1988/1989

OECD ECONOMIC SURVEYS

ICELAND

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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, the Federal Republic of 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 Socialist Federal Republic of Yugoslavia takes part in some of the work of the OECD (agreement of 28th October, 1961).

Publié également en français.

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This Survey is based on the Secretariat's study prepared for the annual review of Iceland by the Economic and Development Review Committee on 8th September 1988.

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After revisions in the light of discussions during the review, final approval of the Survey for publication was given by the Committee on 14th October 1988.

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The previous survey of Iceland was issued in May 1987.

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	*of which:*	
of which:		Glaciers	12
Cultivated area	1.1	Other area devoid of vegetation	70
Rough grazings	20		

THE PEOPLE

Population, December 1st, 1987	247 357	Occupational distribution 1985 (per cent):	
Net increase 1981-1985,		Agriculture	6.0
annual average (per cent)	1.1	Fishing and fish processing	13.3
		Other manufacturing	16.5
		Construction, total	9.5
		Commerce	16.8
		Communications	6.8
		Services and other	31.0
			100.0

GOVERNMENT AND PARLIAMENT

Parliament, number of seats:	1983	1987
Independence Party (Lib. Cons.)	23	18
Progressive Party (Agrarians)	14	13
Peoples' Alliance (Socialists, Communists)	10	8
Social Democratic Party	6	10
Citizen's Party	–	7
Women's Alliance	3	6
Other	4	1
	60	63

Last general election: April 1987

PRODUCTION AND CAPITAL FORMATION

Gross National Product in 1986:		Gross Fixed Capital Formation in 1986:	
Millions of I. Kr.	152 678	Millions of I. Kr.	29 030
Per head, US $	15 843	Per cent of GNP	19

FOREIGN TRADE

Exports of goods and services in 1986,		Imports of goods and services in 1986,	
per cent of GNP	41.3	per cent of GNP	36.9
Main exports 1986, (per cent):		Imports 1986, by use (per cent):	
Fish products	77.0	Consumer goods	41.4
Aluminium	9.2	Investment goods	31.4
Other manufacturing products	10.6	Intermediate goods (excl. fuels)	18.6
Agricultural products	1.3	Fuels and lubricants	8.5
Miscellaneous	2.0		

THE CURRENCY

Monetary unit: Krona		Currency units per US $, averages of daily figures:	
		Year 1987	38.7
		July 1988	46.05

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

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Introduction

1987 was another year of strong economic expansion in Iceland, with real GDP growing by 7 per cent and real per capita disposable income by more than 18 per cent. But the overheating of the economy, associated with an inappropriate stance of policies in the face of very favourable external conditions, led to a further tightening of the labour market and excessive wage increases. Against this background, inflation reaccelerated in the course of the year and the current account shifted from surplus to a substantial deficit (3½ per cent of GDP). Moreover, in a context of high and rising domestic costs, the firm exchange-rate policy pursued by the authorities to fight inflation led to a marked appreciation of the real exchange rate and a serious deterioration in the profitability of the export sectors.

Economic conditions are currently changing. After reaching an all-time peak last year, the fish catch decreased in the first half of 1988, while fish prices on the U.S. and other world markets have tended to decline. The resulting additional squeeze on the profitability of the export sector has prompted two devaluations of the krona, in late February and in mid-May, by 6 per cent and 10 per cent respectively. Fiscal and monetary policies have been tightened somewhat and wage controls have been introduced to try to prevent the emergence of a wage-price spiral. Following four years of strong growth, real GDP may therefore be unchanged in 1988. The outlook for inflation remains uncertain. Much will depend on the effectiveness of wage controls and the degree and the speed with which current pressure on the labour market will subside. Barring any unforeseen developments in fish catches and marine product prices, the current account deficit may widen further in spite of the weaker trend of domestic demand.

Key macroeconomic developments in 1987 and the early part of 1988 are analysed in Part I. Part II reviews the policy environment, dealing with exchange-rate, monetary and budgetary policies. The short-term outlook is presented in Part III, together with an assessment of near-term risks and a discussion of medium-term stabilisation problems. Part IV deals with issues related to the public

sector, concentrating on the major reform of the tax system currently under way and the key role that fiscal policy will have to play in unwinding domestic and external imbalances and in enhancing the economy's efficiency over the medium-term. Finally, policy conclusions are presented in Part V.

