore the possibility of electricity exports via cable to Scotland and/or the Netherlands. However, construction of a new smelter has been held up because of the weakness of aluminium prices, and investment in an electricity export project would probably not begin before the mid-1990s at the earliest, even were it to be approved. Such large-scale projects may have big payoffs if and when they are put in place, but they have long lead-times (the electricity export project would take as long as seven years from start-up to reach full capacity) and are relatively capital-intensive and therefore not likely to employ large numbers of Icelandic workers directly on an ongoing basis, once construction is complete. Broader diversification is needed to increase output and employment outside of fisheries<sup>14</sup>. Over the past decade, Iceland's performance in this respect has been mixed. Exports have become more concentrated, while output and employment have become more diversified (Table 15).

Table 14. Commodity concentration of foreign trade in smaller OECD countries<sup>1</sup>

	Exports							Imports						
	1980-85	1986	1987	1988	1989	1990	1991	1980-85	1986	1987	1988	1989	1990	1991
Iceland	1.8	1.6	1.6	1.8	1.7	1.6	1.4	5.9	5.2	4.5	4.6	5.2	5.0	5.0
Denmark	5.3	5.3	5.4	5.3	5.3	5.2		6.1	5.4	5.6	5.7	5.6	5.4	
Norway	3.1	3.8	4.1	4.4	3.8	3.4	3.3	4.9	4.2	4.3	4.3	4.0	4.1	4.5
Sweden	3.8	3.5	3.6	3.6	3.7	3.6	3.7	5.3	4.8	4.6	4.4	4.3	4.5	4.7
Finland	4.2	3.8	3.7	3.5	3.4	3.4	3.4	5.0	4.9	4.8	4.5	4.4	4.6	5.1
Australia	4.5	4.6	4.8	5.8	5.8	6.0	6.2	4.6	4.3	4.6	4.2	3.9	3.9	3.9
Austria	4.1	4.0	4.0	3.9	3.9	3.7	3.7	5.6	5.0	4.8	4.5	4.5	4.4	4.3
BLEU	5.3	5.2	5.1	4.8	4.7	4.8	5.0	6.3	5.8	5.6	6.2	6.1	6.1	6.1
Greece	5.5	5.4	5.4	5.4	5.9	6.0	5.9	5.1	5.8	5.9	5.3	5.2	5.3	5.2
Ireland	5.4	5.2	5.0	5.1	5.1	5.2	5.3	5.9	5.6	5.3	5.2	4.7	5.0	5.1
Netherlands	6.2	6.6	6.5	6.3	6.4	6.4	6.5	6.2	6.0	6.0	5.9	5.8	5.6	5.5
New Zealand	3.2	3.3	3.3	3.5	3.6	3.6	3.5	5.1	4.4	4.3	4.5	4.2	4.2	4.7
Portugal	5.6	5.0	4.7	4.9	5.0	4.8		5.5	5.7	5.1	4.6	4.7	4.7	
Spain	5.2	5.2	5.3	5.0	4.7	4.5	4.1	4.4	5.7	5.2	4.7	4.7	4.7	4.8
Switzerland	4.3	4.2	4.2	4.2	4.3	4.2	4.2	5.6	5.1	4.8	4.7	4.7	4.8	4.8
Turkey	4.7	5.0	5.3	5.0	5.1	4.8	4.9	3.8	4.5	5.2	5.1	5.7	5.2	5.0
EFTA <sup>2</sup>	3.9	3.9	3.9	3.9	3.8	3.7	3.7	5.4	4.8	4.7	4.5	4.5	4.5	4.6
OECD <sup>2</sup>	4.4	4.0	4.1	4.0	4.0	4.0	3.9	5.2	5.1	5.1	5.0	5.0	5.0	5.0

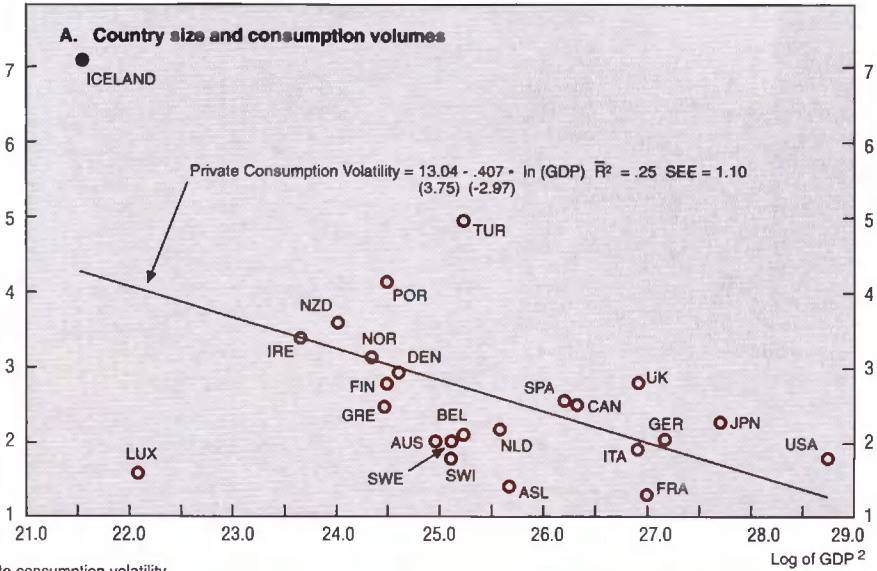
1. Based on the Herfindahl index:  $\sum 1/X_i^2$ , where  $X_i$  is the share of commodity  $i$  in total exports (imports).

2. Trade-weighted average of Member country concentration.

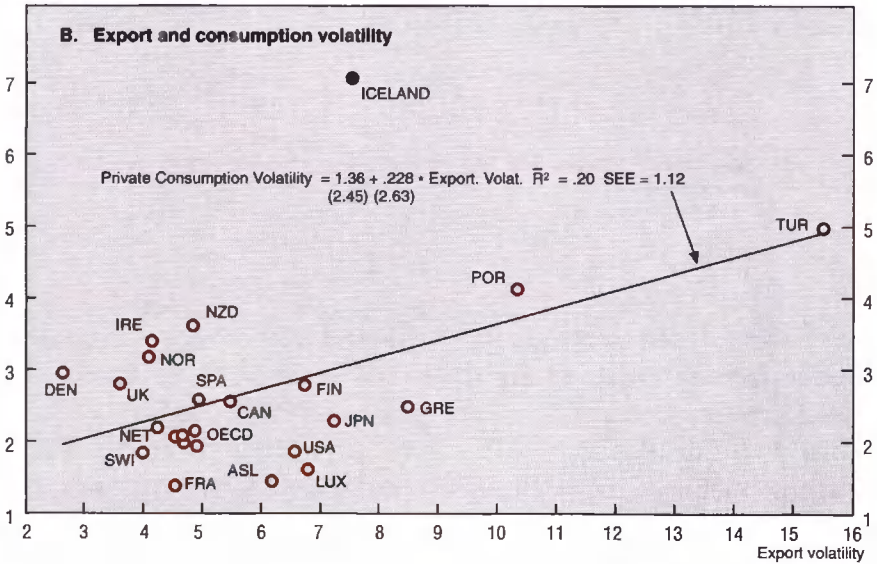
Source: OECD, *Foreign Trade Statistics, Series C*.

Diagram 8. **COUNTRY SIZE AND THE VOLATILITY OF REAL EXPORT AND CONSUMPTION GROWTH** <sup>1</sup>

Private consumption volatility



Private consumption volatility



1. Volatility is defined as the standard deviation of the annual percentage growth rates from 1970 to 1991.  
 2. GDP in dollars at purchasing power parities, average 1970 to 1991.  
 Source: OECD.

**Table 15. Sectoral output, employment and productivity**

In per cent

	1980	1984-86	1987-88	1989	1990	1991
Output shares						
Agriculture	5.0	5.1	4.6	4.5	3.7	3.6
Fishing and processing	16.2	12.0	13.0	12.6	12.7	11.7
Manufacturing	12.3	11.8	11.0	10.5	10.1	10.0
Construction	8.9	8.0	7.8	7.9	7.7	7.9
Trade	10.4	10.7	11.1	10.4	10.8	11.0
Other services	47.2	52.4	52.5	54.1	55.0	55.8
All industries	100.0	100.0	100.0	100.0	100.0	100.0
Employment shares						
Agriculture	7.9	6.2	5.2	5.1	4.9	4.9
Fishing and processing	14.3	13.2	12.3	11.8	11.8	11.7
Manufacturing	15.2	14.5	13.7	12.8	12.5	11.6
Construction	10.2	9.5	9.3	9.8	9.9	9.7
Trade	13.4	14.9	15.9	14.9	14.5	14.7
Other services	39.0	41.7	43.7	45.6	46.3	47.4
All industries	100.0	100.0	100.0	100.0	100.0	100.0
Productivity growth						
Agriculture	18.7	10.7	3.6	5.7	-13.4	-1.7
Fishing and processing	4.5	8.5	8.5	-2.1	2.8	-5.3
Manufacturing	3.0	1.2	3.6	1.8	1.0	8.8
Construction	8.3	2.0	3.6	-3.3	-1.5	5.9
Trade	0.0	-0.5	2.3	3.2	7.6	2.2
Other services	-1.8	1.6	1.7	-0.1	2.1	0.7
All industries	2.1	2.8	3.3	0.7	1.9	1.5

Sources: Statistical Bureau of Iceland, *Statistical Abstract of Iceland 1992* and National Economic Institute.

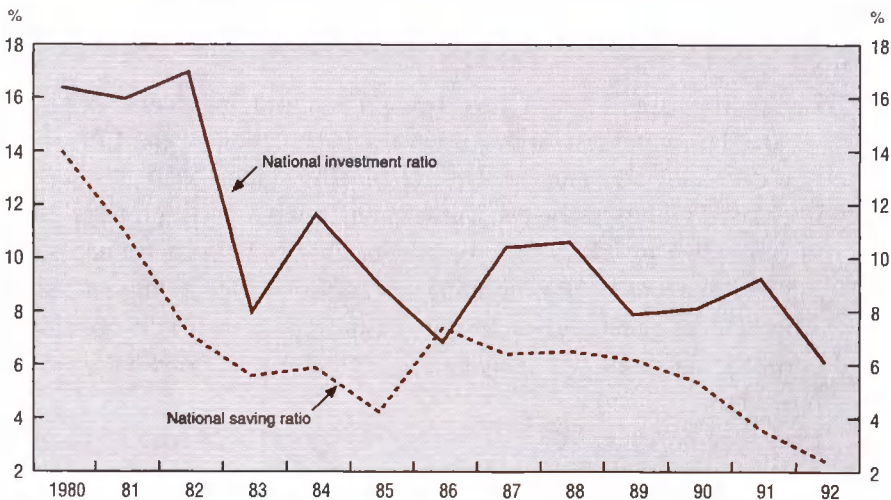
The service sector, and tourism in particular, expanded rapidly – and tourism is expected to increase further in importance in coming years. In March 1992, a 70-year-old ban on service calls by foreign fishing vessels was finally lifted, and the prospects for developing a servicing industry appear favourable. However, the woollens industry contracted sharply in the 1980s, and the recent world economic slowdown has led to reduction in aluminium and ferrosilicon output. Overall, output of manufacturing (outside of fish processing) increased only sluggishly in the 1980s, and its share of output fell markedly. Recently, a fledgling computer software industry has emerged.

## Saving and investment

At the heart of the diversification problem has been a variety of impediments to higher private-sector savings and their efficient allocation. First, from the beginning of the 1970s to the mid-1980s the authorities set interest rates below overall inflation, and in response the personal saving rate fell sharply. More recently, real returns on personal saving have been much higher, but weak real income growth and a more youthful labour force have kept the personal saving rate low. Government saving has also deteriorated over the last 12 years, as public consumption rose from 16 per cent of GDP in 1980 to 22 per cent in 1991. Accordingly, the overall national saving rate fell from 14 per cent in 1980 to 2¼ per cent in 1992 (Diagram 9).

In principle, imported capital could make up for the decline in domestic savings since the early 1980s: domestic investment need not have been constrained. Indeed, the current-account balance fell markedly in the early 1980s; at the same time, however, private investment also declined sharply relative to GDP

Diagram 9. NATIONAL SAVING AND INVESTMENT RATES <sup>1</sup>



1. As a percentage of national disposable income.

Source: OECD.



– credit was rationed at artificially low interest rates via Investment Credit Funds (ICFs). The system of allocation was rather inflexible, channelling capital into sectors where rates of return were relatively low. One sector where investment was clearly unproductive was the fisheries, where large numbers of small boats were added to the fleet from the mid-1980s to exploit loopholes in the quota system. Another is the housing sector, where subsidies through the housing funds and tax credits on mortgage interest have made residential investment extremely attractive: as a result, Iceland's homeownership rate is one of the highest in the OECD<sup>15</sup>.

Since the early 1980s, the government has stopped subsidising most of the ICFs, and direct mortgage subsidies have also been reduced; however, tax credits on mortgage interest remain. This has not led to a surge of investment in formerly neglected sectors, in part because deregulation of interest rates, tighter credit conditions and loose fiscal policy caused a surge in real interest rates in the late 1980s. Real rates remain high even in the current recession, due to public-sector borrowing and the large spread between banks' borrowing and lending rates. The wide spreads are primarily a consequence of the lack of competition in the previously closed financial markets, although the recession may also be hindering movement toward narrower spreads.

A variety of regulatory changes in 1993 have reduced capital costs and lowered business taxation in new industries:

- Long-term capital flows have been liberalised in several steps since 1990. The final phase is due upon implementation of the EEA, but, in any case, no later than at the end of 1993. Short-term flows will be liberalised within two years. These changes will open up foreign sources of funds and are likely to force greater efficiency upon Iceland's banking and financial sector, bringing lower borrowing/lending spreads.
- Abolition of the turnover tax on businesses, along with reduction of corporate tax rates, will increase the profitability of potential investment projects.
- Under the provisions of a bill before Parliament commercial and savings banks would have more freedom to own equity in non-financial business, and the cost of equity capital may fall as a result. (Bank holdings of equities had constituted only 1.5 per cent of total privately held assets.)

However, two impediments continue to restrain the pace of diversification. First, the large Treasury deficit since 1991 is diverting domestic savings away from private investment. Second, there remain regulatory barriers hindering direct foreign investment inflows. For reasons of sovereignty, foreigners are not allowed to own real estate for non-business-related purposes, primary fish processing or to invest in the fishing or energy industries. However, a more important constraint on diversification is the requirement that a majority of shares in domestic ventures must be owned by Icelandic residents, and a majority of the board of directors as well as the managing director must also be residents. Legislation is pending to relax this restriction.

The government has recently established several programmes to help reduce excessive reliance on traditional fishing centered on the continental shelf around Iceland. It is supporting research involving trial fishing of underutilised deepwater species and is helping to assess the feasibility of investment in other nations' fishing industries. More generally, the government has increased funding for research projects on diversification through Iceland's National Research Council, through the National Export Council and at the University of Iceland. Finally, the authorities have recognised the potential for alleviating the focus on marine resources offered by the European Economic Area and have budgeted Ikr 50 million for a marketing push to help firms take advantage of it.

## **The impact of the EEA**

On 2 May 1992 representatives of the 12 members of the European Community and those of the European Free Trade Association signed an agreement to form a European Economic Area (EEA) as of 1993. Iceland's parliament, the last to vote on the accord, approved it in January 1993, but by then the Swiss population had already rejected it in a December 1992 referendum. It will therefore have to be renegotiated this year before taking effect. In any case, all the other non-EC signatories have indicated a wish to join the Community, in contrast with Iceland's declared policy: the EC Common Fisheries Policy is viewed as fundamentally incompatible with its national interest.

The EEA will have far-reaching effects. Put simply, non-EC members will have virtually complete access to the EC market for their goods, services, capital and labour, on the condition that they accept all existing and future EC directives

and regulations in the Single-Market programme (except those pertaining to the Common Agricultural Policy and the Common Fisheries Policy) and make certain financial contributions<sup>16</sup>. Thus, legislation must be harmonised in the areas of competition policy, transportation, financial markets, consumer and environmental protection and labour markets. While Iceland, along with the other EFTA members, has benefited from free trade with the EC in industrial products since 1972 and from tariff preferences on some fish exports to the EC under the so-called "Protocol 6", the EEA will be far more influential in opening up and integrating the Icelandic economy into the wider European economy. When the EEA comes into force, EC tariffs on Iceland's marine exports will fall by 76 per cent relative to 1990, with the earliest and largest decline on fileted fish<sup>17</sup>. Thereafter, further annual tariff reductions will ultimately bring EC tariffs down to only 10 per cent of their 1990 levels. While this will lower EC consumer prices for fish, the larger effect will be to raise producer returns, as they shift supplies to EC markets from those with lower prices and duty payments shrink. Total amounts available to EC markets are unlikely to increase very much, however, because of the inelastic nature of supply<sup>18</sup>. A fisheries rights accord reached with the EC will allow Icelandic ships the right to fish for 30 000 tonnes of capelin in EC waters in exchange for a quota of 3 000 tonnes of ocean redfish for EC trawlers in Icelandic waters. Iceland is also expected to benefit from the removal of all technical barriers, from cheaper imports, especially of intermediate services, from efficiency gains in manufacturing industry (given that only 8 per cent of all firms in this sector in 1988 had more than 20 employees) and in the distributive trades sector, particularly at the wholesale level, and from the opening up of air and other transport to cabotage possibilities. Yet some sectors, shipbuilding in particular, will face increased competition resulting from the EEA.

However, existing non-tariff barriers are more related to financial-market restrictions than to product-market imperfections (Gudmundsson, 1992), and it is the financial sector which will probably be the most affected<sup>19</sup>, as deregulation continues apace. New legislation is being prepared in the areas of banking, insurance, securities transactions, foreign exchange, the stock exchange and capital flows. Nevertheless, Iceland has been granted a number of extensions of time before compliance with the EEA provisions will be required. First, it was given a two-year transition period before it must liberalise its short-term capital

flows and three years to open up to inward direct investment, except in the fisheries and fish processing where a permanent exemption has been authorised. Also, Iceland was uniquely allowed an additional two years to adopt the first and second banking directives (regarding mutual recognition of authorisation and home-country control) and, along with several other countries, an extra three years to comply with capital requirements and solvency ratios on depository institutions<sup>20</sup>. Finally, given the underdeveloped nature of its securities markets, two extra years were granted before securities-market directives have to be adopted. However, in February 1993 Parliament enacted three new acts on the securities market which will enter into force on 1 July 1993. The new acts are based on the relevant EC directives and do not make use of the transition periods in this area granted in the EEA Agreement. Furthermore, the government has introduced in Parliament a bill on commercial and savings banks based on the first and second EC banking directives. The bill stipulates that Iceland will not make use of the transition period in this area granted in the EEA Agreement.

Estimates are that financial integration in Europe will add 0.6 per cent to Iceland's GDP (Ems, 1992), while the aggregate effect of non-fisheries nontariff-barrier (NTB) reduction will raise GDP by up to 1 per cent in the long run (National Economic Institute – NEI). The overall macroeconomic impact of the EEA may be to raise long-run GDP by 1/2 to 1 1/2 per cent, depending primarily on the size of the aforementioned NTB reduction effect. However, in all scenarios examined by the NEI, the demand for labour would be lower.

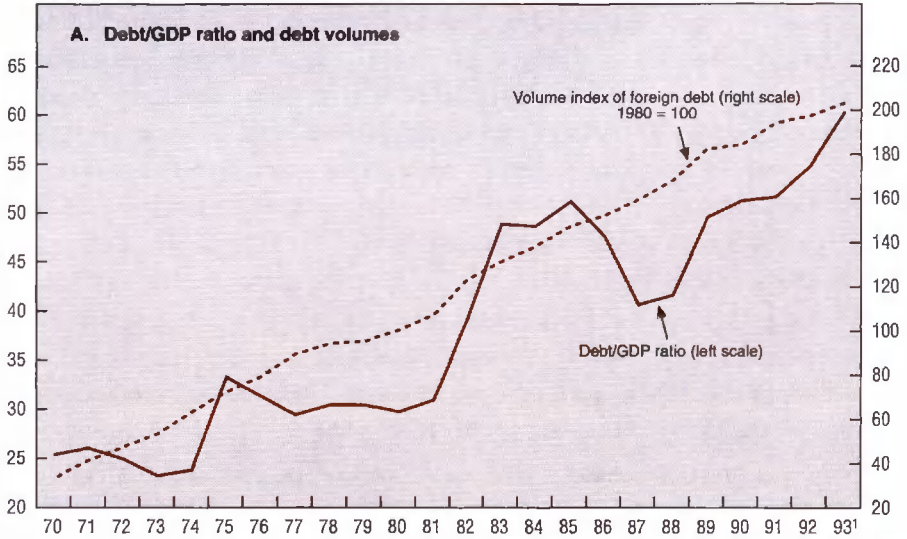
## **The increasing burden of foreign debt**

Icelanders have had fairly steady recourse to foreign borrowing to finance the government and current-account deficits. The volume of this debt has risen substantially over the years (Diagram 10), and questions have been increasingly raised as to its sustainability. Long-term debt of \$ 3.6 billion recently represented 55 per cent of GDP, more than double its 1970 share and among the highest in the OECD area. Projections indicate that the trend increase will not be reversed in the very near future, with a level of 60 per cent of GDP in sight for end-1993. While the nation is a net creditor on short-term capital account, that position is quite small, so that the overall net external position is about 90 per cent of the long-term debt level. Over half the total funded debt is denominated in dollars,

Diagram 10. LONG-TERM FOREIGN DEBT AND ITS SERVICE

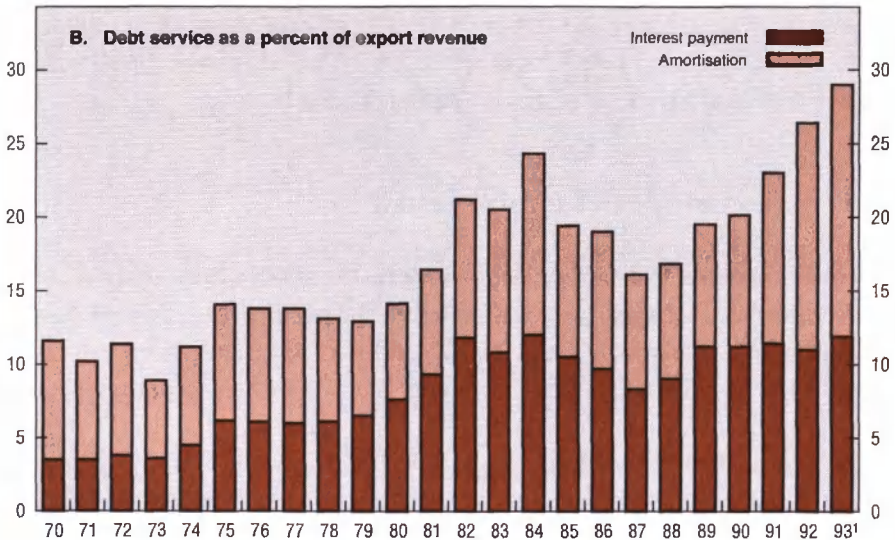
% of GDP

1980 = 100



%

%



1. Data for 1993 are projections.

Source: Central Bank of Iceland.

with a further fifth in Deutschemarks. Through the 1980s an increasing proportion has been at floating interest rates (62.4 per cent at end-1991). Principal repayments have surged in recent years and look set to remain at a high level for at least the next five years.