I. Recent trends: from boom to recession

1987: an overheated economy

The supply side: strong growth of output

The fishing sector was a major source of strength in 1987 (Table 1 and Diagram 1). While the total catch in tonnage terms fell slightly (Diagram 2), this mostly reflected a smaller take of capelin, a low-value fish used primarily in feed and

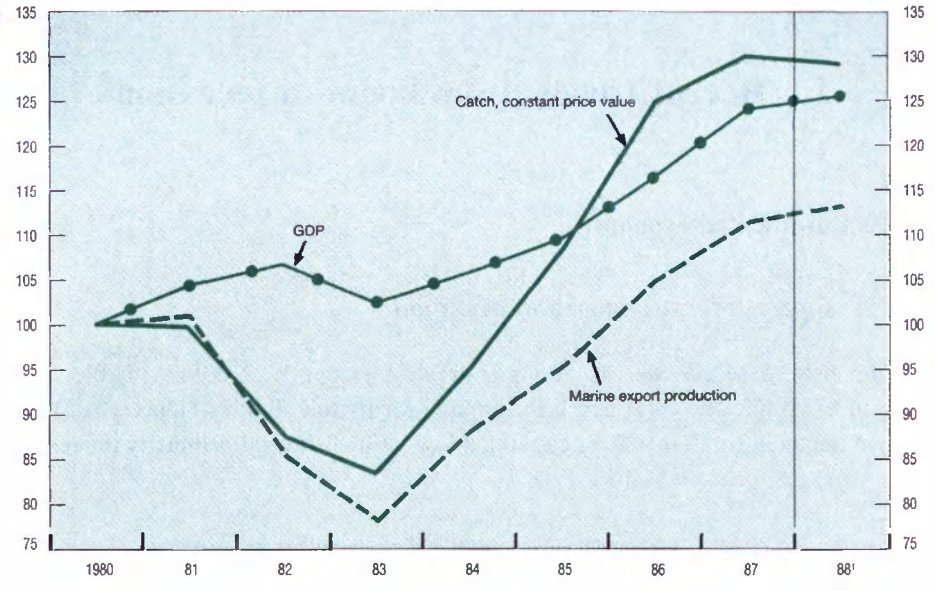
Table 1. **External environment and economic performance**

	1983	1984	1985	1986	1987	Projected 1988
External conditions						
Marine export prices, US$[1]	92	83	85	103	126	129
Crude oil prices, US$	30.0	29	27.5	15.0	17.9	16.5
Terms of trade[2]	2.5	−1	0.1	4.9	4.2	−1
Average rate of foreign currency[2,3]	83	17	28	15.5	3.5	14.5
Real exchange rate[2,3]	−6.1	5.2	−1.3	1.3	9.5	9
Average interest rate on foreign debt (%)	–	10.4	9.3	8.7	7.8	–
Domestic output growth						
Cod catch[4]	294	281	323	366	390	365
Export production[2]	–	12.6	5.2	7.5	7.5	1.8
Gross domestic product[2]	−4.1	3.5	3.4	6.3	7.0	0.2
Gross national income[2,5]	−3.3	3.0	3.0	8.2	8.0	−0.5
Inflation and the current account						
Consumer price inflation[2]	84.3	29.2	32.4	21.3	18.8	28.0
Real disposable income growth[2]	−11.8	−0.8	10.5	10	18.3	−1.0
Current account (per cent of GDP)	−1.9	−4.7	−4.0	0.4	−3.5	−4.3
Foreign debt (per cent of GDP)	47.1	49.3	52.5	45.2	41.2	42

1. Index, 1980=100.
2. Annual average percentage change.
3. Exchange rates are trade-weighted indices (1980=100) of 17 currencies. Real rates calculated from relative consumer prices.
4. Thousand tons.
5. Gross national income equals GDP adjusted for terms of trade effects.

Sources: National Economic Institute and OECD Secretariat.

Diagram 1. **OUTPUT OF FISHERIES AND THE OVERALL ECONOMY**
(Indices, 1980 = 100)