If most of the corresponding capital imports had been used for investment purposes with a view to building up export capacity, such trends would not be of concern. However, that does not appear to have been the case: the investment share of GDP has fallen steadily over the past decade, and export growth has not kept pace with foreign indebtedness. Total debt service has taken an increasing share of export revenue over time, especially since 1987, the recent peak in the export cycle. Nevertheless, most of that increase is the result of greater amortisation, as the average maturity of the foreign debt has fallen from 12½ to 10 years in the five years to 1992. The interest burden was 11 per cent of export revenue in 1992, up from 10.2 per cent in the previous five years.

That most of the imported capital has been used for current consumption purposes is also suggested by a sectoral examination of indebtedness. About 59 per cent of all external debt is owed by the public sector. About two-thirds of public-sector debt is attributable to the Treasury and most of the rest to public non-financial enterprises<sup>21</sup>, with the reserves of the Central Bank offsetting about a quarter of the public-sector indebtedness. Municipalities have incurred relatively modest amounts of foreign debt. Financial institutions are fairly heavy net debtors, led by the Investment Credit Funds (ICFs) for long-term debt and the commercial banks for short-term debt. The non-financial private sector is responsible directly for only about one tenth of net external debt (although most of the proceeds of ICF borrowing are subsequently relent to the private sector). Most of this was incurred in the transport sector (Icelandair).

## **IV. Health care and other aspects of the social-security system**

As it has in most other OECD countries, Iceland's system of health care has become a subject of preoccupation in recent years. While the public is largely satisfied with both the accessibility and the quality of care it receives<sup>22</sup>, the authorities are increasingly concerned with the expense of operating a largely open-ended and free system, especially in the context of economic stagnation which has afflicted the country in the past five years. While many of the problems faced by the system are to be found in other OECD countries, Iceland is confronted with several which are peculiar to its situation: a very small and fairly isolated country whose population is largely confined to the capital region, with the remainder rather remotely located.

While there is room for improvement in some aspects of the health-care system, it is fairly efficient in delivering high-quality care to the entire population at an overall cost which is only modestly above the average of OECD countries. Nevertheless, over the longer term, certain immutable traits of the demand for health-care services, in particular the tendency for demand to grow more than proportionally with income will make it increasingly difficult to finance their provision without changing the system by introducing elements of competition among providers and relying to a greater extent on user-pay measures or even by imposing a global budget constraint.

### **Overview of the health-care system**

Many of the characteristics of the Icelandic health-care system are shared with other Nordic countries. All residents are covered by public health insurance as determined by the 1971 Act on social security. About 87 per cent of total

medical billings are paid by the public purse, a share that had been gradually rising until the late 1970s, but which has been declining since 1984. While hospital treatment is free, patients face co-payments for most ambulatory care, as well as for pharmaceuticals. The delivery of care is rather decentralised – local communities participate through a system of municipal health boards – but the role of central government in the planning and co-ordination functions is relatively strong. In 1990, primary health care was further centralised, with the State taking over complete financial responsibility in this domain, but a return of some functions, for example nursing-home care, to the municipalities is a possibility. Ambulatory care is provided in out-patient clinics in major hospitals and by privately practicing specialists. Primary health care is mainly provided by a network of some 70 public health centres<sup>23</sup>, but these are supplemented by private general practitioners in the capital area.

Despite its population of some 260 000, there are some 25 hospital units in Iceland, but only a few are of substantial size. 62 per cent of hospital beds are in the public sector (about half are administered by the State and half by local authorities), with the remainder catering primarily to the needs of the elderly, handicapped and alcoholics and others in need of rehabilitation. Even in a small country such as Iceland, there is a problem of regional distribution of hospital services: occupancy rates are low in many of the frequently more modern hospitals located outside the Reykjavik area, at the same time as the capital's three

Table 16. **Care of the elderly**

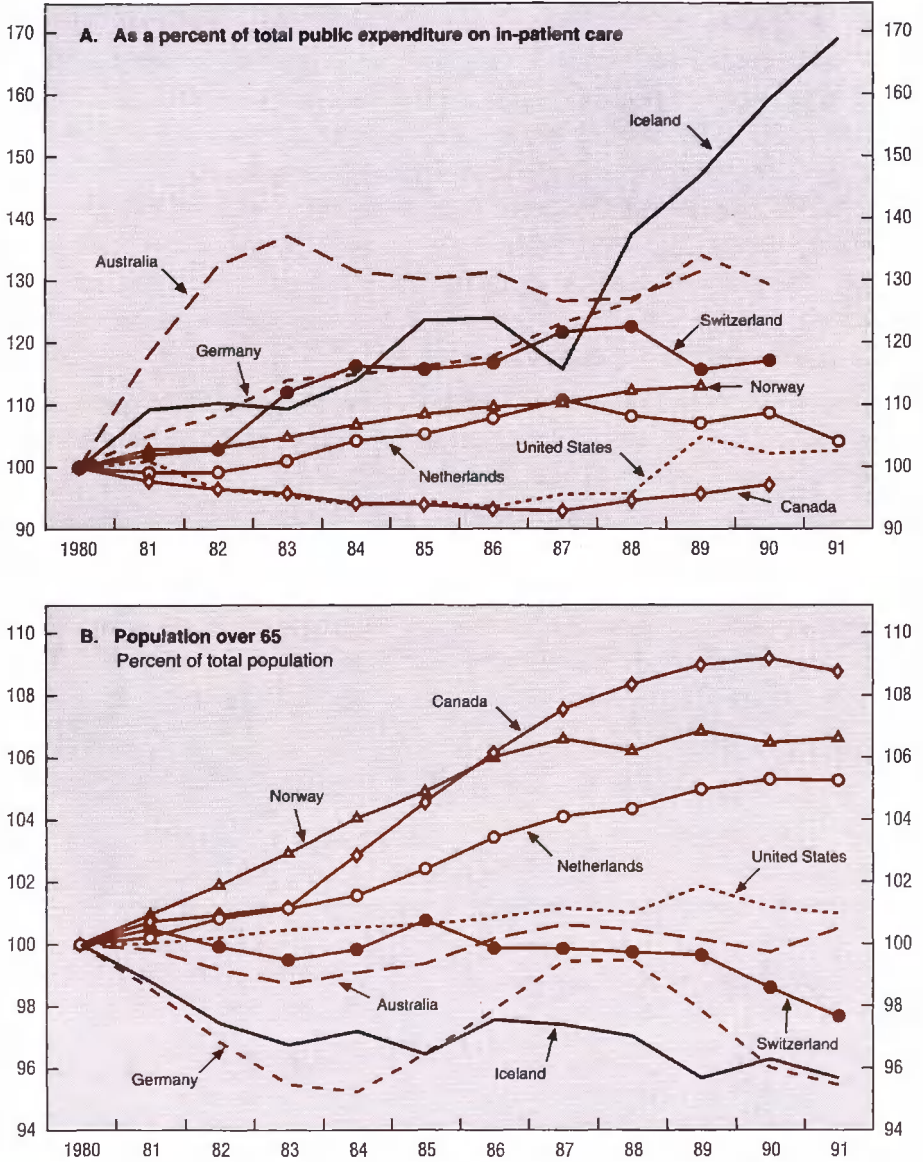
Per cent

	Iceland	Denmark	Finland	Norway	Sweden
<b>A. The housing situation of those over the age of 65, 1984-91</b>					
Live in own homes	87.2	91.3	92.5	89.2	91.4
Live in institutions	9.7	5.0	6.2	6.8	3.0
Live in other residences for the elderly	3.1	3.7	1.3	4.0	5.6
<b>B. Share of those over the age of 65 who received some home health care, 1990</b>					
	12.6	24.6	21.4	19.0	17.5

Source: Surgeon General of Iceland.



Diagram 11. PUBLIC EXPENDITURE ON NURSING-HOME CARE  
1980 = 100



Source: OECD.

main hospitals are faced with excess demand and waiting lists for some procedures.

As intimated above, Iceland has an unusually high proportion of hospital beds given over to chronic care of the elderly. Indeed, nearly twice as many as in other Nordic nations of those over the age of 65 are institutionalised (Table 16). This appears to be due to insufficient recourse to home health care: there is a lack of co-ordination with those providing social assistance, a responsibility of the local authorities<sup>24</sup>. The result has been an explosion in public expenditure on nursing-home care, especially since 1987, despite unusually favourable demographic developments in recent years (Diagram 11): the share of the population aged 65 and over – 10.7 per cent in 1990 – is the lowest in the OECD except Turkey. Although most other countries, including the other Nordics, were reversing the upward trend in such expenditures by the late 1970s, in Iceland no such brake has been observed.

## Outcomes

Iceland has managed to turn in an enviable record of health outcomes (Table 17), possibly thanks to what is largely a relatively healthy diet and life style<sup>25</sup>, a relatively low volume of per-capita consumption of pharmaceuticals<sup>26</sup>, not to mention the excellent average level of training of the health-services professions as well as a systematic preference for preventive medicine<sup>27</sup>. For example, life expectancy at birth and at age 60 have been consistently above levels seen elsewhere, although there has been a noticeable slowdown in the trend improvement in recent years, especially for females, leading to a significant reduction in Iceland's lead. Second, the rates of infant and perinatal mortality have been well below OECD averages, although here, too, there is some evidence of catch-up by other OECD countries<sup>28</sup>. Finally, the incidence of premature deaths (that is before the age of 65) due to illness is low and, as elsewhere, is continuing to decline at a reasonably steady pace. The occurrence of heart disease has been successfully reduced by a factor of nearly three since 1970; however, rather less success has been had in controlling the spread of cancer.

Table 17. Comparative health outcomes

		1960	1973	1980	1985	1990
<b>A. Life expectancy</b>						
<b>Iceland</b>						
Life expectancy at birth	- Male	70.7	71.6	73.7	74.7	75.7
	- Female	75.0	77.5	79.7	80.2	80.3
Life expectancy at age 60	- Male	18.6	18.6	19.4	19.5	20.0
	- Female	20.4	21.7	23.0	22.9	23.3
<b>Simple OECD average</b>						
Life expectancy at birth	- Male	67.9	69.2	67.8	68.9	73.1
	- Female	73.0	75.5	74.0	75.1	79.4
Life expectancy at age 60	- Male	16.3	16.4	16.3	16.8	18.3
	- Female	19.1	20.2	20.4	21.0	22.7
		1960-64	1970-74	1980-84	1985-89	1990-91
<b>B. Perinatal and infant mortality<sup>1</sup></b>						
<b>Iceland</b>						
Perinatal mortality		2.3	1.8	0.8	0.7	0.5
Infant mortality		1.7	1.2	0.7	0.6	0.6
<b>Simple OECD average</b>						
Perinatal mortality		3.0	2.1	1.2	0.9	n.a.
Infant mortality		2.8	1.8	1.0	0.9	n.a.
		1960-64	1970-74	1980-84	1985-89	1990
<b>C. Incidence of premature death due to illness<sup>2</sup></b>						
<b>Iceland</b>						
		50.4	38.8	25.5	22.6	20.3
<b>Simple OECD average</b>						
		69.5	52.0	35.5	31.1	n.a.

1. Per cent of live and still births and live births alone, respectively.

2. Potential years of life before age 65 lost per thousand people under the age of 65.

Source: OECD.

## Costs and financing

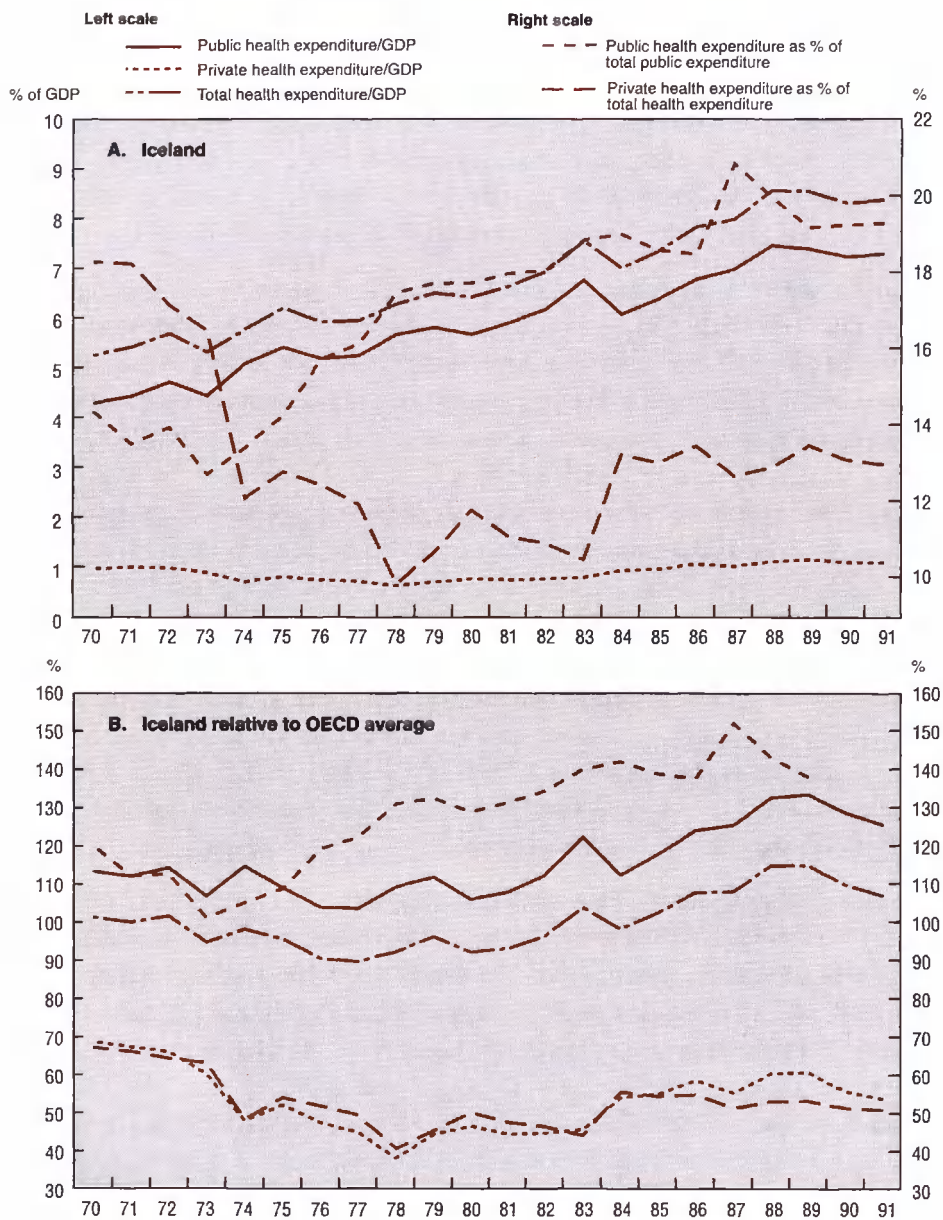
The pecuniary cost of achieving such outcomes has been high and increasing over time in Iceland as elsewhere. By 1991, total health spending reached 8.4 per cent of GDP<sup>29</sup>, an increase of nearly 2 percentage points in the previous

decade and double the average figure recorded in the first half of the 1960s. Although there was a shift toward the public share of financing in the 1970s, this was partly reversed in the first half of the 1980s, and the private share is only about half the OECD average (Diagram 12). Nevertheless, the proportion of total public expenditure allocated to this function rose rather steadily from the mid-1970s, reaching a peak of over 20 per cent in 1987, well above levels seen elsewhere in the OECD. Since then, this growth has been reined in through a number of measures which will be examined in greater detail below.

Given the very high rate of inflation experienced in recent decades, the average rates of increase in health-care expenditures has been rather startling in nominal terms – 43 per cent per year since 1970, for example (Table 18). However, even adjusting for average inflation in the economy, health expenditures have risen some 7 per cent per year over this period. Partly, this reflects changes in relative prices: medical-care prices have increased an average of 0.8 percentage points per year faster than those than elsewhere in the economy. However, growth in the volume of care provided of some 6 per cent per year accounts for the bulk of the growth of health-care spending in excess of average inflation. Population growth accounts for a bit more than 1 per cent of this, leaving an average annual increase in the volume of per-capita expenditure of nearly 5 per cent. This is well above the corresponding growth rate in real per capita GDP<sup>30</sup>. The implied long-run average (arc) elasticity of volume expenditure with respect to real income has been of the order of 1.5, but econometric evidence presented in Annexes I and II indicates that even this estimate may be slightly lower than the true underlying value.

Several other features of the evolution of health-care expenditures are worth noting. First, there has been some tendency for volumes to slow over time: the average annual volume increase over the period 1975-1990 was, at 5.5 per cent, over one-third less than what had been experienced during the previous fifteen-year period. Furthermore, the slowdown has been reinforced in recent years, in line with the nation's overall economic stagnation, as health-care volumes have not increased since 1988. Second, superimposed on this decelerating trend has been a stabilisation in relative prices in the 1980s, although during the latter half of the decade the relative price of dental care moved up strongly. Third, spending pressures have been especially strong in dental services, pharmaceutical consumption<sup>31</sup> and nursing and convalescence homes (13.8 per cent of the total in

Diagram 12. TOTAL EXPENDITURE ON HEALTH, 1970-91



Source: OECD.

Table 18. **Health-care expenditures in Iceland**

Average annual growth rates

	1960- 1965	1965- 1970	1970- 1975	1975- 1980	1980- 1985	1985- 1990 <sup>1</sup>	1970- 1990 <sup>1</sup>
<b>Nominal expenditure</b>							
Total	24.6	20.6	40.5	51.4	54.3	27.2	43.0
Private expenditure	19.4	19.8	30.8	48.9	57.5	27.4	40.6
Inpatient care	24.6	29.7	39.9	60.2	51.8	27.0	44.2
Dental services	35.7	68.6	47.7	51.6	40.1	51.6	
Pharmaceutical consumption			43.7	52.6	61.9	28.8	46.2
<b>Real expenditure<sup>2</sup></b>							
Total	10.9	7.1	9.9	7.5	4.5	5.9	6.9
Private expenditure	6.3	6.4	2.4	5.8	6.6	6.0	5.2
Inpatient care	10.9	15.1	9.5	13.7	2.8	5.7	7.8
Dental services		20.4	31.9	4.9	2.6	16.6	13.4
Pharmaceutical consumption			12.4	8.3	9.7	7.2	9.4
<b>Relative prices<sup>3</sup></b>							
Total	0.7	0.2	1.8	1.9	-1.4	0.9	0.8
Private expenditure	0.7	0.2	1.8	1.9	-1.4	0.9	0.8
Inpatient care	2.3	-0.7	1.7	1.7	-1.9	1.1	0.6
Dental services	2.3	4.4	-4.8	3.0	-1.6	3.4	-0.1
Pharmaceutical consumption	2.3	-0.7	0.1	2.0	-0.6	0.9	0.6
<b>Volumes<sup>4</sup></b>							
Total	10.2	6.9	8.0	5.5	6.0	4.9	6.1
Private expenditure	5.6	6.1	0.6	3.7	8.1	5.0	4.3
Inpatient care	8.4	15.9	7.6	11.8	4.8	4.5	7.2
Dental services		15.4	38.5	1.8	4.3	12.7	13.5
Pharmaceutical consumption			12.3	6.2	10.4	6.3	8.7
<b>Volumes per capita<sup>4</sup></b>							
Total	8.2	5.6	6.6	4.5	4.8	3.7	4.9
Private expenditure	3.8	4.9	-0.8	2.8	6.9	3.8	3.2
Inpatient care	6.5	14.6	6.2	10.8	3.7	3.3	5.9
Dental services		14.0	36.7	0.9	3.1	11.4	12.2
Pharmaceutical consumption			10.8	5.2	9.1	5.0	7.5
<b>Memorandum items:</b>							
Real GDP	7.1	2.4	6.3	6.7	1.7	3.3	4.5
Real GDP per capita	5.2	1.2	4.9	5.8	0.6	2.1	3.3
GDP deflator	12.3	12.7	27.8	40.8	47.7	20.2	33.7

1. Data for 1990 are preliminary.

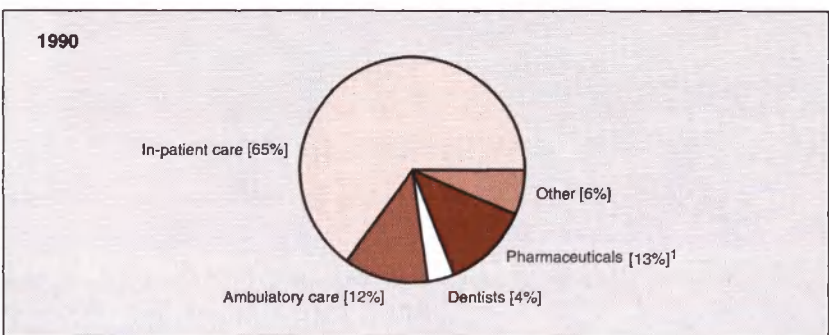
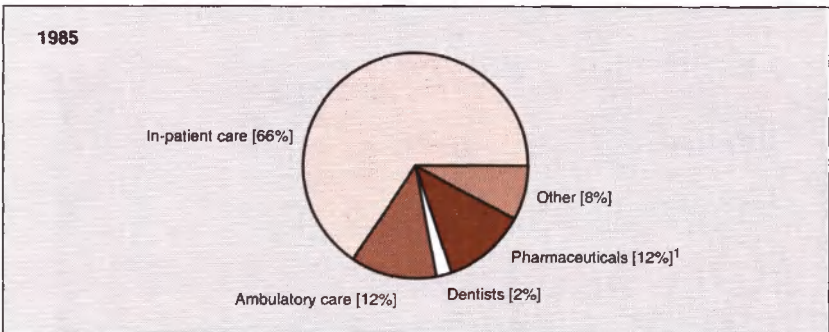
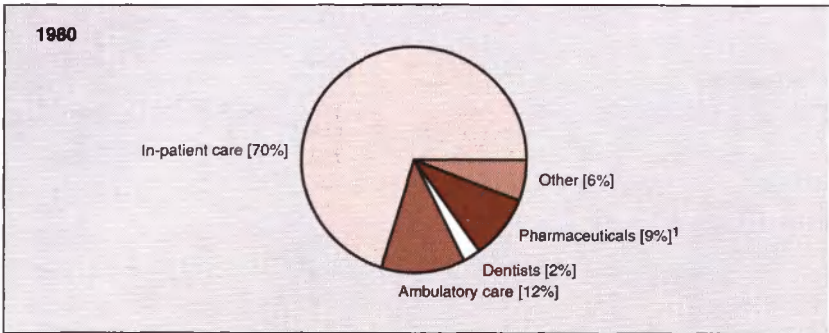
2. Nominal health-care expenditure divided by the GDP deflator.

3. Medical price deflators divided by the GDP deflator.

4. Real expenditure divided by relative prices, or, equivalently, nominal expenditure divided by the appropriate medical price deflator.

Source: OECD.

Diagram 13. WHERE THE MONEY GOES



1. Includes therapeutic appliances.

Source: OECD.

1991, compared to 8.5 per cent in 1980), while it has been the costs of hospital inpatient care which have slowed most noticeably during the 1980s (Diagram 13). This was indeed a necessary improvement, given that in 1990, like other Nordic countries, Iceland had a very high share of aggregate health-care expenditures allocated to inpatient care.

### *An international comparison*

Iceland spent the equivalent of \$1 391 (in purchasing-power-parity terms) per person in 1991 on health care, the eighth highest in the OECD, compared with its tenth place in the per capita real income ranking in that year. This represented 8.4 per cent of GDP, compared to an OECD average of 7.8 per cent (Diagram 14). Furthermore, while Iceland's level of per capita real income is among the lowest of the Nordic nations (except Norway), it has had significantly higher per capita medical spending of any except Sweden, as it has since the late 1970s. Part of this can be explained by high medical-care prices in Iceland: on a purchasing-power-parity basis the price level in 1990 was higher than anywhere in the OECD except the United States and Switzerland, nearly 10 per cent above the average in the OECD excluding the United States (Diagram 15)<sup>32</sup>. Drug prices were particularly high due to unusually wide distribution margins at both wholesale and retail levels, and despite low consumption per-capita, drug costs were extremely high in comparison to both Nordic and OECD averages. Once corrected for this price disadvantage, the level of per-capita expenditure in volume terms is indeed quite modest, about 15 per cent below the (weighted) OECD average.

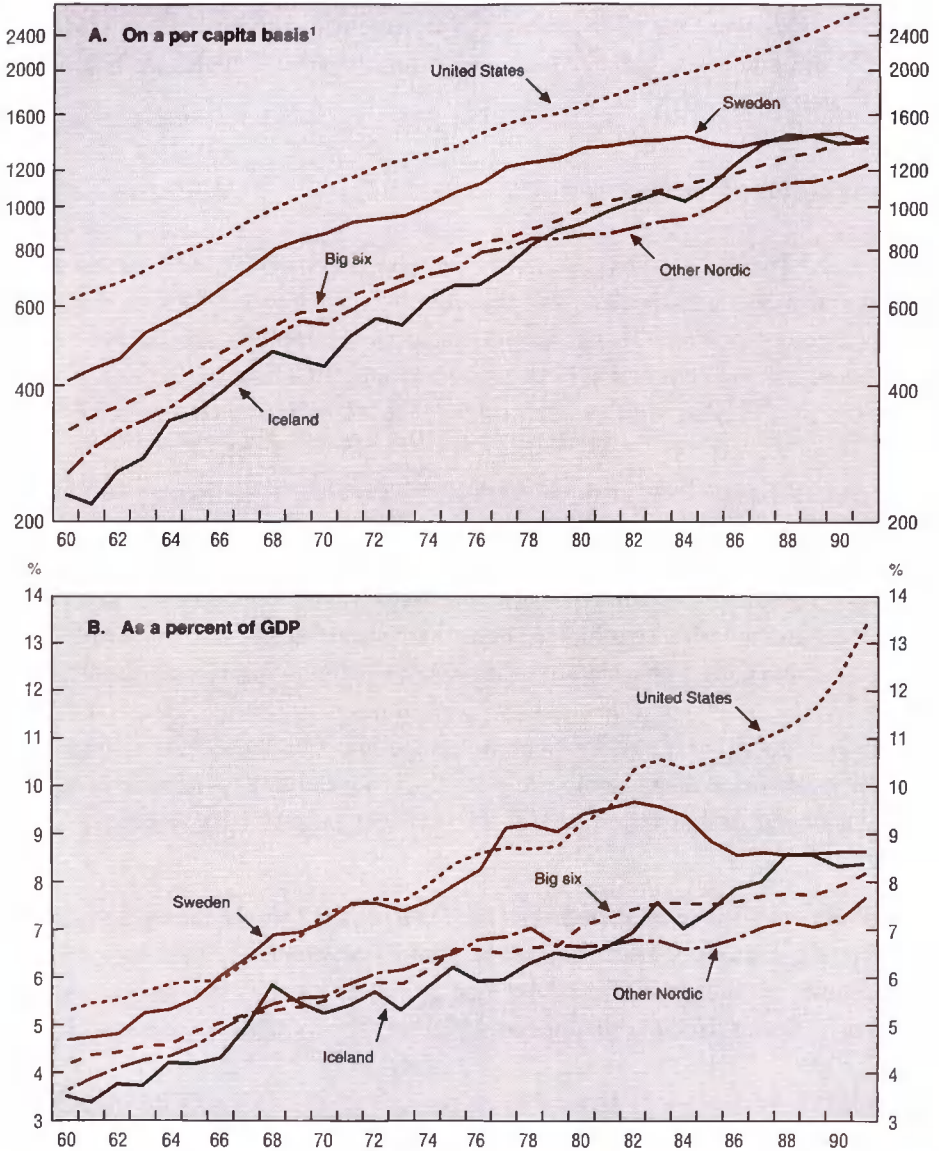
While the volume of spending is not far from the OECD average, this is due to offsetting factors. The results of a pooled econometric analysis of health expenditures in the 24 OECD Member countries during the period 1985-90 reported in Annex II show that spending is boosted by over a quarter in Iceland compared to the OECD average due to higher levels of real income and somewhat further by a higher share of those under the age of 15 in the population. Higher relative prices of medical care, a higher-than-average public expenditure share, a particularly small share of the population over the age of 65 and a low unemployment rate also serve to reduce expenditure, more than offsetting the usual income-spending relationship.



**Diagram 14. HEALTH-CARE EXPENDITURES: AN INTERNATIONAL COMPARISON**

Per capita real health exp.

Per capita real health exp.

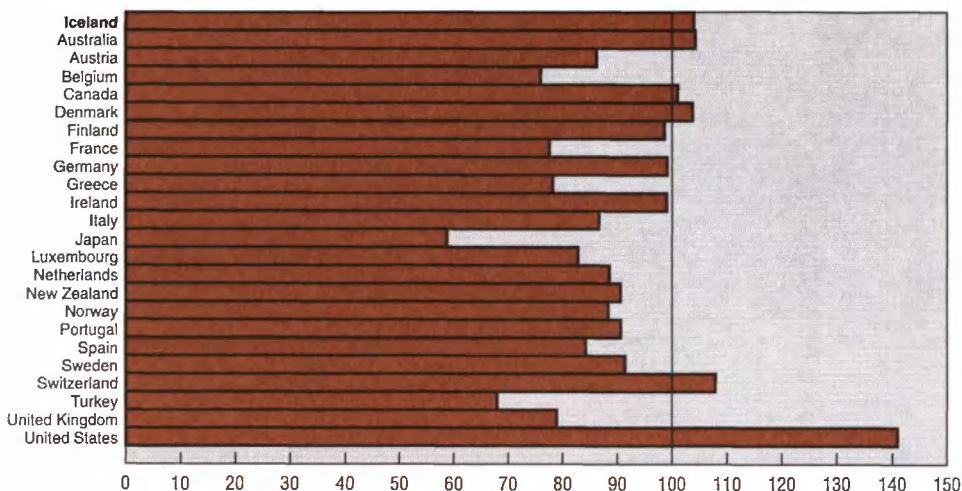


1. Expressed in US dollars on a purchasing-power-parity basis and then deflated by the US GDP deflator rebased to 1990.

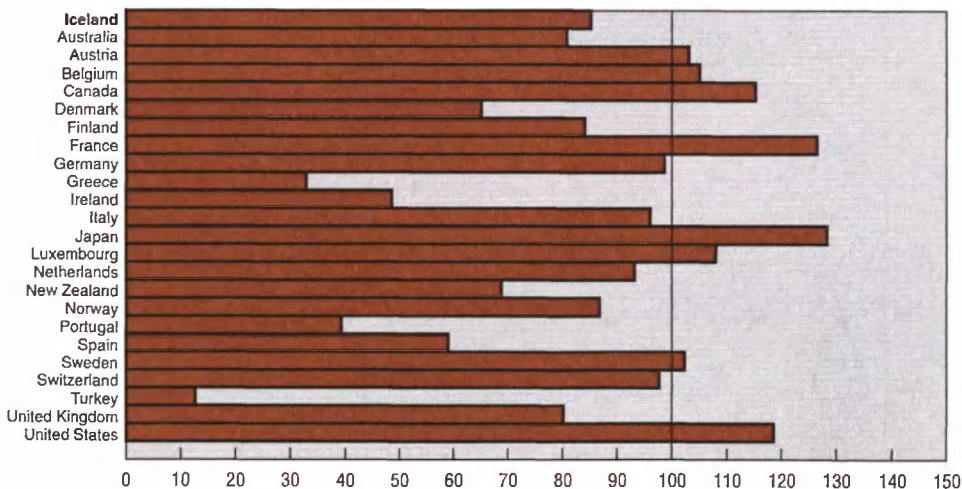
Source: OECD.

Diagram 15. HEALTH-CARE PRICES AND VOLUMES  
IN THE OECD, 1990

A. Relative health-care prices<sup>1</sup>



B. Volume of health care per capita<sup>2</sup>

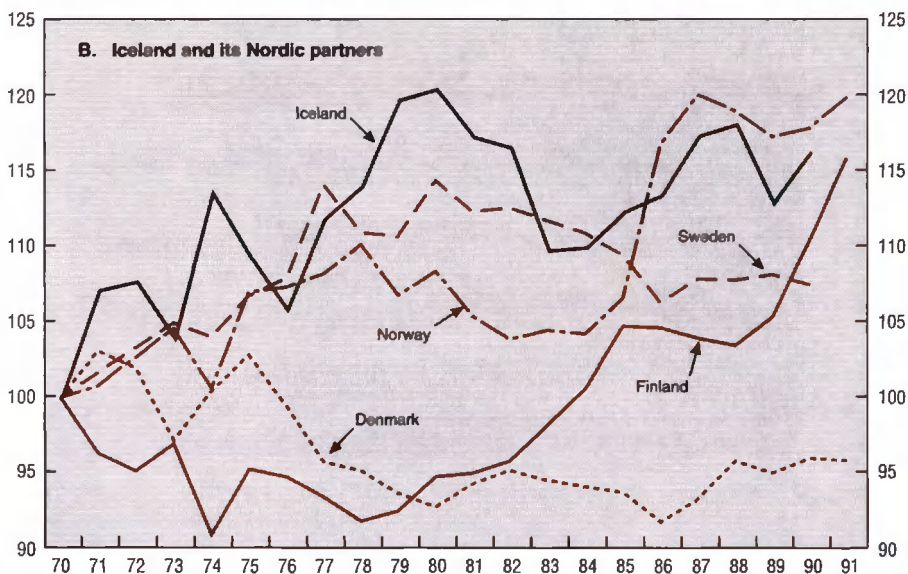
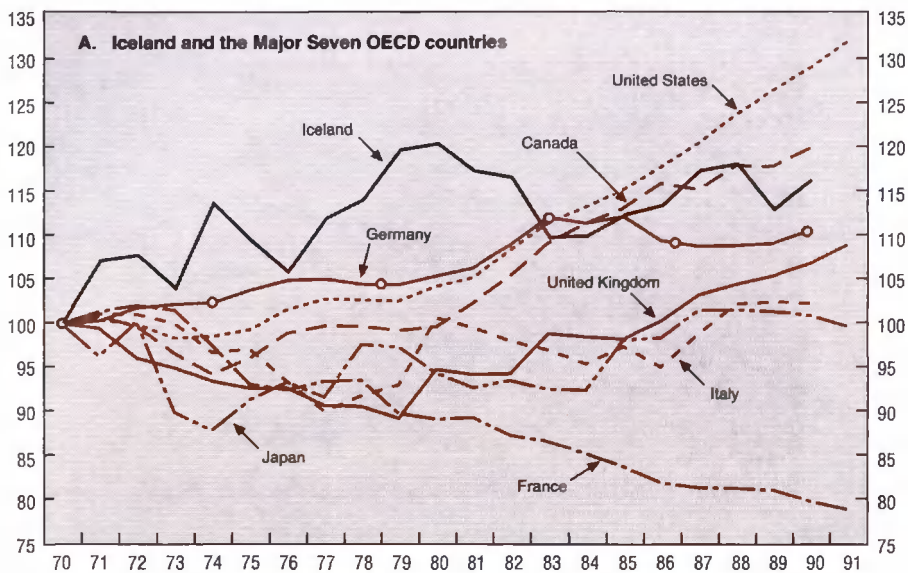


1. Purchasing-power-parity price of household consumption expenditure on health care relative to price of final expenditure on GDP (OECD = 100), ICP basis.

2. Total expenditure on health care in US dollars at purchasing-power-parity exchange rates for household consumption expenditure on health care (OECD = 100), ICP basis.

Source: OECD.

Diagram 16. TRENDS IN THE RELATIVE PRICE OF HEALTH CARE<sup>1</sup>, 1970-91



1. Deflator for health-care expenditure divided by the GDP deflator.

Source: OECD.

Table 19. Factors in increasing health expenditures in the OECD

	Share of health expenditure in GDP Starting year	Annual compound rate of growth over ten years							Share of health expenditure in GDP Ending year
		Nominal health expenditure growth	Health care price deflator	of which: GDP deflator	of which: excess health care inflation	Volume growth	of which: population growth	of which: per capita volume intensity growth	
<b>1960 to 1970</b>									
Iceland	3.5	22.6	13.0	12.5	0.4	8.5	1.5	6.9	5.2
Denmark	3.6	17.0	7.0	6.4	0.6	9.3	0.7	8.5	6.1
Finland	3.9	15.2	3.4	5.9	-2.3	11.4	0.4	10.9	5.7
Norway	3.3	13.9	7.6	4.8	2.6	5.8	0.8	5.0	5.0
Sweden	4.7	13.8	3.8	4.3	-0.5	9.7	0.7	8.9	7.2
OECD simple average <sup>1</sup>	3.9	14.4	5.7	4.9	0.8	8.2	1.0	7.2	5.5
<b>1970 to 1980</b>									
Iceland	5.2	45.9	36.7	34.2	1.9	6.7	1.1	5.5	6.4
Denmark	6.1	13.5	8.9	9.7	-0.8	4.2	0.4	3.8	6.8
Finland	5.7	16.9	10.9	11.5	-0.5	5.4	0.4	5.0	6.5
Norway	5.0	16.8	9.3	8.4	0.8	6.9	0.5	6.3	6.6
Sweden	7.2	14.9	11.1	9.6	1.3	3.4	0.3	3.1	9.4
OECD simple average <sup>1</sup>	5.5	18.2	11.7	11.0	0.6	5.8	0.7	5.1	7.2
<b>1980 to 1990<sup>2</sup></b>									
Iceland	6.4	40.1	32.9	33.4	-0.3	5.4	1.2	4.2	8.3
Denmark	6.8	7.2	6.1	5.7	0.3	1.0	0.0	1.0	6.3
Finland	6.5	12.7	8.8	7.2	1.5	3.5	0.4	3.1	7.8
Norway	6.6	10.0	7.1	6.2	0.8	2.8	0.4	2.4	7.4
Sweden	9.4	8.9	7.1	7.7	-0.6	1.7	0.3	1.4	8.6
OECD simple average <sup>1</sup>	7.2	11.4	8.2	7.7	0.5	2.9	0.5	2.4	7.9

1. Excluding Luxembourg, New Zealand, Portugal and Turkey.

2. Data for 1990 are preliminary.

Source: OECD.

Over the past thirty years the increase in Iceland's real expenditure on health services has been as rapid as anywhere else among the Nordic and major seven OECD countries except Japan; indeed, since 1975 it has been unsurpassed by any of the major seven (Table 19). While some of this gap may be attributable to faster population growth, it represents a small part of the overall story, as even per capita volume growth has outstripped the OECD average by nearly two to one since 1980. Thus, the slowdown remarked upon above has been less significant: the average annual volume growth rate of health expenditure during the fifteen years subsequent to 1975 in the average OECD country slowed much more substantially, compared to the previous fifteen-year period, than did Iceland's. The aforementioned trend increase in the relative price of health care has also been more significant for Iceland than for most other OECD countries (Diagram 16). However, in recent years price increases have been relatively subdued, especially for drugs. The only exception has been in specialised medical treatment, where the increase in patient costs has been steep.

### **Aspects of efficiency**

Total employment in the health-care industry has expanded at an average annual rate of 6.3 per cent since 1963 and now accounts for about 6½ per cent of total employment (Table 20). However, this growth has slowed to 3.5 per cent since 1980 and only 2.9 per cent in the public sector. The fastest rises have occurred among nurses. The number of practising physicians per capita has also increased steadily, more than doubling in a generation, although the ratio is quite similar to that observed in other Nordic countries. Nonetheless, a further substantial number of Icelandic doctors are practising abroad, especially in Sweden (18 per cent of the total) and the United States (9 per cent), indicating a substantial potential overhang.

In comparison with other OECD countries, Iceland has moved from a position of relatively few health-care workers to one of increasing excess. For example, in 1991, Reykjavik's City Hospital had 2.6 full-time equivalent personnel per occupied bed, of which 0.94 nurses, some of the highest staffing ratios in the OECD. However, such a surfeit is not atypical among Nordic countries, especially Sweden. The overabundance is widespread across types of workers, but it is most striking in the case of nurses<sup>33</sup>. While there were 2.1 nurses per

Table 20. Employment in health care

	1963	1973	1980	1985	1990
<b>A. In absolute terms</b>					
Total	1 655	4 109	6 094	7 395	8 595
<i>of which:</i>					
Practising physicians	228	343	488	626	715 <sup>1</sup>
Practising dentists	58	122	168	197	219 <sup>1</sup>
Practising pharmacists	46	100	151	178	210 <sup>2</sup>
Nurses including auxiliary nurses	476	1 188	2 182	2 868	3 200 <sup>1</sup>
Other	847	2 356	3 105	3 526	3 920 <sup>2</sup>
As a percent of total employment	2.3	4.6	5.8	6.1	6.4
<b>B. Per thousand inhabitants</b>					
Total	8.9	19.3	26.7	30.6	33.6
<i>of which:</i>					
Practising physicians	1.2	1.6	2.1	2.6	2.8 <sup>1</sup>
Practising dentists	0.3	0.6	0.7	0.8	0.9 <sup>1</sup>
Practising pharmacists	0.3	0.5	0.7	0.7	0.8 <sup>2</sup>
Nurses including auxiliary nurses	2.6	5.6	9.6	11.9	12.7 <sup>1</sup>
Other	4.6	11.1	13.6	14.6	15.7 <sup>2</sup>
<b>C. B as a percentage of OECD average</b>					
Total	86	123	128	129	136
<i>of which:</i>					
Practising physicians	107	113	113	117	113
Practising dentists	88	138	152	151	144
Practising pharmacists	75	105	113	114	122
Nurses including auxiliary nurses	108	141	169	185	185
<b>D. B as a percentage of Nordic average<sup>3</sup></b>					
Total	61	81	79	82	88
<i>of which:</i>					
Physicians	118	108	106	110	101
Dentists	n.a.	n.a.	99	101	96
Pharmacists <sup>4</sup>	n.a.	n.a.	92	103	111
Nurses including auxiliary nurses	n.a.	n.a.	140	148	125

1. 1989.

2. 1988.

3. Excluding Iceland, that is: Denmark, Finland, Norway and Sweden.

4. Excluding Norway. Including Norway the 1990 figure is 124.

Source: OECD.

practising physician in 1963, by 1989 there were 4.5, and nurses represented 2½ per cent of total employment. A large employment share for health-care workers may be to some extent attributable to the sparseness of the rural population. While there have been some signs of the gap with other countries being closed in recent years for physicians (for whom there has been a numerus clausus of 36 graduates per year for some ten years) and dentists, there has been no progress for pharmacists and non-professional categories.

Another aspect of cost efficiency is indicated by the wages and salaries paid to health-care workers. The expansion of employment has been offset by a decline in the relative level of labour income per employee in this sector during the 1980s. Over the decade annual earnings fell at an average rate of 0.6 per cent in real terms, while the average employee in the economy saw his yearly compensation rise by 0.2 per cent per year net of inflation. The result was that the relative level of wages per health-care employee fell from about 97 per cent of the economy-wide average at the outset of the decade to some 89 per cent by its end. Abroad, health-care workers improved their relative position somewhat during the decade (from 90 to 96 per cent). Unfortunately, however, no data are available for Icelandic doctors' pay levels, and therefore the importance of their contribution to rising expenditures cannot be evaluated.

Other aspects of efficiency relate to the degree to which the available supply of hospital services is fully utilised and the rate of throughput achieved. The number of hospital beds per capita appears at first glance to be rather high by international standards, but once nursing-home beds are excluded<sup>34</sup>, the number of acute-care beds per capita, at 4.8 per thousand in 1989, is in line with the OECD average (4.7). Similarly, occupancy rates at inpatient care institutions is comfortably high (86 per cent in 1989, compared to an average of 81 per cent for 20 other Member countries), but once attention is restricted to acute-care institutions, the comparison is less favourable (70 per cent in 1989, compared with an average of 77 per cent in eighteen OECD countries). This may well be the result of declining average length of stay achieved during the past two decades: by 1989, the average acute-care patient admitted spent 6.3 days in hospital, the second lowest among 18 OECD countries (the average of which was 8.7 days).

Efficiency can also be judged from the perspective of the minimisation of overhead costs associated with the administration of public health programmes. While international comparisons in this area are fragile because the data are often

not gathered according to standardised definitions, it is usually argued that insurance-based (“Bismarckian”) systems are more expensive to operate than direct-delivery (“Beveridgean”) systems which avoid the costs of premium determination (Poullier, 1992). OECD data tend to confirm this generality (Table 21). Indeed, Iceland is among the countries apparently devoting the least both in per capita terms and as a share of total health expenditures to administrative expenses, despite the possible disadvantages of small scale. However, data provided by the national authorities indicate that a broader and possibly more comparable definition would raise the Icelandic figure for administration costs from 1.5 to 2.6 or 2.7 per cent of public expenditure in recent years. If internal administrative costs in medical establishments are also included, the figure rises to some 4 per cent.