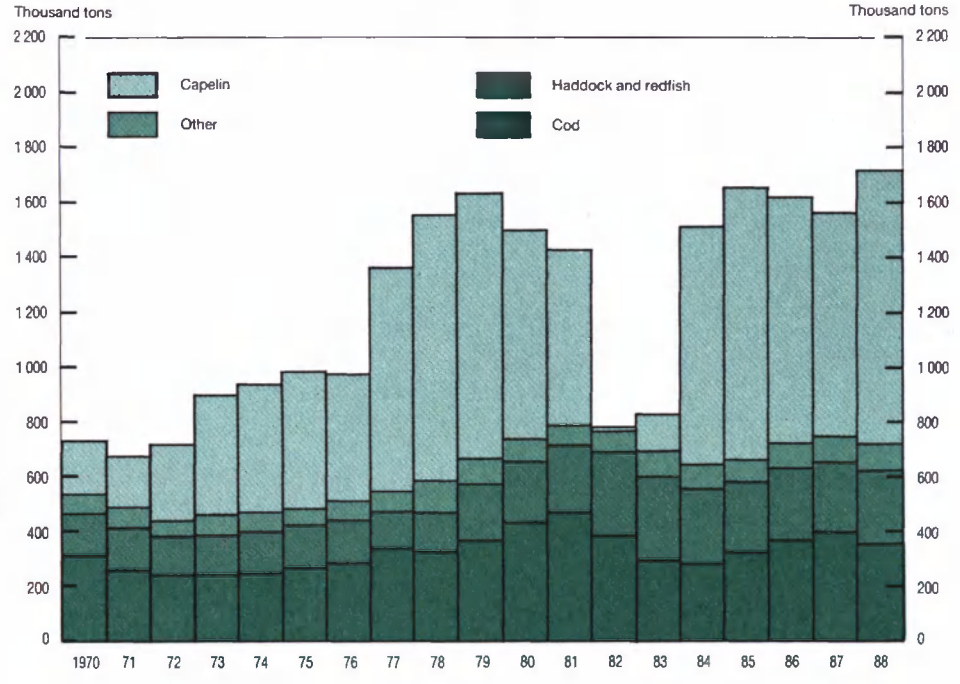


1. 1988 estimated.
Source: National Economic Institute.

oil production. In contrast, the harvest of more valuable species – such as cod, haddock, redfish and shrimp – all rose, implying that the value of the overall catch (at constant prices) increased by more than 4 per cent. The cod catch in particular was large at about 390 thousand tons, which represented an overshoot of the Government's target of 350 thousand tons[1]. Domestic processing of the catch boosted value added in this sector further. With firms increasing the volume and range of their processing activities, total marine export production rose by 6 per cent.

Growth in the remaining quarter of the traded-goods sector was even stronger, apart from ferrosilicon production, which fell by about 8½ per cent due to temporary difficulties. Output of aluminium and other manufactured goods rose strongly, leading to a 7½ per cent increase in total export production (Table 2). The emerging fish-farming sector also contributed to growth: aquaculture exports doubled in value. This rapid growth of export production boosted capacity utilisation rates. Excess

Diagram 2. **THE FISH CATCH**



Source: National Economic Institute.

capacity at most fish-processing plants has fallen steadily in recent years, and both the aluminium and the ferrosilicon plants were operating at roughly full capacity by year's end. Only the fishing fleet continued to have excess capacity, the number of trawlers and other boats being high relative to the overall size of the catch.

Output also expanded rapidly in the non-traded goods sector. Public services are estimated to have risen by 4 per cent, as the government share of total employment continued to increase. Value added in the construction sector grew by almost 9 per cent from the depressed levels of recent years, reflecting a pick-up in residential and hotel construction, and increased public expenditures on roads, buildings and geothermal power projects. However, the fastest rate of growth occurred in retailing and other service sectors. With real incomes up sharply and consumer spending surging, the non-government service sector grew by around 11 per cent, accounting for roughly half of the 7 per cent increase in real GDP.

Table 2. **Demand and output**

Per cent change in volume terms

	1982	1983	1984	1985	1986	1987	Estimate 1988
Private consumption	5.6	−6.4	2.7	5.0	6.5	14.0	0.0
Public consumption	6.2	4.7	0.2	6.2	6.5	4.0	2.0
Gross fixed investment	−0.5	−12.3	8.9	1.0	−2.2	15.6	−1.0
Business	0.6	−11.3	13.9	17.3	6.4	18.4	−5.5
Residential	9.4	−9.1	10.4	−15.3	−15.0	10.0	5.0
Public	−7.6	−15.6	1.5	−8.5	−8.2	14.0	4.0
Final domestic demand	4.2	−5.9	3.6	4.3	4.6	12.5	−0.2
Stockbuilding[1]	1.2	−3.5	2.1	−1.3	−0.7	1.2	0.6
Total domestic demand	5.3	−9.0	5.7	3.0	3.9	14.0	0.8
Exports of goods and services	−9.7	10.3	3.0	11.0	6.2	4.1	0.3
Imports of goods and services	−1.1	−5.7	9.3	9.7	0.3	22.6	2.2
Foreign balance[1]	−3.2	5.5	−2.3	0.3	2.4	−7.0	−0.1
GDP	2.3	−4.1	3.5	3.4	6.3	7.0	0.2
GNP	1.9	−4.7	3.0	3.1	6.3	6.9	−0.5
Gross national income[2]	1.6	−3.3	3.0	3.0	8.2	8.0	−0.5
Memorandum items :							
Export production	–	–	12.6	5.2	7.5	7.5	1.8
Marine products	–	–	11.0	8.0	10.1	6.1	1.5
Aluminium	–	–	9.0	−6.6	1.2	10.0	−0.5
Ferrosilicon	–	–		−9.5	11.3	−8.6	13.0
Other	–	–	28.8	9.1	−6.8	20.4	3.0
Construction	6.4	2.3	8.8	−4.7	−6.3	8.8	2.2
Trade	6.4	−6.1	6.3	7.8	6.5	11.0	0.0