Finally, efficiency cannot be examined without a look at the role of technology, which poses special problems for an extremely small country such as

Table 21. **Reported public expenditure on health administration**

	As a share of public expenditure for health (in per cent)			In per capita terms (in dollars using purchasing power parity exchange rates for GDP)		
	1980	1985 <sup>1</sup>	1990 <sup>2</sup>	1980	1985 <sup>1</sup>	1990 <sup>2</sup>
<b>Iceland</b>	1.5	1.7	1.5	7.9	14.0	18.2
Australia	3.2	2.5	2.6	14.1	17.9	21.6
Belgium	n.a.	5.5	4.6	n.a.	46.0	51.1
Canada	1.2	0.9	n.a.	6.9	9.0	n.a.
Denmark	0.7	0.9	1.3	3.9	6.2	11.1
Finland	2.4	2.5	2.5	10.4	17.2	25.6
Germany	6.1	6.5	7.1	39.2	58.0	77.6
Ireland	2.5	3.7	3.6	9.6	16.9	19.9
Italy	6.6	6.3	6.2	32.3	40.5	62.5
Luxembourg	5.4	5.2	4.8	32.6	43.9	61.3
Netherlands	3.3	4.4	4.5	18.3	31.9	41.0
New Zealand	n.a.	7.0	7.1	n.a.	51.7	54.2
Spain	2.2	2.4	2.8	6.0	9.2	17.4
Switzerland	n.a.	3.2	3.3	4.9	3.8	4.5
United Kingdom	3.0	2.4	n.a.	12.8	14.6	n.a.
United States	3.7	2.7	2.6	16.3	18.9	28.8

1. Except for Belgium and New Zealand for which data are for 1987.

2. Except for Australia, New Zealand and Switzerland for which data are for 1989.

Source: OECD.



Iceland. Given the fact that the latest medical advances are usually embodied in new and expensive capital equipment for which demand may not be adequate, the authorities have adopted the sensible policy of sending patients abroad for treatment until domestic needs are sufficient to justify the purchase of such equipment.

## **Recent and prospective reforms**

Faced with the alarming prospect of explosive growth in health-care spending in the context of a stagnant economy, the authorities have been actively seeking to reduce the sector's draw on the government budget in recent years. However, there is no desire to reduce the overall level of services provided. Accordingly, the principal focus has been on improving the efficiency of delivery.

As in many other OECD countries, including those in the Nordic region, the principal reform undertaken in the 1980s was the attempt to shift inpatient to ambulatory care in order to save on hospital costs. As shown in Diagram 13, after reaching 70 per cent of total health-care spending in 1980, inpatient care's share in expenditure eased back to 65 per cent during the 1980s. As a result of shorter stays, induced by a switch in the late 1970s to financing hospitals through budget envelopes rather than per patient day, this aspect of hospital productivity improved. Hospital costs have also been reduced through rationalisation: the three hospitals in the capital are more specialised than in the past, although a government attempt to merge completely two of them failed in 1992<sup>35</sup>.

In recent years the government has been more energetic in curbing the escalation in public health spending (Table 22). Besides an across-the-board cutback in 1992, the most important measures have been to increase financial demands on users, albeit with certain protection provided to the needy<sup>36</sup>. With regard to drugs consumed outside of hospitals, user charges have been increased<sup>37</sup>, and doctors must now indicate to pharmacists whether generic drugs can be substituted for their branded equivalents. This resulted in a 17½ per cent decline in consumption, a reduced share of costs borne on the health-insurance scheme (from 82 to 75 per cent) and prescribing of cheaper medicines (average prices dropped 16 per cent). Overall, compared to an extrapolated trend, a saving of IKr 500 million was realised in the second half of 1991 and IKr 700 million in

Table 22. **Approximate savings from recent measures to cut health expenditures**

IKr million

	1991	1992	1993
General budget cuts		450	450
Restructuring of acute-care hospitals in Reykjavik		150	150
Other operating savings		200	200
Drugs	500	700	1 100
Primary and outpatient care, especially user charges		250	500
Devices for the handicapped		50	50
Dental services user charges		50	250
Reduction in investment		200	250
Total	500	2 050	2 950

Source: Ministry of Health and Social Security.

1992. Also, charges have begun to be levied on visits to general practitioners, and those on specialists' as well as dental consultations have been boosted. However, the authorities are not satisfied with the yield of these measures in terms of increases in revenues, reductions in demand for drugs and shifts in demand for physician services<sup>38</sup>, and they intend to increase user charges further. Thus far, the danger in terms of impaired equity of access has not been seen as severe, given the rather flat overall distribution of income in Iceland.

It is also likely that "gate-keeping" will be required on visits to specialists, that is patients will have to be referred by a generalist before an appointment with a specialist can be made. Such a system was in place until 1984. In addition, the authorities intend to continue to impose budget cuts on hospitals in 1993 as in 1992. Enhanced hospital efficiency will be achieved by contracting out a greater share of hospital services, laboratory services, for example, and by further rationalising hospital services in Reykjavik following the failed attempt to merge two of the three biggest hospitals there. Subsidies on devices for the handicapped have been cut back, and capital expenditure is being slowed (especially on nursing homes outside the capital). Finally, greater emphasis is being placed on out-patient clinics, and fewer resources are being allocated to alcohol addiction treatment institutions and rural hospitals (whose surgical role has been diminishing).

However, as yet there appears to have been little willingness to examine other sometimes more radical reforms, and the system remains largely tax-based,

publicly owned and operated and organised on a command-and-control basis. For example, there has been no consideration given to schemes which would allow the main hospitals or other providers to compete with one another. Such competition could be based on price, the quality of treatment or the avoidance of queues which have developed in the capital, for example. Encouraging competition could be quite fruitful, especially since it appears that the market for certain inpatient services is currently divided among the hospitals in the capital according to the days of the week. As with all public monopolies, there is a risk of inadequate incentives to improve efficiency and a lack of accountability, with supply guided more by provider than consumer preferences. Somehow, mechanisms must be found to mimic the market, allowing the introduction of the notions of patient choice (of physician and treatment site) and money following the patient. These are completely lacking in the current command-and-control approach in which, for example, hospitals are financed by block grants according to existing supply in order to impose macroeconomic discipline. However, while global budgets can control costs, by themselves they are insufficient to bring about efficient use of resources in the sector, and the injection of competition could yield superior performance.

In addition, the concept of patient choice could be usefully supplemented by contract-based payment systems and performance-related pay. Partial reforms along these lines are underway in other Nordic countries, Sweden in particular (Saltman, 1992)<sup>39</sup>, and “health maintenance organisations” (HMOs) and “preferred provider organisations” (PPOs) are gaining support in the United States. Primary-care physicians could be remunerated in part by capitation payments, as in the United Kingdom, or through payments for individual illnesses (so-called “diagnostic-related groups”) in order to mitigate the problem of supplier-induced demand. Similarly, it is difficult to understand why price competition is not allowed for pharmaceuticals (whose distribution margins are subject to government control<sup>40</sup>), even for those placed in the category with zero reimbursement. Not surprisingly, the result is substantial mark-ups and high drug prices for Icelandic consumers, as shown above.

The authorities will have to be relentless in their efforts to restrain health expenditure by enhancing efficiency if the weight of evidence from derived historical trends and international comparisons is to be offset. For in the absence of global budgets for all categories of spending, if the true real-income elasticity

is in the region of 1.5, as is indicated in Annexes I and II, the relative price of health-care services would have to be continuously reduced in order to avoid health occupying an ever-increasing share of GDP<sup>41</sup>. Otherwise, if there is no change in relative prices, health expenditure would constitute about 9.2 per cent of GDP in the year 2000, nearly 1 percentage point higher than in 1990<sup>42</sup>. Global budgets alone could prevent such an increase but at the expense of increased non-price rationing of medical services. In order to cap health spending and simultaneously improve efficiency, global budgets should be supplemented by market-based elements of managed competition.

### **Other aspects of the social-security system**

The health-care system is but a single part of Iceland's extensive system of social protection which has developed over a period of more than 100 years – the first old-age-pension legislation was passed in 1890, in part to replace poor relief which had already been available from local communities for centuries. The first comprehensive social-insurance legislation was enacted in 1936. Following enhancement in recent decades, health and social security currently represent some 40 per cent of total State spending. Excluding the health-care component, the current transfers represented by pension, unemployment, accident insurance and daily sickness benefits represented 4.2 per cent of GDP in 1991, up from 3.3 per cent in 1980 (Table 23). Lack of data make it difficult to make international comparisons, but it appears that such spending is well below levels seen in other Nordic countries<sup>43</sup>, although since 1975 the rate of growth of such expenditure in Iceland has been the fastest among the five Nordic countries. All benefits are indexed to average earnings, and most are taxable, but with a fairly generous tax-free threshold, the average effective rate of taxation is rather modest.

### ***Pensions***

Pensions represent easily the largest component of overall non-health social spending. Retirement pensions are paid to all those over the age of 67, except seamen for whom pensions are payable as of age 60. Traditionally, the level of pension benefits was unrelated to other income. But over the past twenty years or so, an increasing proportion of all social benefits have become means-tested, culminating in 1992 when even the basic pension was made subject to an

Table 23. Social-security system's current transfers, 1980-91

IKr millions

	1980	1985	1986	1987	1988	1989	1990	1991
Current transfers	518.3	4 227.6	5 432.4	7 625.3	10 162.3	12 405.6	14 445.0	16 182.4
In 1991 prices <sup>1</sup>	10 163.4	11 440.8	12 037.5	14 283.2	15 140.4	15 305.5	15 428.5	16 182.4
As a share of GDP (in percent)	3.3	3.5	3.4	3.7	4.0	4.1	4.1	4.2
<b>Percentage division:</b>								
<b>Social security pensions, total</b>	92.1	88.4	89.1	89.7	89.8	86.4	86.6	88.0
Old-age pensions	65.1	60.1	60.6	60.3	59.5	56.3	55.3	56.3
Disability pensions	15.8	14.7	15.0	15.1	15.1	15.0	15.1	15.8
Widow's/widower's pensions	3.1	1.9	1.9	1.8	1.6	1.4	1.3	1.2
Children's pensions	3.0	2.2	2.1	2.0	2.0	1.9	1.8	1.9
Maternity benefits	4.9	9.5	9.5	9.7	11.0	11.2	12.4	11.8
Other benefits	0.1	0.0	0.0	0.8	0.6	0.6	0.7	1.0
<b>Accident insurance benefits</b>	2.2	2.1	2.1	2.4	2.4	2.3	2.3	2.4
Death and disability transfers	1.6	1.1	1.0	1.1	1.1	1.0	1.1	1.1
Daily cash benefits	0.6	1.0	1.2	1.3	1.3	1.4	1.3	1.1
<b>Unemployment Insurance Fund</b>	3.5	7.2	6.5	5.9	6.0	9.5	9.8	8.3
Unemployment relief	1.7	4.3	3.5	3.1	3.4	7.1	7.4	5.9
Old-age pensions for union members	1.7	2.9	3.0	2.9	2.6	2.5	2.4	2.4
<b>Daily sickness benefits</b>	2.2	2.2	2.2	2.0	1.7	1.7	1.3	1.4

1. Deflated by the consumer price index.

Source: National Economic Institute.

earnings ceiling: it is reduced by 25 per cent of all earned income in excess of Ikr 65 800 per month, but the overall marginal "tax" rate (including loss of various supplemental benefits) in part of the relevant income range rises to as much as 80 per cent. With no other sources of income, beneficiaries living alone receive about Ikr 48 000 per month, which can be compared to the minimum negotiated wage of some Ikr 43 000 per month. Full disability pensions are paid at the same rate to those whose working capacity has been impaired by at least 75 per cent, with partial pensions available for those whose capacity has been reduced by 50 to 75 per cent. A generous system of survivors' benefits is also available. Finally, maternity benefits are payable for six months (compared with three months as recently as 1988) following the birth of a child.

The public pension system is financed on a pay-as-you-go basis. In 1990, about 55 per cent of the programme's cost was covered by a payroll tax (2.5 per cent in the agriculture, fisheries and manufacturing sectors and 6 per cent elsewhere). The remainder is provided by the State budget. In contrast with most other Member countries, therefore, a relatively small part of the financing of social protection takes the form of a wedge between the cost of labour to firms and workers' take-home pay.

Pensions are also paid by some 85 occupational pension funds which are independent, privately managed and subject to labour-management negotiation. Indeed, they are the prime source of pensions, the public system stepping in only for those lacking occupational pension rights or receiving less than a certain floor. Occupational pensions were made mandatory in 1974 for all dependent employees and in 1980 for the self-employed. Employees contribute 4 per cent of earnings, while the employers' contribution is 6 per cent. They currently hold some Ikr 160 billion in net assets (about 40 per cent of GDP). Assets are being accumulated at a rapid rate due to the fact that schemes are still maturing and to the high real rate of return currently available on domestic financial investments. In the private sector (excluding banking), occupational pensions are payable as of age 70, with a level of 63 per cent of previous earnings available with 40 years of contributions and 72 per cent after 50 years. In the public and banking sectors, however, the pension system is substantially more generous. The difference between this system and that available to private-sector employees is worth about Ikr 2 billion per year on a present-value basis,  $\frac{1}{2}$  per cent of GDP: the retirement age is 65 or even 60 if the sum of age plus years of experience is at least 95, and,

furthermore, public servants who retire at age 70 earn 77 per cent of previous earnings with 40 years of experience and 87 per cent after 50 years. Overall, these funds made payments totaling Ikr 5.8 billion in 1990, compared to Ikr 10.8 billion of pension expenditure by the social-security system.

Despite the very high rates of return available in recent years, over the longer term both the public and occupational pension systems will face serious financing problems. Both are confronted with the ongoing increase in life expectancy. The unfunded public plan will also have to deal with a foreseeable increase in the ratio of retired to working-age population. This is expected to begin around the year 2006 and to accelerate around 2020. The occupational schemes are not actuarially sustainable as contribution rates have not been modified since their inception. In order to make them actuarially fair, contributions would have to be increased to 17 per cent in the private sector and 27 per cent in the public and banking sectors (compared to the current 10 per cent rate). Without such changes, asset depletion will be rapid after about 2010.

### ***Unemployment and other benefits***

Given the low levels of joblessness traditionally observed in Iceland, it is not surprising that the Unemployment Insurance Fund has not been a major payer of social benefits. Furthermore, coverage is not universal: only union members are eligible, and recipients must have worked at least 425 daytime hours during the previous twelve months<sup>44</sup>. In addition, benefits may be cut off if recipients turn down a job offer. The level of the benefit is independent of the prior earnings of the recipient; it is equal to the wage rate of manual workers in the fish-processing sector. This implies a fairly low replacement ratio – about 50 (80) per cent after taxes for a typical single (married) industrial worker in 1990, compared to 64 (84) per cent in Finland and 85 (93) per cent in Sweden, for example. Since July 1989, benefits have been payable for 260 consecutive days, followed by a period of 80 days of ineligibility, before a new benefit spell may begin.

The Fund is financed by revenues from part of the proceeds of the payroll tax (0.15 per cent of the wage bill) plus a contribution from the State budget of three times such proceeds. Thus, its income equals 0.6 per cent of the wage bill, Ikr 1.475 billion in 1991. Given that each percentage point of unemployment costs the Fund some Ikr 600 million, it is clear that the financing mechanism cannot sustain an unemployment rate in excess of 2½ per cent.

However, two other factors modify the picture. First, the unemployment rate has rarely been above 1½ per cent, and therefore the Fund has been able to accumulate substantial assets since it was established in 1957. Second, those assets have been used to pay old-age pensions to those receiving no occupational pensions and were born prior to 1915 (Ikr 325 million in 1992). Thus, the true sustainable rate of unemployment without a change in financing is only 1.8 per cent. With the rate in excess of that level for most of the period since 1990, even a 3 per cent joblessness outcome would exhaust the Fund's assets by 1994. Accordingly, either its provisions will have to be tightened up, or increased revenues will have to be found by end-1993. Since benefits are guaranteed by the State, its budget is the residual source of finance.

The two remaining kinds of benefits paid by the social-security system are: *i*) flat-rate cash payments to those who are sick for at least three weeks and whose wages have ceased; and *ii*) capped<sup>45</sup>, employer-financed accident-insurance benefits payable to those having suffered an occupation-related injury or disease which lasts at least 10 days. The last item will be wound up in 1994, as such insurance is now available on the private market.



## V. Conclusions

Real activity in Iceland continues to face a stiff head wind. Persistent problems with the supply of cod, combined with a weakening in marine-export prices, have produced a financial and social crisis in the fisheries sector. Market conditions for the other two major export products, aluminium and ferrosilicon, have also deteriorated further, after several years of waning demand. Furthermore, the weakness in export outcomes for the nation's other tradable goods and services has intensified in sluggish global economic circumstances. In such an environment, domestic demand, not surprisingly, was anything but buoyant last year. Its decline of over 5 per cent was the largest since 1983, while the drop of 3¼ per cent in GDP was the most severe since the herring catch collapsed in 1968. In addition, the unemployment rate rose to nearly 5 per cent by year-end, a level not seen in 50 years.

The outlook is for a further – albeit more limited – fall in output and expenditure in 1993, due to continuing constraints on the cod catch and the resulting need for restraining domestic demand, as well as the effects of spreading joblessness on households' willingness to spend. With mounting problems of excess capacity and persistently high real interest rates, the prospects are for another year of falling private investment spending before any rebound can be expected. 1994 will probably be a transition year, possibly benefiting from a recovery in export markets and the early gains from European integration. With the appropriate conditions in place, it is reasonable to expect that one of the major development projects, such as the Atlantal aluminium smelter, with all its attendant spin-off effects, would get underway shortly thereafter.

These recent and prospective outcomes are clearly disappointing. They are, in part, the result of many years of overfishing of cod. Although official marine biologists' catch recommendations have been more or less followed for most species, cod is an important exception. An interplay of excessive exploitation and

unfavourable environmental conditions in some recent years have led to a situation where significant further cuts in the cod catch might be unavoidable in order to enhance the probability of stock rebuilding and secure the long-term future of the cod fishery. Otherwise, the downturn is largely beyond the control of the authorities. It is important for them to consolidate the success they have had in ridding the economy of its inflationary and public-sector excesses. Such hard-won achievements must not be given up lightly. While the recent adjustment of the króna peg may have been largely unavoidable in the light of those made by other trading partners and the subsequent deterioration in the competitive position of the export sector, any further move away from a non-inflationary monetary policy anchored in a commitment to a stable exchange rate would put at risk the elimination of inflation achieved in 1992. Maintenance of the current peg provides the appropriate context for a moderate settlement in the upcoming round of wage negotiations and for steady reductions in interest rates which have proved so burdensome in recent years.

Keeping the growth of domestic costs and incomes under control is the most effective way to secure enhanced competitiveness, adequate profitability and an appropriate current-account outcome. The fundamental problems of the fisheries are not the result of an overvalued exchange rate; rather they are related to excess capacity – which remains despite improvements in the fisheries management system and which the proposed Fisheries Development Fund is expressly intended to fight against – and the impact of chronic overfishing and other less well understood environmental factors on stocks. Indeed, any further currency devaluation might well serve to slow the inevitable process of rationalisation confronting the fisheries, thereby perpetuating the volatility of the economy which is caused by its lack of diversification.

Budgetary outcomes have not been as close to balance as targeted for several years, but the 1992 result was nonetheless gratifying in light of the severe downturn and certain other one-off factors. However, it is unclear whether deficits even as moderate as 2 per cent of GDP are sustainable in view of the poor prospects for activity for the next several years and rather important off-budget liabilities; thus, despite the seriousness of the conjunctural situation, the authorities have little leeway to relax their current policy stance. In the short term, revenue growth is likely to be still impaired by the ongoing slump in activity, but

the authorities should take care not to allow non-cyclical overspending to continue, especially on current consumption. Equally important, the government should avoid the temptation to offer budgetary sweeteners in order to bring about a lower wage settlement between the social partners. This would merely replace one problem by another and not face up to the need for incomes to reflect the economy's ability to pay. Additionally, planned savings on agricultural subsidies must be effectively realised; the burden of replacing the lost turnover tax revenue should be handed over to the municipalities at the end of this year, as planned; capital income should be rapidly brought into the personal income tax base; the pace of privatisation of public enterprises should be accelerated; and efforts should be redoubled to enhance the cost efficiency of public-service delivery. Although some steps have been taken to reduce the level of subsidisation in the housing sector, additional measures would be welcome. Combined with efforts to encourage the development of a private-sector mortgage market, the state guarantee on housing bonds should be phased out, and consideration should be given to a further reduction in mortgage interest rebates. Taken together, such moves would significantly reduce public-sector borrowing which should not only moderate pressures on interest rates, but also improve the saving-investment balance, stabilise the burgeoning foreign debt and hold out the prospect of renewed budgetary flexibility in the event of future cyclical downturns.

It is social security in general and the health-care system in particular that has drawn much of the government's cost-cutting attention in recent years. Annual per-capita health spending increased by over 4 per cent in volume terms during the 1980s, nearly double the OECD average, and spending now stands at about 8½ per cent of GDP. However, Iceland's medical system seems to be providing an above-average level of care at an overall cost which is only modestly higher than that of other OECD countries. Health outcomes continue to surpass those of other Member countries by a wide margin. Nevertheless, some aspects of the system call for reform in order to ensure that maximum cost effectiveness is achieved. The authorities are intent on boosting hospital efficiency by greater recourse to contracting out of peripheral services and on shifting the burden of payment for medical services to their users. They also recognise that there is insufficient use of home health care for the elderly, resulting in a surge in expenditure on nursing-home care which needs to be reversed.

Other changes could also be considered. High prices for care, and especially for drugs, are responsible for the above-average level of spending; accordingly, attention should focus on the reasons for such high prices and how best to modify them. Increased competition would seem to be the answer. Means must be found to give providers incentives to compete for a greater share of the market, either on the basis of price or quality. Block grants could be supplemented by the notions of patient choice and money following the patient in hospital financing. Performance-related pay could be introduced into certain of the health-care professions. Government controls on retail distribution margins for pharmaceuticals should be scrapped in favour of market-determined pricing. The battle to restrain health expenditure in the 1990s will be won only by getting steadily better value for money in order to make room for the inevitable increases in demand on the horizon.

Other social-security spending has also been rising rapidly over the past decade and looks set to continue to do so. The pension system's financing problems are the most serious. It would be desirable if the social partners amalgamated the private-sector occupational pension funds into units of more reasonable size and then set them on an actuarially sustainable footing by gradually increasing their contribution rates and reducing their generosity, given that the retirement age is already fairly high. Also, the munificence of the pensions available to civil servants and bank employees should be re-considered, especially in the light of the foreseeable budgetary burden from the increases in the unfunded public pension scheme. Finally, immediate attention must be paid to the Unemployment Insurance Fund which risks financial collapse in the very near future, given recent trends in joblessness. Since benefit levels are not especially high, it would be advisable to seek savings by reducing the duration of their availability, by raising employee contribution rates and by purging the Fund of its other responsibilities.

Though recent trends in activity have been rather depressing, policy makers' focus should turn to what can be done to improve medium-term outcomes. Given the raw materials that the nation possesses in terms of natural resources and human capital, as well as the declining economic costs associated with distance resulting from the communications revolution, there is every reason to be optimistic regarding the future. But macro- and microeconomic policies must furnish the appropriate conditions for agents to exploit the opportunities that closer

integration with Europe, for example, will provide. Much progress has been made in this regard, as inflation has been eradicated and the budget deficit reduced, and plans are underway to liberalise many more areas of the economy. With further market-opening measures, continued pursuit of a stable economic environment and a more prudent fisheries management policy, Icelanders should be able to look forward to greater prosperity in the second half of the decade.

## Notes

1. The result was that public-sector foreign borrowing represented 70 per cent of all new external borrowing, up from 30 per cent in 1990 and 50 per cent in 1991.
2. Net debt (which includes net short-term assets) rose 3 percentage points of GDP to a seven-year high of 50 per cent of GDP.
3. The Treasury deficit is also referred to as the "revenue balance". The Treasury "net borrowing requirement" (which also includes some Treasury financial transactions) came to 3.8 per cent of GDP. The public-sector borrowing requirement, which includes government housing finance and municipal net revenues, was 10.5 per cent of GDP.
4. Nominal expenditures were very slightly under budget, though transfers exceeded estimates. Health-care cost-cutting was implemented later than originally planned, and the unemployment insurance fund required unexpectedly high government contributions. One problem surfaced in the spring: the government agreed to increase pension and medical-insurance benefits in line with the general wage agreement. In effect, the government helped to dampen immediate wage pressures by accepting a weaker budgetary position, thereby accentuating its medium-term problems.
5. The central government has targeted Ikr 1.8 billion for road construction and repair and an additional 500 million on maintenance and repair of public buildings. A further Ikr 500 million will come from the Sudurnes region to deal with the more severe unemployment problem of that area.
6. In 1990, a simple average of marginal corporate tax rates across the EC and EFTA countries came to roughly 39 per cent (OECD, 1991), and since then the trend has been downward.
7. The turnover tax is a rather inequitable instrument: it taxes firms irrespective of their ability to pay and impairs their competitiveness through its cascading effect on prices. In effect, the tax discriminates against high turnover/low value added firms, to be found especially in the distributive trades. However, it was an important revenue source for the city of Reykjavik, in particular.
8. The central government had a single marginal tax rate of 32.8 per cent for all income categories: the corresponding personal tax rate for the municipalities remains 7.05 per cent.
9. Based on 1991 OECD national accounts data for direct taxes on households and disposable household income, converted to dollars and aggregated across the European countries. Data were not available for Norway, Switzerland and Luxembourg: these countries along with Iceland were omitted from the calculation of the average.

10. The turnover tax raised Ikr 4.8 billion in 1992. To replace the lost revenues, the central government will temporarily allocate an additional Ikr 4 billion to the municipalities in 1993.
11. Homeowners with net wealth below a certain ceiling are eligible for rebates on mortgage interest payments in excess of 6 per cent of taxable income. All of this excess had been rebated, but, as of 1993, only 80 per cent of the excess will be rebated, and the wealth ceiling has been lowered. Total rebates on mortgage interest amounted to Ikr 2.2 billion in 1992 – about Ikr 65,000 per eligible taxpayer.
12. While most goods and services are taxed at 24½ per cent, a 14 per cent rate is being introduced over the course of 1993 on a variety of previously exempt products: heating, radio and television user fees, books and newspapers, among others. At the beginning of 1994, VAT will be introduced on hotel and travel services, but at the same time the sector's social-security tax will be reduced from 6 to 2 ½ per cent. Also, the petrol tax was increased by 7 percentage points.
13. Only 8 per cent of the population owns common stock – quite a low proportion, compared with other OECD countries.
14. Indeed, Iceland's industrial classification system contains only 31 sectors at the three-digit level, compared with 120 in the NACE code.
15. Over 80 per cent of the population lives in owner-occupied dwellings.
16. According to Baldwin (1992), there are three kinds of contributions for the group of EFTA countries: first, a commitment of 270 million ecus (with a payment of 100 million ecus in the first year) toward various EC programmes in, for example, the biotechnology and environmental areas; second, a subsidised ten-year loan of 1.5 billion ecus at three percentage points below market rates; and third, a grant of 100 million ecus in each of the first five years of the agreement. Since all payments are to be GDP-weighted, the gross cost to the Iceland treasury is some 1.7 million ecus in the first year. However, EFTA-based firms will be able to compete for contracts in the first set of programmes, so the net cost should be lower. Should they wish to join the EC itself, EFTA nations would have to pay about twenty times as much, but they would then have some input into the future changes in the Single Market.
17. According to the National Economic Institute, EC tariff revenues will decline from Ikr 2.1 to 0.5 billion; this cut is equivalent to some 2¼ per cent of their 1990 fob value or 0.4 per cent of Iceland's GDP. The ultimate liberalisation is worth Ikr 1.9 billion or 0.5 per cent of GDP. The provision that tariff cuts are to be especially deep for fileted fish means that Icelandic processors should be able to improve their position relative to their EC competitors, although the current implicit subsidy to the processing industry (through automatic quota cuts following the export of unprocessed fish) may have to be eliminated.
18. While overall supply is price inelastic, supply to individual export markets is clearly responsive to differential price and exchange-rate changes.
19. For a more detailed discussion see Juel (1992).
20. On the insurance side, specific life and non-life firms will be granted a grace period of two years before they will have to meet the solvency requirements of the insurance co-ordination directives.

21. Prominent among these is the National Power Company, the nation's main producer and wholesale distributor of electricity. Along with other energy producers, it is responsible for some 19 per cent of total foreign debt.
22. This is not surprising, as the 1973 Health Services Act guarantees the people of Iceland "access to the best available services to protect and preserve their mental, physical and social health and well-being".
23. About 15 of the rural centres also have a small hospital attached to them, where minor surgical operations are performed.
24. Sweden, in its recent ÅDEL reform, has attempted to integrate primary health and social services for the elderly by unifying responsibility for all such services at the municipal-government level.
25. The most recent data available (1990) show that Icelanders consume only about half as much alcohol per adult as residents of other OECD countries (5.2 litres, compared to 10.2 litres), up from 40 per cent in 1980. However, they consume slightly more tobacco per adult than the OECD average (2.5 kg., compared to 2.3 kg.)
26. Of course, the main line of causation is probably the reverse: Icelanders consume few pharmaceuticals because they are relatively healthy. In 1988, the average number of medicines taken per person per year in Iceland was 3.3, compared to a simple average for the OECD of 11.3. However, on a defined-daily-dosage basis, Icelanders apparently consume large amounts of psychotropic drugs, antiulcerants and antibiotics compared to their European neighbours.
27. For example, Iceland instituted the OECD's first national screening programme for cervical cancer in 1969 and was, more recently, among the leaders in mammography.
28. However, it is recognised that there is by no means any simple mapping from differences in health care to infant mortality rates across countries: the story is not quite so simple. See Liu et al. (1992).
29. Despite the major recession in 1992, early indications are that the ratio remained at 8.4 per cent due to the government's efforts at expenditure restraint.
30. However, it should be noted that Iceland's health-care system had been less developed than that of many other OECD countries.
31. In 1991, however, there was a sharp drop in pharmaceutical consumption due to an increase in co-payments.
32. Furthermore, unlike in the United States, malpractice insurance is not a contributing factor. Such suits are virtually unheard of in Iceland. The social-security system does, however, have a special account for making lump-sum payments to victims of medical error.
33. Nurses here are defined to include only first- and second-level nurses, that is those with three or two years of post-secondary education. Data gathered by NOMESCO (the Nordic Medico-Statistical Committee) allow for a broader definition of nurses and shows that Iceland has relatively few nurses per doctor by Nordic standards.
34. The excess supply of long-term beds is, in fact, limited to the area outside Reykjavik, while there is an excess demand in the capital.



35. After receiving advice from an international firm of management consultants on the merger of hospitals in Reykjavik, the government attempted unsuccessfully to merge the smaller St. Joseph's Hospital, with the larger and more modern City Hospital, primarily in order to save on overheads. Nevertheless, some degree of rationalisation was achieved, as all acute care was moved from St. Joseph's to the City Hospital.
36. For example, drugs have been almost free since mid-1991 to patients with needs which are expected to exceed six months in duration. It is not clear to what extent increased user charges are intended to mitigate the impact of moral hazard on the demand for health care.
37. 2000 different drugs are allocated to four different pricing categories, with reimbursement ranging from zero to 100 per cent. In 1991, a fixed fee per prescription was introduced for the largest category, but by 1993, the user charge had been made ad valorem at the margin with a reimbursement rate of 75 per cent, provided that the patient charge does not exceed Ikr 3000 per prescription. For pensioners and the handicapped, the marginal reimbursement rate is 90 per cent, with a ceiling charge of Ikr 800. Over-the-counter drugs, even when prescribed by a physician, and certain other categories of drugs are not reimbursed. A few drugs are fully reimbursed to all. Finally, a "discount card" (available to chronic users) increases the reimbursement rate and lowers the ceiling for some categories. Of course, the higher the reimbursement rate, the higher is the average prescription price observed.
38. Expenditure on specialists' services was substantially beyond budgeted levels in 1992.
39. Admittedly, one cannot neglect the usual Nordic policy maker's rule of thumb that "Sweden reforms first", but there is no reason for undue lags in adopting successful foreign reforms.
40. In 1990, these margins were shaved, saving Ikr 100 million.
41. If the real-income elasticity is 1.5, even with the assumption that the relative-price elasticity is zero, the relative price of health care must fall at half the rate of real GDP growth for the share of health spending in GDP to remain constant. If that assumption is invalid and the elasticity is negative, then the required rate of decline is even greater.
42. This assumes an average growth rate of real GDP of 2 per cent per year.
43. Comparisons of spending as a share of GDP involving Iceland are biased due to the fact that generous, means-tested family allowances are paid through a refundable tax credit – worth some 1.2 per cent of GDP – and that employers finance some of the cost of sickness benefits and industrial accidents; this is estimated to add some 3 1/2 per cent to the cost of labour.
44. Maximum benefits are payable only to those who have worked 1700 daytime hours in the past year. Those laid off from jobs in the banking and public sectors receive benefits provided by their former employers. The self-employed as well as those without work experience receive no benefits at all.
45. The ceiling is equal to three-quarters of previous pay.

## References

- Arnason, B. (1990), "Heilbrigdisútgjöld 1960-1988", xerox, May.
- Baldwin, Richard E. (1992), "The Economic Logic of EFTA Countries Joining the EEA and the EC", EFTA, Economic Affairs Department, Occasional Paper No. 41, November.
- Culyer, A.J. (1990), "Cost containment in Europe" in OECD, *Health care systems in transition; the search for efficiency*, Social Policy Studies No. 7, 1990.
- Ems, Emil (1992), "The Role of EFTA in European Economic Integration", EFTA, Economic Affairs Department, Occasional Paper No. 40, October.
- Engle, R.F. and C.W.J. Granger (1987), "Co-integration and error-correction: representation, estimation and testing", *Econometrica*, Volume 55, No. 2, March.
- Gerdtham, U., F. Anderson, J. Sogaard and B. Jönsson (1988), "Economic analysis of health care expenditures: a cross-sectional study of OECD countries", *CMT Report*, 1988:9, Centre for Medical Technology Assessment, Linköping, Sweden.
- Gudmundsson, Björn R. (1992), "The impact of '1992' on the Icelandic manufacturing industries" in EFTA, *Effects of "1992" on the Manufacturing Industries of the EFTA Countries*, Economic Affairs Department, Occasional Paper No. 38, Special Edition, April.
- Juel, Steinar (1992), "The EEA Agreement and the Financial Markets", EFTA, Economic Affairs Department, Occasional Paper No. 39, July.
- Liu, K., M. Moon, M. Sulvetta and J. Chawla (1992), "International infant mortality rankings: a look behind the numbers", *Health Care Financing Review*, U.S. Department of Health and Human Services, Summer, Volume 13, No. 4.
- OECD (1991), *Taxing Profits in a Global Economy*, Paris.
- Poullier, J-P. (1992), "Administrative costs in selected industrialized countries", *Health Care Financing Review*, Summer, Volume 13, No. 4.
- Saltman, Richard B. (1992), "Recent health policy initiatives in Nordic countries", *Health Care Financing Review*, Summer, Volume 13, No. 4.

## Annex I

### A time-series estimation of the expenditure on health care in Iceland

This annex presents the results of an attempt to estimate an econometric equation for the demand for health care in Iceland over the past 30 years. The role of population was investigated; specifically, the hypothesis of scale economies was tested. On a per capita basis, demand for health care has been shown to be a well-defined function of real income (*i.e.* real GDP per capita) in a number of other contexts<sup>1</sup>. It is also expected to be negatively related to relative prices, although it is unclear to what extent the price mechanism is allowed to operate in the field of health care and health-care prices are measured rather poorly. Demographic effects may play a significant role: since the aged are more intensive users of the health-care system, the volume of health-care expenditures per capita should be positively related to the proportion of the population over 65. Other evidence has pointed to a positive impact coming from the youth share as well; accordingly, the share of the population under the age of 15 is included in the list of regressors. Finally, there may well be cyclical variations in the demand for medical care, as the unemployed could be less healthy than their employed counterparts. They would also have a lower shadow price of queuing for rationed care. Thus, a higher unemployment rate could be associated with a greater volume expenditure on health care.

Data are available for Iceland's health spending and other needed variables from 1960 to 1990. In preliminary estimation an effort was made to see if any of the aforementioned regressors might appear with a lag; the only support came from the relative price term. Thus, estimation proceeded over the period 1961 to 1990. The equation was specified in double-logarithmic form, except for the demographic variables and the unemployment rate, which are already in share form. For the latter in fact, both functional forms were tested and were seen to have separate effects. Last, there were no significant departures from constant returns to population growth, and the per-capita specification was adopted. The resulting estimation outcome is given below (with absolute values of t-ratios in parentheses<sup>2</sup>):

$$\begin{aligned} \ln(\text{Real health spending per capita}) = & 0.02 + 1.72*\ln(\text{Real GDP per capita}) \\ & (0.02) \quad (6.44) \\ - 0.98*\ln(\text{Relative price}) + & 0.73*\ln(\text{Lagged relative price}) + 0.22*\text{Share}>65 \\ (2.59) & (2.58) \quad (2.25) \\ - 0.93*\text{Share}<15 + & 0.20*\ln(\text{Unemployment rate}) - 0.13*\text{Unemployment rate} \quad [1] \\ (2.99) & (5.02) \quad (2.30) \end{aligned}$$

Adjusted R<sup>2</sup> = 0.9913      SEE = 0.0475      DW = 1.78

The results largely conform to our expectations, except that the youth share has a significantly negative coefficient. Furthermore, the hypothesis that the long-run effect of relative prices is zero cannot be rejected. With this constraint as well as the elimination of the insignificant constant term, the following result is derived:

$$\begin{aligned} \ln(\text{Real health spending per capita}) &= 1.62 * \ln(\text{Real GDP per capita}) \\ &\quad (11.92) \\ &- 0.82 * \ln(\text{Relative price/lagged relative price}) + 0.24 * \text{Share} > 65 \\ &\quad (3.75) \qquad\qquad\qquad (2.91) \\ &- 0.93 * \text{Share} < 15 + 0.20 * \ln(\text{Unemployment rate}) - 0.13 * \text{Unemployment rate} \quad [2] \\ &\quad (9.53) \qquad\qquad (5.76) \qquad\qquad\qquad (2.54) \end{aligned}$$

Adjusted R<sup>2</sup> = 0.9919      SEE = 0.0459      DW = 1.65

The results show that the real income elasticity is likely to be around 1.6. This is similar to the findings of Arnason (1990), but somewhat higher than most estimates for other countries which are in the 1.0 to 1.5 range (OECD, 1990, p. 31). Second, prices probably only have a short-run effect, but whatever long-run influence they have is quite small. Third, demographic effects appear to be important: fewer youths and more elderly both serve to raise health expenditure levels. Finally, the impact of unemployment seems to be non-linear: higher unemployment rates raise health spending, as posited, but only until the rate reaches 0.20/0.13, that is slightly over 1½ per cent, a value reached only occasionally over the historical period.

However, some of these conclusions may not be robust, since real health-care spending per capita is non-stationary, and thus the t-ratios may not be interpretable (Engle and Granger, 1987). Indeed, the Engle-Granger test for co-integration led to inconclusive results, with a confidence level of only some 80 per cent that the equation residuals are stationary.

Accordingly, the matter was pursued further, and both long- and short-run relationships were specified. In the first long-run (levels) estimation, the terms in unemployment and in the youth share were eliminated, and the equation was rerun, but the results were even less satisfactory from the perspective of the Engle-Granger co-integration test. A search for other non-stationary variables which might have been omitted (besides a deterministic trend, which was highly collinear with the other included regressors), turned up a significant shift variable on real income per capita. With such a long-run specification, the co-integration test outcome was very similar to the 80 per cent confidence level reported above, but inclusion of the lagged residual in the short-run equation yielded a totally insignificant parameter estimate, whereas inclusion of the residual from the original equation [2] yielded the sought-after significant negative parameter estimate given below:

$$\begin{aligned} \ln(\text{Real health spending per capita}) &= 0.76 * \ln(\text{Real GDP per capita}) \\ &\quad (6.59) \\ &+ 0.76 * \ln(\text{Lagged real GDP per capita}) - 0.85 * \ln(\text{Relative price}) \\ &\quad (6.59) \qquad\qquad\qquad (3.13) \end{aligned}$$

$$+ 0.06*\text{dln}(\text{Unemployment rate}) + 0.09*\text{D} - 0.66*\text{Residuals} \quad [3]$$

(2.88)                      (3.16)      (2.96)

Adjusted R<sup>2</sup> = 0.5385              SEE = 0.0455              DW = 1.95

where D is a dummy variable for the period up to 1964 and the residuals are from equation [2].

To sum up then, it can be said that: 1) the long-term real-income elasticity is likely to be in the range of 1<sup>1/2</sup> to 1<sup>3/4</sup>, only slightly above the short-run elasticity; 2) the short-run relative-price elasticity is probably in the range of 0.6 to 1.1, but the longer-run value may very well be zero; 3) the share of the elderly does have a significant long-run influence, with a semi-elasticity of about one-quarter; 4) it is uncertain whether there is a long-run influence from the youth share; and 5) increases in the unemployment rate may have a long-run positive impact, but only over a certain range and only, of course, if the rate is non-stationary; in any case there is a short-run effect, with a ten per cent (not percentage point) increase in the rate of joblessness associated with a 0.6 per cent rise in the volume of per-capita health-care spending.

### Notes

1. See Culyer (1992) and the references cited therein.
2. The t-ratios reported in equations [1] and [2] should be interpreted with caution; since real per-capita health spending is non-stationary, they are not typically t-distributed. Cointegration tests are discussed below.

## Annex II

### A pooled approach to health-care spending in 24 OECD countries

A further effort has been made by the Secretariat to determine the factors which explain the cross-country pattern of health-care expenditure in order to isolate those which distinguish Iceland's case from others in the OECD.

Initially, the model was specified for the year 1990, but eventually, in order to make maximum use of the available data, a pooled cross-country time-series approach was used<sup>3</sup>. Health-care spending, expressed in dollars at purchasing-power-parity (PPP) exchange rates for household consumption expenditure on medical and health care, was assumed to be a function of the following factors:

1. Real income per capita translated into dollars using PPP exchange rates for GDP. Nearly all previous evidence points to an estimated elasticity in excess of unity; indeed, the time-series estimate for Iceland derived in Annex I was above 1.5.
2. Population. Naturally, the greater is the population, the more the country is likely to spend on health care. More interesting is whether or not the elasticity is equal to unity, that is, are there economies or diseconomies of scale to larger populations?
3. Relative prices, defined to be the price of medical and health-care consumption divided by the price of overall GDP, both from the PPP data base. If indeed prices are an effective rationing mechanism in the medical sphere, then this term should exert downward pressure on the volume of health-care spending.
4. The share of the population over 65. Age is probably the most influential factor in determining the level of drug consumption – for example, 70 year-old men use about 4½ times as many pharmaceutical items as their 40 year-old counterparts. Overall, elderly Americans need about four times as much medical care as the rest of the population. If this ratio is borne out elsewhere, then a one percentage point increase in the elderly share of the population should be associated with a three per cent increase in (per capita) health spending.
5. The share of the population under 15. Some previous research has shown that the young have significantly higher health-care needs (Leu, 1986), while others (Gerdtham *et al.*, 1988) have found the opposite. The difference may be due to very high expenditure in the first year of life.
6. The share of public financing in total health expenditure. What has become known in the literature as the “public-choice view” of international differences in health

expenditure (Culyer, 1990) posits that public finance increases demand by reducing the user price to the consumer and likewise increases supply as necessary to meet the extra demand.

7. The unemployment rate. Higher unemployment might induce more psychosomatic and other illness and will bring down the shadow price of queuing for rationed health care.

The equation was specified in double logarithmic form except for those regressors which are expressed in share terms (4 to 7 above). In preliminary estimation checks were made as to the possibility of time-varying parameters; the only variable manifesting such an effect was the real income variable. The estimation results are given below (with absolute values of t-ratios in parentheses):

$$\begin{aligned} \ln(\text{Health expenditure in PPP dollars}) = & -3.94 + 1.60 \cdot \ln(\text{Real income per capita} \\ & (16.45) \quad (38.53) \\ \text{in PPP dollars}) - & 0.0086 \cdot \text{TIME} \cdot \ln(\text{Real income per capita in PPP dollars}) \\ & (3.45) \\ + & 0.97 \cdot \ln(\text{Population}) - 1.03 \cdot \ln(\text{Relative prices}) + 0.03 \cdot \text{Share} > 65 \\ & (102.0) \quad (13.35) \quad (4.59) \\ + & 0.02 \cdot \text{Share} < 15 - 0.0087 \cdot \text{Public expenditure share} + 0.0084 \cdot \text{Unemployment} \\ & (3.40) \quad (6.32) \quad (3.08) \quad \text{rate} \end{aligned}$$

$$R^2 = 0.9962 \quad \text{SEE} = 0.1043 \quad \text{Number of observations} = 144$$

where TIME is unity in 1985 and is incremented annually.

These results reveal that the real income elasticity is indeed in excess of 1.5, but also that it has had some tendency to decline very slightly during the last half of the 1980s. Furthermore, the equation is properly specified in absolute rather than per capita terms, as there is significant evidence of some limited economies of scale – the t-ratio for the test of whether the parameter on the population variable differs from unity is 3.82. A third very tentative conclusion is that there may be a significant role for relative prices in rationing the demand for health care. However, this unitary estimated elasticity may be reflecting, even in a cross-country context, the constraint of fixed health-care budgets in most OECD countries: higher prices may be inevitably offset by lower volumes on the supply side even if there is no reaction on the demand side. Alternatively, if the price level of total health expenditure is better proxied by the PPP for total expenditure on GDP than by the PPP for household consumption of medical and health care used here, there would be a clear bias toward this result. Demographics are also important. As expected, the elderly are seen to consume about four times as much in the way of health services as the rest of the population, while the young also consume significantly more (as Leu (1986) had found). In addition, public financing is associated with less spending, not more as supporters of the public-choice view contend. Finally, higher unemployment is associated with higher health-care spending: each percentage point raises outlays by nearly one per cent.

The equation results have been used for two further pieces of analysis. First, they have been exploited to generate the predicted evolution of health spending in volume

terms in Iceland over the estimation period. The results are given below in logarithmic differences times 100 (which approximate growth rates in percent):

	Predicted	Actual
1986	15.1	19.4
1987	12.9	12.7
1988	1.3	9.8
1989	5.1	4.4
1990	5.9	2.5

Therefore, spending growth was “surprisingly” strong in 1986 and, especially, in 1988, before moderating more than expected in 1989 and, especially, in 1990. The vast majority of the slowdown is the result of the stagnation in real per capita incomes, while movements in the unemployment rate and in the youth share have tended to soften that outcome.

Second, averages of the vectors of explanatory variables across the six-year sample period were calculated in order to explore the relative importance of the different factors in determining the level of Iceland’s spending. Of course, the dominant factor is population, but once this is controlled for, Icelanders spent 4.2 per cent less than the average OECD country when expenditure is evaluated in terms of expenditure-specific PPP price levels. The equation allocates this as follows:

Real income per capita	+25.9	Public expenditure share	-10.6
Share<15	+7.6	Share>65	-8.1
Unexplained residual	+5.0	Unemployment rate	-5.2
		Relative prices	-0.5

Thus, higher real incomes are the single most important factor in determining differences in spending patterns between Iceland and the average OECD country. Outlays are also boosted by the large share of the population under 15. Offsetting these factors are the restraining effects of the high relative price of health care, of the higher-than-average public expenditure share, of the small share of the population over 65 and of the low unemployment rate. Overall, though, spending in the second half of the 1980s was nearly 5 per cent higher than predicted by the equation.

### Note

1. All data are available on a time-series basis for the period 1985-90 except health-care prices which are only available for the years 1985 and 1990. Thus, data for this series for the intervening years were obtained by interpolation.



*Annex III*

**Main economic events**

**1992**

**January**

Currency basket changes from a trade-weighted average of 17 currencies, to one with 76 per cent weight on the ecu, 18 per cent on the dollar and 6 per cent on the yen.

1992 Budget passed with a target deficit of 1 per cent of GDP.

Fisheries Price Equalisation Fund suspended for the remainder of the 1991/92 fishing season.

The Central Bank raised the reserve requirement from 6 per cent to 7 per cent.

**February**

Second round of EEA negotiations completed.

**April**

European Court approves EEA.

Central Bank Act amended by the Althing, authorising the Central Bank to operate a foreign currency market, to let the exchange rate of the króna be determined by that market and to intervene in that market.

New wage pact agreed, with a pay rise of 1.7 per cent, a special low income allowance paid on income under 80 thousand krónur, and an increase in social security benefits.

**May**

The European Community and the EFTA countries (including Iceland) sign an agreement to establish a European Economic Area.

Over-the-counter securities market established.

**June**

Accumulated assets of the Fisheries Price Equalisation Fund released to fishing firms on 1 June 1992 to ease mounting financial pressures in the industry. Contributions to the Fund had ceased on 1 September 1991.

Iceland leaves the International Whaling Commission effective 30 June.

Treasury and Central Bank agree that direct Treasury borrowing from the Central Bank will cease in 1992.

### **July**

For the 1992/93 fisheries year beginning in August, cod quotas slashed 23 per cent while allowable catch for most other species is increased.

### **October**

Budget bill for 1993 presented to the Althing on 6 October. The bill calls for tax increases and cuts in transfers, and a budget deficit of 1.6 per cent of GDP.

The first auction of government bonds is held, on 14 October.

### **November**

On 23 November, króna devalued by 6 per cent against an ecu/dollar/yen basket of currencies. At the same time, the government proposes a variety of measures aimed at reducing the budget deficit and improving competitiveness. These include further spending cuts, increases in personal taxes and VAT taxes, abolition of the local turnover tax and reduction in corporate tax rates.

Fisheries Development Fund proposed, with the aim of reducing excess capacity in the fisheries sector. The fund is financed by fees on fishing boats, and also (starting in 1996-97) by taxes on allotted quotas.

### **December**

Revised budget bill passed by the Althing.

## **1993**

### **January**

EEA membership approved by the Althing.

New regime for the reimbursement of drug purchases and for ambulatory and specialist care.

**BLANK PAGE**

*STATISTICAL AND STRUCTURAL ANNEX*

Table A. Supply and use of resources

Kr. million, current prices

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Private consumption	22 923	39 432	53 930	74 689	96 072	129 795	156 203	184 435	213 555	236 276	236 213
Public consumption	6 893	11 978	14 595	20 954	28 419	38 529	49 895	59 503	68 854	76 918	79 434
Gross fixed asset formation	9 251	14 127	18 356	24 460	29 684	41 042	48 414	56 051	66 896	72 700	64 900
<b>Expenditure on final domestic use</b>	<b>39 067</b>	<b>65 537</b>	<b>86 881</b>	<b>120 103</b>	<b>154 175</b>	<b>209 366</b>	<b>254 512</b>	<b>299 989</b>	<b>349 305</b>	<b>385 894</b>	<b>380 547</b>
Change in stocks of export products	913	-1 070	786	-978	-2 094	-416	1 850	-578	-1 787	1 233	123
<b>National expenditure</b>	<b>39 980</b>	<b>64 467</b>	<b>87 667</b>	<b>119 125</b>	<b>152 081</b>	<b>208 950</b>	<b>256 362</b>	<b>299 411</b>	<b>347 518</b>	<b>387 127</b>	<b>380 670</b>
Exports of goods and services	12 714	27 078	34 295	49 534	62 888	73 085	83 548	108 335	126 456	127 231	123 537
Imports of goods and services	14 329	25 275	33 871	48 663	55 880	73 965	84 100	99 240	119 595	130 305	121 952
<b>Gross domestic product (market prices)</b>	<b>38 365</b>	<b>66 270</b>	<b>88 091</b>	<b>119 996</b>	<b>159 089</b>	<b>208 070</b>	<b>255 810</b>	<b>308 506</b>	<b>354 379</b>	<b>384 053</b>	<b>382 255</b>
Net income from abroad	-1 495	-3 066	-4 554	-5 584	-6 229	-6 203	-8 333	-13 217	-14 611	-14 974	-13 585
<b>Gross national product</b>	<b>36 870</b>	<b>63 204</b>	<b>83 537</b>	<b>114 412</b>	<b>152 860</b>	<b>201 867</b>	<b>247 477</b>	<b>295 289</b>	<b>339 768</b>	<b>369 079</b>	<b>368 670</b>
Depreciation	4 742	8 724	10 691	14 502	18 425	22 030	27 067	35 166	41 113	44 000	45 300
<b>Net national product (market prices)</b>	<b>32 128</b>	<b>54 480</b>	<b>72 846</b>	<b>99 910</b>	<b>134 435</b>	<b>179 837</b>	<b>220 410</b>	<b>260 123</b>	<b>298 655</b>	<b>325 079</b>	<b>323 370</b>
Indirect taxes	9 202	14 486	20 062	26 341	33 964	46 314	58 875	69 133	75 486	84 782	85 500
Subsidies	1 392	2 204	2 389	3 491	4 228	4 783	7 808	9 808	10 828	11 240	12 000
<b>Net national income</b>	<b>24 318</b>	<b>42 198</b>	<b>55 173</b>	<b>77 060</b>	<b>104 699</b>	<b>138 306</b>	<b>169 343</b>	<b>200 798</b>	<b>233 997</b>	<b>251 537</b>	<b>249 870</b>

Sources: National Economic Institute and Central Bank of Iceland.

**Table B. Supply and use of resources**  
 Kr. Million, constant 1980 prices

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991 <sup>1</sup>	1992 <sup>1</sup>
Private consumption	9 996	9 417	9 774	10 207	10 947	12 764	12 220	11 705	11 657	12 252	11 676
Public consumption	3 010	3 156	3 172	3 374	3 604	3 840	4 016	4 134	4 307	4 445	4 427
Gross fixed asset formation	3 945	3 461	3 778	3 854	3 808	4 531	4 505	4 132	4 247	4 336	3 759
<b>Expenditure on final domestic use</b>	<b>16 951</b>	<b>16 034</b>	<b>16 724</b>	<b>17 435</b>	<b>18 359</b>	<b>21 135</b>	<b>20 741</b>	<b>19 971</b>	<b>20 211</b>	<b>21 049</b>	<b>19 900</b>
Change in stocks of export products	357	-207	122	-85	-202	-75	130	-40	-96	61	2
<b>National expenditure</b>	<b>17 308</b>	<b>15 827</b>	<b>16 846</b>	<b>17 350</b>	<b>18 157</b>	<b>21 060</b>	<b>20 871</b>	<b>19 931</b>	<b>20 115</b>	<b>21 121</b>	<b>19 917</b>
Exports of goods and services	5 403	5 970	6 119	6 792	7 195	7 464	7 213	7 400	7 388	6 960	6 834
Imports of goods and services	6 016	5 432	5 929	6 487	6 549	8 073	7 703	6 913	6 981	7 358	6 777
<b>Gross domestic product (market prices)</b>	<b>16 695</b>	<b>16 365</b>	<b>17 036</b>	<b>17 655</b>	<b>18 803</b>	<b>20 451</b>	<b>20 381</b>	<b>20 418</b>	<b>20 522</b>	<b>20 727</b>	<b>19 960</b>
Net income from abroad	-546	-693	-804	-834	-836	-870	-992	-1 055	-1 044	-1 106	-1 087
<b>Gross national product (market prices)</b>	<b>16 149</b>	<b>15 672</b>	<b>16 232</b>	<b>16 821</b>	<b>17 967</b>	<b>19 581</b>	<b>19 389</b>	<b>19 363</b>	<b>19 478</b>	<b>19 634</b>	<b>18 888</b>
Effect of changes in terms of trade	-176	-276	-327	-396	7	374	326	-1	-134	175	29
<b>Gross national income<sup>2</sup></b>	<b>15 973</b>	<b>15 396</b>	<b>15 905</b>	<b>16 425</b>	<b>17 974</b>	<b>19 955</b>	<b>19 715</b>	<b>19 362</b>	<b>19 344</b>	<b>19 809</b>	<b>18 917</b>

*Notes:* 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.

1. The accounts for 1991 and 1992 do not add to the subtotals due to a change of price base in Iceland. The Icelandic constant-price accounts are in the process of being rebased to 1990 prices and will appear in next year's Survey.

2. Gross national product plus effect of changes in terms of trade.

*Sources:* National Economic Institute and Central Bank of Iceland.

Table C. Production and employment

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 <sup>1</sup>
<b>Fisheries and fish processing</b>											
Output (volume change over previous year)	-8.7	-14.6	13.8	10.9	4.8	0.3	3.8	-2.3	-1.2	-2.6	-2.0
Export production											
Value (kr million)	7 267	12 564	16 562	23 937	32 605	40 220	45 686	55 507	67 692	74 334	70 210
Fishing fleet: <sup>2</sup>											
Trawlers (GRT)	47 944	48 478	50 801	50 844	50 569	51 380	54 086	52 830	49 912	47 493	43 031 <sup>3</sup>
Motor boats (GRT)	63 904	63 294	62 046	61 750	61 822	66 072	65 521	63 181	59 366	52 500	47 317 <sup>3</sup>
Total (GRT)	111 848	111 772	112 847	112 594	112 391	117 452	119 607	116 011	109 278	99 993	90 348 <sup>3</sup>
Employment (man-years)	15 583	16 045	15 802	15 728	16 064	16 788	15 145	14 893	14 746	14 748	13 708
<b>Agriculture</b>											
Output (volume change over previous year)	-1.1	1.4	2.8	4.0	-0.4	1.5	-5.1	-0.6	-1.9	-0.6	
Export production											
Value (kr million)	126	237	406	597	690	1 015	997	1 288	1 765	1 657	1 138 <sup>4</sup>
Capacity:											
Cultivated grassland (1000 hect.)	140.6	142.1	143.9	145.1	146.1	146.6	147.0	147.0	146.8	146.5	
Sheep (1000 heads)	747.7	711.9	714.4	709.3	675.5	624.3	586.9	560.9	548.5	510.8	
Cattle (1000 heads)	64.4	68.5	72.7	72.9	71.4	69.0	70.8	72.8	74.9	77.7	
Employment (man-years)	8 182	7 864	7 595	7 420	7 374	7 147	6 470	6 399	6 270	6 150	
<b>Manufacturing (excluding fish processing)</b>											
Output (volume change over previous year)	1.4	-0.9	7.3	2.8	2.3	8.7	-1.4	-2.5	0.5	1.0	
Export production											
Value (kr million)	1 910	4 528	6 673	7 776	8 794	10 059	13 677	19 460	18 742	15 927	13 966 <sup>4</sup>
of which:											
Aluminium	1 042	2 333	3 445	3 472	4 042	4 761	6 705	10 146	9 636	8 340	7 964
Diatomite	70	142	189	289	284	296	348	416	522	444	386
Ferro-silicon	233	619	1 060	1 267	1 352	1 195	2 203	2 899	2 431	1 765	1 656
Employment (man-years)	16 494	16 394	16 956	17 620	17 740	18 439	17 057	16 195	15 573	16 134	15 366

1. Projection.

2. Including whale catchers, excluding open boats.

3. Situation on 1st January, 1993.

4. January to November, 1992.

Sources: National Economic Institute and Central Bank of Iceland.

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

Kr. million, current prices

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>Gross fixed asset formation, total</b>	9 251	14 127	18 356	24 460	29 684	41 042	48 414	56 051	66 896	72 700
Classification by end-use:										
<b>Industrial asset formation</b>	3 775	5 888	7 961	12 230	16 090	22 148	23 959	24 697	29 686	31 300
Agriculture	409	621	978	1 609	2 226	2 367	2 560	2 448	1 791	1 890
Fishing	518	781	839	910	2 648	4 192	5 835	3 361	2 361	2 600
Fish processing	360	521	785	1 137	1 358	1 440	1 509	1 265	1 730	1 410
Manufacturing other than fish processing	798	1 264	2 020	3 023	3 457	4 261	4 671	5 865	5 387	6 690
Transport equipment	593	832	790	1 734	1 403	1 774	1 387	3 846	9 640	9 240
Commercial buildings, hotels, etc.	613	1 084	1 269	1 933	2 626	4 770	4 190	4 700	4 721	4 330
Various machinery and equipment	484	785	1 280	1 884	2 372	3 344	3 807	3 212	4 056	5 140
<b>Residential construction</b>	2 251	3 495	4 714	5 380	5 770	7 752	10 488	13 280	15 555	15 900
<b>Public works and buildings</b>	3 225	4 744	5 681	6 850	7 824	11 142	13 967	18 074	21 655	25 500
Electric power, generation and distribution	1 159	1 510	1 550	991	899	1 177	1 882	3 103	4 881	5 800
Geothermal heating and water supply	330	375	570	871	840	930	1 650	2 340	1 645	1 450
Communications	1 061	1 764	2 229	3 062	3 625	5 634	5 409	6 288	7 159	9 450
Public buildings	675	1 095	1 332	1 926	2 460	3 401	5 026	6 343	7 970	8 800
<b>National wealth</b>	125 116	212 246	263 216	356 666	449 439	547 242	675 042	850 689	1 021 840	1 114 939
Private sector <sup>1</sup>	42 096	64 289	81 317	110 101	139 415	167 747	208 308	257 297	311 093	342 282
Public works and buildings	45 191	79 317	96 436	129 744	159 886	195 650	237 941	299 555	372 779	413 307
Industrial sector	37 829	68 640	85 463	116 821	150 138	183 845	228 793	293 837	337 968	359 350

1. Residential housing.

Source: National Economic Institute.



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

Kkr million, constant 1980 prices

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>Gross fixed asset formation, total</b>	3 945	3 461	3 778	3 854	3 808	4 531	4 505	4 132	4 274	4 336
Classification by end-use:										
<b>Industrial asset formation</b>	1 627	1 443	1 653	1 961	2 091	2 522	2 323	1 857	1 997	2 005
Agriculture	174	149	207	266	305	283	255	192	116	115
Fishing	226	196	173	147	330	461	542	244	148	152
Fish processing	157	131	161	177	168	158	139	93	112	84
Manufacturing other than fish processing	344	308	402	460	418	456	424	420	336	393
Transport equipment	254	191	150	246	179	207	142	281	609	559
Commercial buildings, hotels, etc.	260	269	257	296	323	499	372	339	318	269
Various machinery and equipment	212	199	303	369	368	458	449	288	358	433
<b>Residential construction</b>	952	865	955	825	711	812	932	958	952	904
<b>Public works and buildings</b>	1 366	1 153	1 170	1 068	1 006	1 197	1 250	1 317	1 298	1 427
Electric power, generation and distribution	497	366	311	152	111	124	168	226	310	347
Geothermal heating and water supply	140	93	115	133	104	97	146	169	106	87
Communications	444	423	474	488	488	620	489	464	427	525
Public buildings	285	271	270	295	303	356	447	458	455	467
<b>National wealth</b>	52 861	54 173	55 951	57 580	59 521	61 652	64 194	65 563	67 170	68 926
Private sector <sup>1</sup>	17 873	18 321	19 043	19 473	20 229	20 627	21 570	21 943	22 460	23 089
Public works and buildings	18 737	19 198	19 661	20 006	20 279	20 737	21 238	21 791	22 309	22 943
Industrial sector	16 251	16 654	17 247	18 101	19 013	20 288	21 386	21 829	22 401	22 894

1. Residential housing and private automobiles.

Source: National Economic Institute.

Table F. **Balance of payments, OECD basis**

US \$ million

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>Current balance</b>	-148	-263	-57	-131	-115	17	-191	-221	-84	-160	-321
Long term (excl. special transactions)	191	214	94	113	155	157	178	208	261	278	292
a) Private	100	50	-29	-18	32	47	95	65	70	120	72
b) Official	91	164	122	131	123	109	83	143	191	159	221
<b>Basic balance</b>	43	-49	37	-18	40	174	-13	-14	177	118	-29
Non-monetary short-term private capital	22	-10	-47	25	128	-43	76	15	-104	-65	48
Non-monetary short-term official capital	19	16	4	23	-58	-4	-16	22	-24	-2	-18
Errors and omissions	-14	-47	2	-28	-53	-18	-59	-4	13	24	31
<b>Balance on non-monetary transactions</b>	69	-90	-5	1	56	108	-12	19	63	75	32
Private monetary institutions' short-term capital	3	-6	16	-16	8	-9	-6	-17	-8	-	-22
<b>Balance on official settlements</b>	72	-95	11	-15	64	99	-18	1	55	75	10
Use of IMF credit	-11	18	-1	-	-	-13	-14	-	-	-	-
Special transactions	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous official accounts	-4	-	-	-	-	-	-	-	-	-	-
Allocations of SDRs	4	-	-	-	-	-	-	-	-	-	-
Change in reserves (+ = increase)	60	-78	10	-15	64	86	-32	1	55	74	11
a) Gold	-	-	-	-	-	-	-	-	-	-	-
b) Currency assets	62	-66	8	-15	64	87	-34	2	56	74	11
c) Reserve position in IMF	-	-10	4	-	-	-	-	-	-	-	-
d) Special Drawing Rights	-2	-2	-2	-	-	-	2	-1	-1	-	-

Source: OECD.

Table G. Central government and social security income and expenditure

Kr million, accruals basis

	1984	1985	1986	1987	1988	1989	1990	1991	1992 <sup>1</sup>
<b>Current revenue</b>	23 889	31 304	41 218	53 876	71 300	86 280	95 514	106 358	108 757
Direct taxes	3 976	4 616	7 630	8 273	14 110	17 864	22 489	30 267	31 735
Indirect taxes	17 115	22 850	29 334	40 462	51 011	59 646	65 895	68 323	67 970
Other	2 798	3 838	4 254	5 141	6 179	8 770	7 130	7 768	9 052
<b>Current expenditure</b>	19 468	28 186	36 684	48 318	65 982	81 971	94 093	102 893	103 865
Public consumption	11 382	16 499	22 178	30 387	38 960	46 005	53 728	59 298	60 234
Interest expenditure	2 297	3 300	3 931	4 340	7 174	9 685	11 370	12 962	10 921
Current transfers and subsidies	5 789	8 387	10 575	13 591	19 848	26 281	28 995	30 633	32 710
<b>Current balance</b>	4 421	3 118	4 534	5 558	5 318	4 309	1 421	3 465	4 892
<b>Capital revenue</b>	525	680	880	1 234	1 492	1 714	1 976	2 346	2 375
Capital transfers	120	129	169	371	474	469	468	610	589
Consumption of fixed capital	406	551	711	863	1 018	1 245	1 508	1 736	1 786
<b>Capital expenditure</b>	3 659	5 812	11 822	8 354	11 824	18 277	15 832	18 398	16 542
Gross fixed investment	1 279	1 888	1 871	3 065	3 961	4 424	6 327	7 095	6 828
Capital transfers	2 380	3 924	9 951	5 289	7 863	13 853	9 505	11 303	9 714
<b>Capital balance</b>	-3 134	-5 132	-10 942	-7 120	-10 332	-16 563	-13 856	-16 052	-14 167
Financial balance	1 288	-2 014	-6 408	-1 562	-5 014	-12 254	-12 435	-12 587	-9 275
Net increase in claims	2 977	3 225	-3 369	3 782	3 827	680	-1 058	4 186	585
<b>Borrowing requirement</b>	1 689	5 239	3 039	5 344	8 841	12 934	11 377	16 773	9 860

1. Preliminary.

Source: National Economic Institute.

Table H. Fish catch, wages and prices

	Fish catch (thousand metric tons)					Wages and prices (indices 1980 = 100)								
	Total	White fish, etc.	Herring	Capelin	Shrimp, lobster, shell-fish	Hourly wage rates, unskilled workers <sup>1</sup>	Indices				Export price of fish products <sup>2</sup>			
							Total cost of living	Consumer price index	Credit terms index	Building cost	Fresh and iced fish	Frozen groundfish products	Salted products	Fish meal and oil
1979	1 641	578	45	964	10	63.7	63.1	62.0	63.4	64.4	68.5	74.4	64.2	63.8
1980	1 508	659	53	760	12	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1981	1 441	716	40	642	11	152.1	150.9	150.6	151.8	152.4	124.2	144.8	173.3	152.2
1982	788	690	56	13	24	237.2	227.8	227.5	227.4	236.7	220.4	242.9	263.5	191.7
1983	839	603	59	133	31	362.0	419.8	422.6	407.9	403.4	360.0	500.7	448.4	511.6
1984	1 536	565	50	867	42	443.1	542.3	550.7	545.7	518.0	486.2	593.5	519.5	551.4
1985	1 680	586	50	993	44	591.4	717.9	730.5	712.8	678.0	805.0	821.4	726.8	597.8
1986	1 656	632	66	895	55	787.8	870.6	880.9	888.4	855.0	1 048.2	985.0	1 013.8	603.8
1987	1 637	684	75	804	55	1 083.4	1 034.0	1 047.5	1 043.3	1 005.0	1 180.0	1 163.6	1 295.5	592.7
1988	1 758	697	93	909	42	1 364.9	1 297.2	1 324.5	1 287.2	1 186.0	1 313.9	1 296.2	1 387.7	889.3
1989	1 513	692	97	667	39	1 526.0	1 570.6	1 619.8	1 524.4	1 450.0	1 762.9	1 583.1	1 634.7	1 237.8
1990	1 506	673	90	692	44	1 646.0	1 803.6	1 858.0	1 760.0	1 728.0	2 314.4	2 090.4	2 286.7	1 139.9
1991	1 042	654	78	254	51	1 804.0	1 926.0	1 984.3	1 894.0	1 866.0	2 476.5	2 457.1	2 666.3	1 295.5
1992	1 573	588	123	800	62	1 865.6	1 997.3	2 065.7	1 964.2	1 910.8	2 460.4	2 347.6	2 561.7	1 286.4

1. Weighted averages; 1992 data is for the second quarter.

2. The index shows the development of export prices (fob) in terms of Icelandic kronur.

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

Table I. Foreign trade, total and by area  
US \$ million, monthly rates

	Total imports cif	Imports by area						Total exports fob	Exports by area					
		OECD countries				Non-OECD countries			OECD countries			Non-OECD countries		
		Total	Europe		USA	Eastern Europe	Non-OPEC developing countries		Total	Europe		USA	Eastern Europe	Non-OPEC developing countries
			EEC	Others						EEC	Others			
1977	50.7	41.6	24.5	10.3	3.3	6.1	2.8	42.7	34.6	16.8	4.0	12.9	5.1	2.0
1978	56.7	47.8	27.4	12.4	4.0	5.6	3.2	54.2	43.6	21.6	5.0	15.9	4.2	3.7
1979	68.8	57.5	34.3	13.9	4.5	8.5	2.7	65.8	58.1	30.7	6.7	18.4	5.3	1.4
1980	83.4	71.0	39.7	15.7	7.8	9.1	3.3	77.5	62.8	36.4	8.1	16.7	6.8	2.2
1981	86.3	74.6	41.0	19.1	6.7	7.8	3.9	75.4	57.3	34.5	5.2	15.7	6.0	1.6
1982	78.6	67.1	38.9	15.6	6.6	7.8	3.7	57.2	48.9	27.8	4.2	14.8	4.8	1.2
1983	69.1	59.5	33.7	14.2	5.4	7.6	2.0	62.5	52.8	27.6	5.5	17.7	5.0	1.6
1984	70.3	60.7	36.2	13.1	4.8	7.5	2.1	61.9	54.6	29.2	5.3	17.6	5.9	1.2
1985	75.5	66.7	40.0	14.9	5.1	6.4	2.3	67.8	61.0	33.1	5.9	18.3	5.3	1.4
1986	93.1	83.9	49.5	19.2	6.5	5.8	3.3	91.2	83.1	49.5	9.2	19.8	5.0	1.5
1987	131.9	119.6	69.1	27.3	9.4	7.2	5.1	114.3	105.4	65.6	9.6	20.9	5.4	1.8
1988	133.6	121.3	69.0	29.7	10.1	7.2	5.1	119.5	108.5	70.6	12.2	16.2	6.3	3.3
1989	116.7	104.5	65.6	22.4	13.0	7.3	4.8	116.7	104.0	65.6	13.3	16.4	6.2	6.0
1990	138.7	124.1	69.5	22.7	19.7	9.0	5.5	132.6	123.2	89.9	11.6	13.1	3.8	4.7
1991	143.0	130.2	75.0	24.6	14.8	5.9	6.8	129.1	123.0	86.3	9.9	16.1	1.1	4.0

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

Table J. Foreign trade by commodity group

US \$ million

		Imports by commodity group						Exports by commodity group							
Total	Transport equipment	Other imports					Total	Fish products, total	Frozen fish fillets	Herring, salted	Herring and capelin meal	Agricultural products	Aluminum products	Other manufactured products	
		Total	Food and live animals	Manufactured goods	Machinery and apparatus	Other goods									
SITC No.	78-79	0	6	71-77											
1978	673.4	66.6	606.8	57.7	141.4	137.1	270.6	649.4	496.2	216.6	15.5	63.4	16.2	87.3	40.9
1979	825.0	74.0	751.0	68.7	159.0	143.7	379.6	789.1	589.3	258.4	22.1	60.9	21.3	106.3	64.3
1980	1 000.1	102.7	897.4	82.3	194.1	172.6	448.4	931.2	697.1	266.4	21.7	61.6	17.7	113.2	88.7
1981	1 021.0	107.8	913.2	81.3	189.4	183.8	458.7	902.5	706.4	237.1	22.1	45.3	13.3	87.5	86.2
1982	941.5	87.5	854.0	76.1	182.3	169.1	426.5	677.0	507.9	220.0	17.7	8.5	9.0	68.0	82.7
1983	815.2	58.4	756.8	72.9	156.7	139.0	388.2	745.3	506.7	245.9	18.3	1.9	9.1	130.9	87.4
1984	821.3	65.4	755.9	69.5	149.6	155.9	380.9	744.2	500.2	222.3	24.5	42.3	13.9	108.2	99.4
1985	904.0	60.7	843.3	72.0	163.1	185.0	423.2	813.9	609.3	261.5	21.2	44.4	13.1	80.5	102.1
1986	1 115.3	135.4	979.9	85.2	211.1	233.3	450.3	1 095.8	843.8	320.7	18.0	57.0	16.9	100.5	115.7
1987	1 581.3	268.4	1 312.9	99.8	275.6	337.9	599.6	1 374.3	1 044.5	381.8	21.7	50.9	26.1	131.6	144.4
1988	1 590.3	266.8	1 323.5	106.7	286.4	318.2	612.2	1 431.2	1 016.9	367.1	24.6	75.1	24.8	153.8	167.0
1989	1 395.0	183.8	1 211.2	110.7	256.6	269.1	574.8	1 401.3	994.3	398.2	21.8	63.1	23.9	180.1	164.8
1990	1 654.6	260.8	1 393.8	122.5	278.4	318.9	674.0	1 587.1	1 197.7	521.9	26.0	53.9	30.5	164.3	159.8
1991	1 738.8	220.7	1 518.1	126.7	309.0	370.7	711.6	1 549.2	1 239.2	589.8	14.8	21.5	27.4	136.6	132.8

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

Table K. Money and credit

End of period

Central Bank		Money supply			Deposit money banks			Credits granted by DMB					Foreign exchange		
Penalty rates (annual rate) <sup>4</sup>	Net position of government	M1 <sup>1</sup>	M2 <sup>2</sup>	M3 <sup>3</sup>	Required reserves	Demand deposits	Net foreign liquid assets	Total	of which to				Net foreign reserves	Commercial banks' short-term foreign assets	
									Agriculture	Fishery and fish processing	Manufacturing and commerce	Dwellings			
%		Kkr million													
1979	45.0	303	625	1 677	2 503	563	468	47	2 235	378	501	617	273	404	-104
1980	55.8	336	1 010	2 773	4 137	1 003	791	78	3 533	532	817	978	456	910	-323
1981	55.3	268	1 620	4 841	7 056	1 904	1 224	69	6 165	800	1 421	1 645	781	1 637	-447
1982	58.0	145	2 089	7 133	11 149	3 048	1 570	198	11 592	1 273	3 111	3 386	1 197	1 494	-1 217
1983	58.2	852	3 700	12 372	19 902	5 594	2 941	-45	20 628	2 191	5 570	5 806	2 183	2 603	-3 088
1984	31.5	1 159	5 299	18 666	26 575	7 143	4 354	283	30 149	2 860	8 857	8 694	2 830	2 160	-5 710
1985	44.0	3 147	6 662	30 126	39 135	7 987	5 436	144	39 622	4 028	8 537	12 567	3 678	7 671	-10 022
1986	30.5	2 806	9 682	41 368	52 940	10 778	7 991	461	48 651	4 972	7 602	15 782	4 651	11 273	-7 860
1987	35.9	5 550	12 750	56 902	71 602	11 159	10 562	658	71 701	6 367	11 699	22 596	6 171	10 537	-11 105
1988	43.9	9 117	14 853	73 271	88 802	12 162	12 302	1 700	95 505	7 681	17 161	28 737	8 064	11 887	-15 399
1989	35.9	8 237	19 725	92 548	112 998	14 711	16 750	2 943	118 122	9 254	19 261	34 518	11 325	19 951	-11 513
1990	26.0	3 594	24 644	105 731	129 802	11 223	21 587	2 379	136 547	10 589	17 939	36 037	12 916	23 459	-8 597
1991	25.0	8 748	29 553	116 697	148 436	10 418	26 339	3 506	152 928	10 768	19 307	40 854	14 051	23 967	-10 009
1992	19.5	1 551	30 050	116 791	153 971	9 255	26 469	3 401	158 460	8 887	19 568	41 964	14 824	30 996	

1. Notes and coins plus demand deposits.

2. Broad money, i.e. M1 plus general savings deposits.

3. M2 plus time deposits.

4. Annual average.

Sources: Central Bank of Iceland.

Table L. **Public sector**

	1960	1970	1980	1988	1989	1990	1991	1992
<b>General government accounts (as a per cent of GDP)</b>								
Current revenue	28.2	30.2	33.1	35.2	35.3	34.3	35.2	36.0
Tax revenue <sup>1</sup>	27.2	29.6	30.9	32.8	32.4	31.8	32.6	33.1
Interest income	..	..	1.9	2.0	2.2	1.6	1.8	1.8
Capital revenue	..	..	0.2	0.6	0.6	0.9	0.9	1.0
Total expenses	25.8	29.9	32.4	38.0	40.6	38.5	39.4	39.5
<i>of which:</i>								
Current expenditure	..	..	26.0	31.3	32.3	31.8	32.2	33.0
Current transfers	..	..	4.3	5.2	5.4	5.4	5.6	5.8
Subsidies	..	..	3.1	3.1	3.7	3.1	2.7	3.0
Capital expenditure	..	..	6.4	6.8	8.3	6.7	7.3	6.5
Gross fixed investment	..	..	3.7	4.1	4.1	4.1	4.2	4.0
Capital transfers	..	..	2.7	2.7	4.2	2.6	3.0	2.5
<b>Tax receipts as a per cent of general government total taxes</b>								
General government								
Direct taxes	31.5	30.9	26.9	29.1	30.2	32.4	36.2	37.3
Indirect taxes	68.5	69.1	73.1	70.9	69.8	67.6	63.8	62.7
Central government and Social security								
Total taxes	77.5	77.2	79.8	78.5	78.2	79.1	78.9	78.8
Direct taxes	13.3	16.8	15.9	17.0	18.0	20.1	24.2	25.1
Indirect taxes	64.2	60.4	63.9	61.5	60.2	59.0	54.7	53.7
Local government								
Total taxes	22.5	22.8	20.2	21.5	21.8	20.9	21.1	21.2
Direct taxes	18.2	14.1	9.2	9.5	9.6	8.6	9.1	9.0
Indirect taxes	4.3	8.7	11.0	12.1	12.2	12.3	12.0	12.2

1. Direct and indirect taxes.

2. General affairs include Government administration and Administration of justice and occupational safety.

Sources: National Economic Institute.



Table M. Labour market

	Capital area	Western Iceland	West Fjords	North west Iceland	North east Iceland	Eastern Iceland	Southern Iceland	Reykjanes peninsula	Total
<b>Employment (number of man years)</b>									
1980	57 481	6 510	5 208	4 674	11 104	5 913	8 602	6 783	106 275
1988	76 858	7 133	5 190	4 950	12 105	5 978	9 057	7 471	128 742
1989	75 142	7 250	5 158	5 233	12 100	6 088	9 576	7 641	128 187
1990	73 882	7 152	5 349	5 144	12 270	5 957	9 637	7 604	126 994
1991	74 462	7 208	5 391	5 184	12 366	6 003	9 713	7 664	127 991
1992	75 176	7 277	5 442	5 234	12 485	6 061	9 806	7 737	129 217
<b>Unemployment rate (per cent)</b>									
1980	0.2	0.2	0.1	0.9	0.7	0.5	0.4	0.3	0.3
1988	0.2	1.4	0.3	2.0	1.4	1.2	1.5	0.7	0.6
1989	1.1	2.6	0.8	3.4	2.6	2.6	2.4	2.0	1.7
1990	1.2	2.6	0.4	3.0	3.3	3.3	2.4	1.9	1.8
1991	0.9	1.9	0.3	2.9	2.8	2.8	2.1	2.3	1.5
1992	2.6	3.0	0.8	3.7	3.9	3.6	3.5	5.6	3.0
		1961	1970	1980	1988	1989	1990	1991	1992
<b>Population by age group</b>									
(per cent change over previous year)									
Under 15 and over 65 years		2.0	-0.4	0.3	0.6	0.8	0.8		
Between 15 and 19 years		3.3	1.8	-0.4	1.4	0.9	1.5		
Between 20 and 64 years		1.9	1.1	1.9	1.1	1.4	0.8		
Between 15 and 64 years		2.1	1.2	1.5	1.1	1.3	0.8		
Total population		2.1	0.5	1.1	1.6	2.1	0.8	1.2	1.0
<b>Labour supply</b>									
(per cent change over previous year)									
		-0.1	2.0	3.3	-2.8	-0.4	-0.9	0.8	
<b>Work stoppages</b>									
Number of stoppages	..	65	14	15	16	1	7	4	
Working days lost	..	48	48	131	611	31	27	6	
Number of participants	..	15 705	4 220	11 642	2 028	177	751	611	
Number of man-days lost	..	303 743	30 760	100 773	79 970	231	3 413	385	
Non-seamen in ASI	..	296 596	16 044	110 773	2 250	231	1 873	32	
Seamen	..	7 147	3 696	0	0	0	1 540	0	
Others	..	0	11 020	0	77 720	0	0	353	

Source: National Economic Institute.

*BASIC STATISTICS:*  
*INTERNATIONAL COMPARISONS*

BASIC STATISTICS: INTERNATIONAL COMPARISONS

	Units	Reference period <sup>1</sup>	Australia	Austria	Belgium	Canada	Denmark	Finland	France	Germany	Greece	Iceland	Ireland	Italy	Japan	Luxembourg	Netherlands	New Zealand	Norway	Portugal	Spain	Sweden	Switzerland	Turkey	United Kingdom	United States
<b>Population</b>																										
Total	Thousands	1990	17 085	7 718	9 967	26 620	5 141	4 986	56 420	63 232	10 140	255	3 503	57 647	123 540	382	14 951	3 379	4 241	9 859	38 959	8 559	6 796	56 473	57 411	251 523
Inhabitants per sq. km	Number	1990	2	92	327	3	119	15	103	254	77	2	50	191	327	147	366	13	13	107	77	19	165	72	235	27
Net average annual increase over previous 10 years	%	1990	1.5	0.2	0.1	1	0	0.4	0.5	0.3	0.5	1.1	0.3	0.2	0.6	0.5	0.6	0.7	0.4	0	0.4	0.3	0.6	2.4	0.2	1
<b>Employment</b>																										
Total civilian employment (TCE) <sup>2</sup>	Thousands	1990	7 850	3 412	3 726	12 572	2 638	2 457	21 732	27 946	3 677	126	1 115	21 123	62 500	189	6 268	1 472	1992	4 474	12 578	4 508	3 563	19 209	26 577	117 914
Of which: Agriculture	% of TCE		5.6	7.9	2.7	4.2	5.6	8.4	6.1	3.4	24.5	10.3	15	9	7.2	3.2	4.6	10.6	17.8	11.8	11.8	3.3	5.6	47.8	2.1	2.8
Industry	% of TCE		25.4	36.8	28.3	24.6	27.5	31	29.9	39.8	27.4	30.2	28.6	32.4	34.1	30.7	26.3	24.6	24.8	34.8	33.4	29.1	35	19.9	29	26.2
Services	% of TCE		69	55.3	69	71.2	66.9	60.6	64	56.8	48.2	59.5	56.4	58.6	58.7	66.1	69.1	64.8	68.8	47.4	54.8	67.5	59.5	32.3	68.9	70.9
<b>Gross domestic product (GDP)</b>																										
At current prices and current exchange rates	Bill US \$	1990	294.1	157.4	192.4	570.1	129.3	137.3	1 190.8	1 488.2	66	5.9	42.5	1 090.8	2 940.4	8.7	279.1	44	105.7	59.7	491.2	228.1	224.8	108.4	975.1	5 392.2
Per capita	US \$		17 215	20 391	19 303	21 418	25 150	27 527	21 105	23 536	6 505	22 907	12 131	18 921	23 801	22 895	18 676	13 020	24 924	6 085	12 609	26 652	33 085	1 896	16 985	21 449
At current prices using current PPP's <sup>3</sup>	Bill US \$	1990	271.7	127.4	163	510.5	85.2	82.2	980.4	1 151.6	74.3	4.1	37.2	919.7	2 179.9	7.3	234.8	45.8	68	82	457.3	144.6	142.1	189.7	911.8	5 392.2
Per capita	US \$		15 900	16 513	16 351	19 179	16 570	16 487	17 376	18 212	7 323	16 158	10 627	15 953	17 645	19 282	15 708	13 564	16 033	8 364	11 738	16 896	20 911	3 318	15 882	21 449
Average annual volume growth over previous 5 years	%	1990	3.1	3.1	3.2	3	1.5	3.4	2.9	3.1	1.7	2.7	4.4	3	4.6	4.3	2.7	0.4	1.6	4.6	4.5	2.1	2.8	5.9	3.2	3
<b>Gross fixed capital formation (GFCF)</b>																										
Of which: Machinery and equipment	% of GDP	1990	22.9	24.3	20.3	21.4	17.7	26.3	21.2	21.2	19.7	19.4	19.1	20.2	32.2	25.3	21.5	19.8	18.8	26.4	24.6	20.7	27.1	22.7	19.2	16.1
Residential construction	% of GDP	1990	9.7	10.1	10.4	7.2	8.1	10	9.7	9.8	8.7	6.2	9.3	10	13.7	11	10.7	9.9	6.8	13.1	8.1	8.9	9.1	11.7 (87)	8.5	7.8 (89)
Average annual volume growth over previous 5 years	%	1990	4.8	4.6	4.3	6.8	3.7	7.1	5.2	5.6	5	4.4	4.2	5.2	6.1	5	5.1	4.8	2.8	4.5	5	5.5	17.9 <sup>9</sup>	5.8 (87)	3.4	4.4 (89)
	%	1990	2.4	4.6	9.5	5.8	0.8	4.8	5.8	5.2	2.3	2.1	4.4	4.3	9	11.7	5.1	2.7	-2.8	10.4	11.7	4.9	6	4.7	5.8	2.7
<b>Gross saving ratio<sup>4</sup></b>																										
	% of GDP	1990	19.7	26	21.8	17.4	18	23.1	21	25.2	13.8	16	23.4	19.3	34.6	60.9	25.4	16.1	24.1	26.6	22.1	17.3	33	22.2	15.6	14.4
<b>General government</b>																										
Current expenditure on goods and services	% of GDP	1990	17.3	18	14.3	19.8	25.2	21.1	18	18.4	21.2	18.8	15.7	17.3	9.1	16.3	14.8	16.7	21	16.7	15.2	27.1	13.3	19.4	19.9	18.1
Current disbursements <sup>5</sup>	% of GDP	1990	34.9	44.9	53.1	44	56.5	37.5	46.2	42.6	50.9	31.5	49.9 (87)	48.1	26.2	45 (86)	51.7	..	51.6	39.3	35.5 (88)	59.1	30.7	..	38.1	34.6 (89)
Current receipts	% of GDP	1990	35.1	46.7	49.5	41.6	56.1	41.2	46.5	43.4	34.7	34.9	43.7 (87)	42.1	34.6	52.9 (86)	49.5	..	56.2	37.6	36.3 (88)	63.9	34.2	..	40	31.8 (89)
<b>Net official development assistance</b>																										
	Mill US \$	1990	0.34	0.25	0.45	0.44	0.93	0.64	0.79	0.42	0.07	0.03	0.16	0.32	0.31	0.29	0.94	0.22	1.17	0.23	0.16	0.9	0.31	..	0.27	0.21
<b>Indicators of living standards</b>																										
Private consumption per capita using current PPP's <sup>3</sup>	US \$	1990	9 441	9 154	10 119	11 323	8 639	8 602	10 482	9 841	5 298	9 824	5 886	9 866	10 122	11 017	9 241	8 475	8 174	5 278	7 326	8 748	11 933	1992	10 051	14 465
Passenger cars per 1 000 inhabitants	Number	1989	570	416	416	613	370	439	494	526	234	488 (85)	278	458	455	546	399	549	459	181	347	462	479	37	449	748
Telephones per 1 000 inhabitants	Number	1989	550 (85)	540	500 (88)	780 (88)	880 (88)	620 (85)	610 (85)	680 (88)	360 (88)	525 (83)	265 (85)	510 (88)	555 (85)	413 (85)	660 (88)	720 (88)	622 (84)	220 (88)	396 (87)	889 (83)	880 (88)	120 (88)	524 (84)	650 (84)
Television sets per 1 000 inhabitants	Number	1988	217	484 (89)	255	586	526	486	399	379	175	306	260	419	589	250	478	296	350	160	380	395	408	172	435	812
Doctors per 1 000 inhabitants	Number	1990	2.3	2.1	3.4	2.2	2.7 (87)	1.9	2.6 (89)	3 (89)	3.3 (89)	2.8 (89)	1.5 (88)	1.3 (89)	1.6 (88)	1.9 (88)	2.5	1.9 (89)	3.1	3.7 (89)	3.1 (89)	2.9 (89)	3.1 (89)	0.9	1.4 (89)	2.3
Infant mortality per 1 000 live births	Number	1990	8.2	7.8	7.9	7.2 (89)	7.5 (89)	6.1 (89)	7.2	7.5 (89)	9.1 (89)	5.9	7.6 (89)	8.5	4.6 (89)	9.9	6.9	8.3	7.9 (89)	11	7.8 (89)	5.9	7.3	6.5 (89)	7.9	9.2
<b>Wages and prices (average annual increase over previous 5 years)</b>																										
Wages (earnings or rates according to availability)	%	1990	5.6	5	3	4.3	6	8.2	3.7	4.2	16	..	5.6	6.1	3.7	..	1.7	8.1	8.7	..	8.2	8.2	..	..	8.5	2.6
Consumer prices	%	1990	7.9	2.2	2.1	4.5	3.9	5	3.1	1.4	17.4	20.2	3.3	5.7	1.3	1.7	0.7	9.4	6.2	11.3	6.5	6.2	2.5	53.7	5.9	4
<b>Foreign trade</b>																										
Exports of goods, fob*	Mill US \$	1990	39 813	40 985	118 291 <sup>7</sup>	127 334	34 988	26 583	216 157	409 620	8 014	1 589	23 796	170 330	287 358	.. <sup>8</sup>	131 778	9 533	33 905	16 338	55 289	57 422	63 847	12 836	185 710	393 812
As % of GDP	%		13.5	26	61.5	22.3	27.1	19.4	18.2	27.5	12.2	27.1	56	15.6	9.8	..	47.2	21.7	32.1	27.4	11.3	25.2	28.4	11.8	19	7.3
Average annual increase over previous 5 years	%		11.9	19.1	17.1	7.8	15.6	14.3	16.5	17.6	11.8	14.2	18.1	16.6	10.2	..	14	10.6	11.2	23.5	18	13.7	18.4	9.9	12.9	13.1
Imports of goods, cif*	Mill US \$	1990	38 907	48 914	120 330 <sup>7</sup>	116 561	31 647	26 950	225 260	344 454	19 831	1 648	20 687	181 863	235 407	..	126 215	9 458	27 218	24 874	87 373	54 659	69 811	22 224	225 327	494 842
As % of GDP	%		13.2	31.1	62.5	20.4	24.5	19.6	18.9	23.1	30.1	28.1	48.7	16.7	8	..	45.2	21.5	25.7	41.7	17.8	24	31	20.5	23.1	9.2
Average annual increase over previous 5 years	%		11	18.6	16.5	8.8	11.8	15.3	16.8	16.9	14.1	12.7	15.7	14.8	..	14.1	9.6	11.9	26.5	24	14	17.8	14.2	15.5	7.4	
<b>Total official reserves<sup>6</sup></b>																										
As ratio of average monthly imports of goods	ratio	1990	11 432	6 591	8 541 <sup>7</sup>	12 544	7 445	6 779	25 851	47 729	2 398	307	3 672	44 232	55 179	..	12 289	2 902	10 777	10 182	36 008	12 644	20 541	4 252	25 201	50 791
	ratio		3.5	1.6	0.9	1.3	2.8	3	1.4	1.7	1.5	2.2	2.1	2.9	2.8	..	1.2	3.7	4.8	4.9	4.9	2.8	3.5	2.3	1.3	1.2

\* At current prices and exchange rates.  
 1. Unless otherwise stated.  
 2. According to the definitions used in OECD Labour Force Statistics.  
 3. PPP's = 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 SDR's per ounce. End of year.  
 7. Including Luxembourg.  
 8. Included in Belgium.

9. Including non-residential construction.  
 10. Federal Government Statistics.  
 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.

## EMPLOYMENT OPPORTUNITIES

### *Economics Department, OECD*

The Economics Department of the OECD offers challenging and rewarding opportunities to economists interested in applied policy analysis in an international environment. The Department's concerns extend across the entire field of economic policy analysis, both macro-economic and micro-economic. Its main task is to provide, for discussion by committees of senior officials from Member countries, documents and papers dealing with current policy concerns. Within this programme of work, three major responsibilities are:

- to prepare regular surveys of the economies of individual Member countries;
- to issue full twice-yearly reviews of the economic situation and prospects of the OECD countries in the context of world economic trends;
- to analyse specific policy issues in a medium-term context for the OECD as a whole, and to a lesser extent for the non-OECD countries.

The documents prepared for these purposes, together with much of the Department's other economic work, appear in published form in the *OECD Economic Outlook*, *OECD Economic Surveys*, *OECD Economic Studies* and the Department's *Working Papers* series.

The Department maintains a world econometric model, INTERLINK, which plays an important role in the preparation of the policy analyses and twice-yearly projections. The availability of extensive cross-country data bases and good computer resources facilitates comparative empirical analysis, much of which is incorporated into the model.

The Department is made up of about 75 professional economists from a variety of backgrounds and Member countries. Most projects are carried out by small teams and last from four to eighteen months. Within the Department, ideas and points of view are widely discussed; there is a lively professional interchange, and all professional staff have the opportunity to contribute actively to the programme of work.

#### **Skills the Economics Department is looking for:**

- a) Solid competence in using the tools of both micro-economic and macro-economic theory to answer policy questions. Experience indicates that this normally requires the equivalent of a PH.D. in economics or substantial relevant professional experience to compensate for a lower degree.
- b) Solid knowledge of economic statistics and quantitative methods; this includes how to identify data, estimate structural relationships, apply basic techniques of time series analysis, and test hypotheses. It is essential to be able to interpret results sensibly in an economic policy context.

- c) A keen interest in and knowledge of policy issues, economic developments and their political/social contexts.
- d) Interest and experience in analysing questions posed by policy-makers and presenting the results to them effectively and judiciously. Thus, work experience in government agencies or policy research institutions is an advantage.
- e) The ability to write clearly, effectively, and to the point. The OECD is a bilingual organisation with French and English as the official languages. Candidates must have excellent knowledge of one of these languages, and some knowledge of the other. Knowledge of other languages might also be an advantage for certain posts.
- f) For some posts, expertise in a particular area may be important, but a successful candidate is expected to be able to work on a broader range of topics relevant to the work of the Department. Thus, except in rare cases, the Department does not recruit narrow specialists.
- g) The Department works on a tight time schedule and strict deadlines. Moreover, much of the work in the Department is carried out in small groups of economists. Thus, the ability to work with other economists from a variety of cultural and professional backgrounds, to supervise junior staff, and to produce work on time is important.

### **General Information**

The salary for recruits depends on educational and professional background. Positions carry a basic salary from FF 262 512 or FF 323 916 for Administrators (economists) and from FF 375 708 for Principal Administrators (senior economists). This may be supplemented by expatriation and/or family allowances, depending on nationality, residence and family situation. Initial appointments are for a fixed term of two to three years.

Vacancies are open to candidates from OECD Member countries. The Organisation seeks to maintain an appropriate balance between female and male staff and among nationals from Member countries.

For further information on employment opportunities in the Economics Department, contact:

**Administrative Unit  
Economics Department  
OECD  
2, rue André-Pascal  
75775 PARIS CEDEX 16  
FRANCE**

Applications citing "ECSUR", together with a detailed *curriculum vitae* in English or French, should be sent to the Head of Personnel at the above address.

**MAIN SALES OUTLETS OF OECD PUBLICATIONS  
PRINCIPAUX POINTS DE VENTE DES PUBLICATIONS DE L'OCDE**

**ARGENTINA - ARGENTINE**

Carlos Hirsch S.R.L.  
Galería Güemes, Florida 165, 4° Piso  
1333 Buenos Aires Tel. (1) 331.1787 y 331.2391  
Telefax: (1) 331.1787

**AUSTRALIA - AUSTRALIE**

D.A. Information Services  
648 Whitehorse Road, P.O.B 163  
Mitcham, Victoria 3132 Tel. (03) 873.4411  
Telefax: (03) 873.5679

**AUSTRIA - AUTRICHE**

Gerold & Co.  
Graben 31  
Wien 1 Tel. (0222) 533.50.14

**BELGIUM - BELGIQUE**

Jean De Lannoy  
Avenue du Roi 202  
B-1060 Bruxelles Tel. (02) 538.51.69/538.08.41  
Telefax: (02) 538.08.41

**CANADA**

Renouf Publishing Company Ltd.  
1294 Algoma Road  
Ottawa, ON K1B 3W8 Tel. (613) 741.4333  
Telefax: (613) 741.5439

**Stores:**

61 Sparks Street  
Ottawa, ON K1P 5R1 Tel. (613) 238.8985  
211 Yonge Street  
Toronto, ON M5B 1M4 Tel. (416) 363.3171  
Telefax: (416) 363.59.63

Les Éditions La Liberté Inc.  
3020 Chemin Sainte-Foy  
Sainte-Foy, PQ G1X 3V6 Tel. (418) 658.3763  
Telefax: (418) 658.3763

Federal Publications  
165 University Avenue  
Toronto, ON M5H 3B8 Tel. (416) 581.1552  
Telefax: (416) 581.1743

Les Publications Fédérales  
1185 Avenue de l'Université  
Montréal, PQ H3B 3A7 Tel. (514) 954.1633  
Telefax: (514) 954.1633

**CHINA - CHINE**

China National Publications Import  
Export Corporation (CNPIEC)  
16 Gongti E. Road, Chaoyang District  
P.O. Box 88 or 50  
Beijing 100704 PR Tel. (01) 506.6688  
Telefax: (01) 506.3101

**DENMARK - DANEMARK**

Munksgaard Export and Subscription Service  
35, Nørre Søgade, P.O. Box 2148  
DK-1016 København K Tel. (33) 12.85.70  
Telefax: (33) 12.93.87

**FINLAND - FINLANDE**

Akateeminen Kirjakauppa  
Keskuskatu 1, P.O. Box 128  
00100 Helsinki Tel. (358 0) 12141  
Telefax: (358 0) 121.4441

**FRANCE**

OECD/OCDE  
Mail Orders/Commandes par correspondance:  
2, rue André-Pascal  
75775 Paris Cedex 16 Tel. (33-1) 45.24.82.00  
Telefax: (33-1) 45.24.81.76 or (33-1) 45.24.85.00  
Telex: 640048 OCDE

OECD Bookshop/Librairie de l'OCDE:  
33, rue Octave-Feuillet  
75016 Paris Tel. (33-1) 45.24.81.67  
(33-1) 45.24.81.81

Documentation Française  
29, quai Voltaire  
75007 Paris Tel. 40.15.70.00

Gibert Jeune (Droit-Économie)  
6, place Saint-Michel  
75006 Paris Tel. 43.25.91.19

Librairie du Commerce International  
10, avenue d'Iéna  
75016 Paris Tel. 40.73.34.60

Librairie Dunod  
Université Paris-Dauphine  
Place du Maréchal de Lattre de Tassigny  
75016 Paris Tel. 47.27.18.56

Librairie Lavoisier  
11, rue Lavoisier  
75008 Paris Tel. 42.65.39.95

Librairie L.G.D.J. - Montchrestien  
20, rue Soufflot  
75005 Paris Tel. 46.33.89.85

Librairie des Sciences Politiques  
30, rue Saint-Guillaume  
75007 Paris Tel. 45.48.36.02

P.U.F.  
49, boulevard Saint-Michel  
75005 Paris Tel. 43.25.83.40

Librairie de l'Université  
12a, rue Nazareth  
13100 Aix-en-Provence Tel. (16) 42.26.18.08

Documentation Française  
165, rue Garibaldi  
69003 Lyon Tel. (16) 78.63.32.23

Librairie Decitre  
29, place Bellecour  
69002 Lyon Tel. (16) 72.40.54.54

**GERMANY - ALLEMAGNE**

OECD Publications and Information Centre  
August-Bebel-Allee 6  
D-W 5300 Bonn 2 Tel. (0228) 959.120  
Telefax: (0228) 959.12.17

**GREECE - GRÈCE**

Librairie Kauffmann  
Mavrokordatou 9  
106 78 Athens Tel. 322.21.60  
Telefax: 363.39.67

**HONG-KONG**

Swindon Book Co. Ltd.  
13-15 Lock Road  
Kowloon, Hong Kong Tel. 366.80.31  
Telefax: 739.49.75

**HUNGARY - HONGRIE**

Euro Info Service  
POB 1271  
1464 Budapest Tel. (1) 111.62.16  
Telefax: (1) 111.60.61

**ICELAND - ISLANDE**

Mál Mog Menning  
Laugavegi 18, Pósthólf 392  
121 Reykjavik Tel. 162.35.23

**INDIA - INDE**

Oxford Book and Stationery Co.  
Scindia House  
New Delhi 110001 Tel. (11) 331.5896/5308  
Telefax: (11) 332.5993

**INDONESIA - INDONÉSIE**

Pdji-Lipi  
P.O. Box 269/IKSMG/88  
Jakarta 12790 Tel. 583467  
Telefax: 62 875

**IRELAND - IRLANDE**

TDC Publishers - Library Suppliers  
12 North Frederick Street  
Dublin 1 Tel. 74.48.35/74.96.77  
Telefax: 74.84.16

**ISRAEL**

Electronic Publications only  
Publications électroniques seulement  
Sophist Systems Ltd.  
71 Allenby Street  
Tel-Aviv 65134 Tel. 3-29.00.21  
Telefax: 3-29.92.39

**ITALY - ITALIE**

Libreria Commissionaria Sansoni  
Via Duca di Calabria 1/1  
50125 Firenze Tel. (055) 64.54.15  
Telefax: (055) 64.12.57

Via Bartolini 29  
20155 Milano Tel. (02) 36.50.83

Editrice e Libreria Herder  
Piazza Montecitorio 120  
00186 Roma Tel. 679.46.28  
Telefax: 678.47.51

Libreria Hoepli  
Via Hoepli 5  
20121 Milano Tel. (02) 86.54.46  
Telefax: (02) 805.28.86

Libreria Scientifica  
Dot. Lucio de Biasio 'Aezio'  
Via Coronelli, 6  
20146 Milano Tel. (02) 48.95.45.52  
Telefax: (02) 48.95.45.48

**JAPAN - JAPON**

OECD Publications and Information Centre  
Landic Akasaka Building  
2-3-4 Akasaka, Minato-ku  
Tokyo 107 Tel. (81.3) 3586.2016  
Telefax: (81.3) 3584.7929

**KOREA - CORÉE**

Kyobo Book Centre Co. Ltd.  
P.O. Box 1658, Kwang Hwa Moon  
Seoul Tel. 730.78.91  
Telefax: 735.00.30

**MALAYSIA - MALAISIE**

Co-operative Bookshop Ltd.  
University of Malaya  
P.O. Box 1127, Jalan Pantai Baru  
59700 Kuala Lumpur  
Malaysia Tel. 756.5000/756.5425  
Telefax: 757.3661

**MEXICO - MEXIQUE**

Revistas y Periódicos Internacionales S.A. de C.V.  
Floresca 57 - 1004  
Mexico, D.F. 06600 Tel. 207.81.00  
Telefax: 208.39.79

**NETHERLANDS - PAYS-BAS**

SDU Uitgeverij  
Christoffel Plantijnstraat 2  
Postbus 20014  
2500 EA's-Gravenhage Tel. (070 3) 78.99.11  
Voor bestellingen: Tel. (070 3) 78.98.80  
Telefax: (070 3) 47.63.51

**NEW ZEALAND  
NOUVELLE-ZÉLANDE**

Legislation Services  
P.O. Box 12418  
Thorndon, Wellington Tel. (04) 496.5652  
Telefax: (04) 496.5698

**NORWAY - NORVÈGE**

Narvesen Info Center - NIC  
Bertrand Narvesens vei 2  
P.O. Box 6125 Etterstad  
0602 Oslo 6  
Tel. (02) 57.33.00  
Telefax: (02) 68.19.01

**PAKISTAN**

Mirza Book Agency  
65 Shahrah Quaid-E-Azam  
Lahore 54000  
Tel. (42) 353.601  
Telefax: (42) 231.730

**PHILIPPINE - PHILIPPINES**

International Book Center  
5th Floor, Filipinas Life Bldg.  
Ayala Avenue  
Metro Manila  
Tel. 81.96.76  
Telex 23312 RHP PH

**PORTUGAL**

Livraria Portugal  
Rua do Carmo 70-74  
Apart. 2681  
1117 Lisboa Codex  
Tel.: (01) 347.49.82/3/4/5  
Telefax: (01) 347.02.64

**SINGAPORE - SINGAPOUR**

Information Publications Pte. Ltd.  
41, Kallang Pudding, No. 04-03  
Singapore 1334  
Tel. 741.5166  
Telefax: 742.9356

**SPAIN - ESPAGNE**

Mundi-Prensa Libros S.A.  
Castelló 37, Apartado 1223  
Madrid 28001  
Tel. (91) 431.33.99  
Telefax: (91) 575.39.98

**Libreria Internacional AEDOS**

Consejo de Ciento 391  
08009 - Barcelona  
Tel. (93) 488.34.92  
Telefax: (93) 487.76.59

**Libreria de la Generalitat**

Palau Moja  
Rambla dels Estudis, 118  
08002 - Barcelona  
(Subscriptions) Tel. (93) 318.80.12  
(Publicacions) Tel. (93) 302.67.23  
Telefax: (93) 412.18.54

**SRI LANKA**

Centre for Policy Research  
c/o Colombo Agencies Ltd.  
No. 300-304, Galle Road  
Colombo 3  
Tel. (1) 574240, 573551-2  
Telefax: (1) 575394, 510711

**SWEDEN - SUÈDE**

Fritzes Fackboks/foretagat  
Box 16356  
Reggeringsgatan 12  
103 27 Stockholm  
Tel. (08) 690.90.90  
Telefax: (08) 20.50.21

**Subscription Agency-Agence d'abonnements**

Wennergren-Williams AB  
P.O. Box 1305  
171 25 Solna  
Tel. (08) 705.97.50  
Téléfax : (08) 27.00.71

**SWITZERLAND - SUISSE**

Madtrec S.A. (Books and Periodicals - Livres  
et périodiques)  
Chemin des Palettes 4  
Case postale 2066  
1020 Renens 1  
Tel. (021) 635.08.65  
Telefax: (021) 635.07.80

**Librairie Payot S.A.**

4, place Pépinet  
1003 Lausanne  
Tel. (021) 341.33.48  
Telefax: (021) 341.33.45

**Librairie Unilivres**

6, rue de Candolle  
1205 Genève  
Tel. (022) 320.26.23  
Telefax: (022) 329.73.18

**Subscription Agency - Agence d'abonnement**

Dynapresse Marketing S.A.  
38 avenue Vibert  
1227 Carouge  
Tel.: (022) 308.07.89  
Telefax : (022) 308.07.99

**See also - Voir aussi :**

OECD Publications and Information Centre  
August-Bebel-Allee 6  
D-W 5300 Bonn 2 (Germany) Tel. (0228) 959.120  
Telefax: (0228) 959.12.17

**TAIWAN - FORMOSE**

Good Faith Worldwide Int'l. Co. Ltd.  
9th Floor, No. 118, Sec. 2  
Chung Hsiao E. Road  
Taipei  
Tel. (02) 391.7396/391.7397  
Telefax: (02) 394.9176

**THAILAND - THAÏLANDE**

Suksit Siam Co. Ltd.  
113, 115 Fuang Nakhon Rd.  
Opp. Wat Rajbopith  
Bangkok 10200  
Tel. (662) 251.1630  
Telefax: (662) 236.7783

**TURKEY - TURQUIE**

Kültür Yayinlari Is-Türk Ltd. Sü.  
Atatürk Bulvari No. 191/Kat 13  
Kavaklıdere/Ankara  
Tel. 428.11.40 Ext. 2458  
Dolmabahçe Cad. No. 29  
Besiktas/Istanbul  
Tel. 260.71.88  
Telex: 43482B

**UNITED KINGDOM - ROYAUME-UNI**

HMSO  
Gen. enquiries  
P.O. Box 276, London SW8 5DT  
Postal orders only:  
Personal Callers HMSO Bookshop  
49 High Holborn, London WC1V 6HB  
Tel. (071) 873 0011  
Telefax: (071) 873 8200

Branches at: Belfast, Birmingham, Bristol, Edinburgh, Manchester

**UNITED STATES - ÉTATS-UNIS**

OECD Publications and Information Centre  
2001 L Street N.W., Suite 700  
Washington, D.C. 20036-4910  
Tel. (202) 785.6323  
Telefax: (202) 785.0350

**VENEZUELA**

Libreria del Este  
Avda F. Miranda 52, Aptdo. 60337  
Edificio Galipán  
Caracas 106  
Tel. 951.1705/951.2307/951.1297  
Telegram: Libreria Caracas

Subscription to OECD periodicals may also be placed through main subscription agencies.

Les abonnements aux publications périodiques de l'OCDE peuvent être souscrits auprès des principales agences d'abonnement.

Orders and inquiries from countries where Distributors have not yet been appointed should be sent to: OECD Publications Service, 2 rue André-Pascal, 75775 Paris Cedex 16, France.

Les commandes provenant de pays où l'OCDE n'a pas encore désigné de distributeur devraient être adressées à : OCDE, Service des Publications, 2, rue André-Pascal, 75775 Paris Cedex 16, France.

04-1993

**PRINTED IN FRANCE**

**OECD PUBLICATIONS**  
2 rue André-Pascal  
75775 PARIS CEDEX 16  
No. 46599

(10 93 17 1) ISBN 92-64-13912-5  
ISSN 0376-6438

# OECD ECONOMIC SURVEYS

Latest Surveys Available:

AUSTRALIA, *APRIL 1992*

AUSTRIA, *APRIL 1993*

BELGIUM-LUXEMBOURG, *JULY 1992*

CANADA, *SEPTEMBER 1992*

DENMARK, *FEBRUARY 1993*

FINLAND, *AUGUST 1992*

FRANCE, *JUNE 1992*

GERMANY, *JULY 1992*

GREECE, *AUGUST 1992*

ICELAND, *MAY 1993*

IRELAND, *MAY 1991*

ITALY, *DECEMBER 1992*

JAPAN, *NOVEMBER 1992*

NETHERLANDS, *APRIL 1993*

NEW ZEALAND, *JANUARY 1993*

NORWAY, *MARCH 1993*

PORTUGAL, *JANUARY 1992*

SPAIN, *APRIL 1993*

SWEDEN, *JULY 1992*

SWITZERLAND, *OCTOBER 1992*

TURKEY, *APRIL 1993*

UNITED KINGDOM, *JANUARY 1993*

UNITED STATES, *NOVEMBER 1992*

Surveys of "Partners in Transition" Countries

HUNGARY, *JULY 1991*

CZECH AND SLOVAK FEDERAL REPUBLIC, *DECEMBER 1991*

POLAND, *JULY 1992*

Non-member Country

MEXICO, *SEPTEMBER 1992*

(10 93 17 1) ISBN 92-64-13912-5  
ISSN 0376-6438

Per issue: FF 80  
1993 Subscription: FF 950