1. Contribution to the GNP growth, i.e. changes in aggregates expressed as a percentage of GNP of the previous year.
2. GNP adjusted for effects of changes in the terms of trade.

Source : National Economic Institute.

The labour market, inflation and profitability

Rapid output growth was accompanied by tightening labour markets. The unemployment rate, already below 1 per cent, fell further to ½ per cent in 1987 (Table 3). However, this modest decline understates the increase in demand pressures, because the rate probably fell to its lowest feasible level. Taking into account unavoidable market frictions associated with entry into the labour force and movement between jobs, and the extremely long working week in Iceland[2], the labour market was probably supply-constrained. A survey taken in October indicated that job vacancies outnumbered the number of registered unemployed by almost 7 to 1. Altogether, the labour market appears to have been in a state of severe excess demand.

Table 3. **Labour market indicators**

	1982	1983	1984	1985	1986	1987
Unemployment rate	0.7	1.0	1.2	0.9	0.7	0.5
Average workweek[1]	50.2	49.6	49.5	50.2	50.2	50.0
Work stoppages[2]	0.4	0.0	1.0	0.3	0.0	0.3
Wage rates, per cent change						
Nominal	50.4	49.5	19.3	32.6	25.3	38.0
Real	−2.4	−17.4	−7.5	0.2	3.3	15.9
Earnings per capita, per cent change						
Nominal	53.8	56.5	27.8	42.5	33.0	39.5
Real	−0.1	−13.6	−0.9	7.6	9.5	17.4
Ratio of minimum to average wages[3]	74.6	72.2	74.7	67.3	61.8	67.1
	1985	1986		1987		1988
	September	April	October	April	October	April
Labour vacancies, per cent of labour force						
All industries[4]	1.7	2.1	2.9	3.5	3.5	2.7
Fish processing	14.2	6.6	7.1	7.2	8.7	7.9

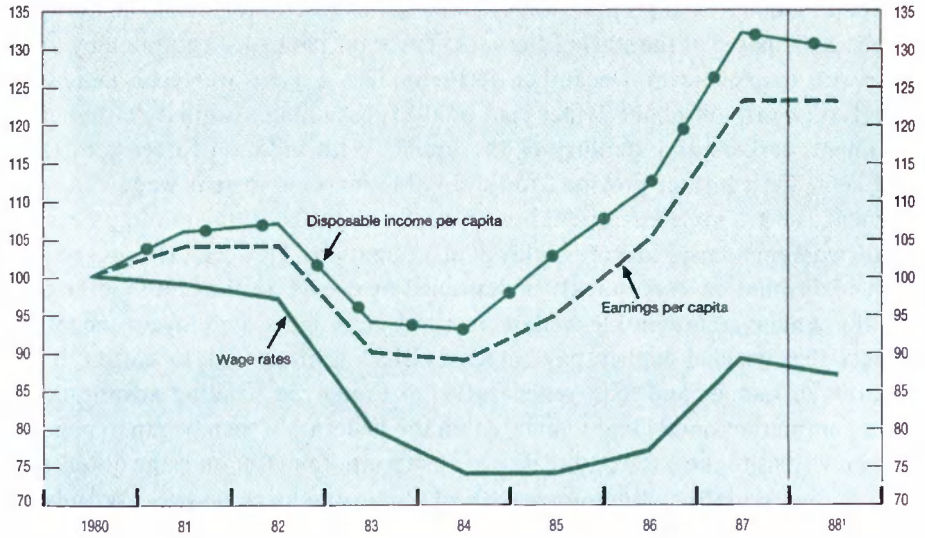
1. In hours; all workers. Figures do not apply to skilled or part-time workers, and are not adjusted for vacation time.
2. Days lost through strike activity, as a per cent of days supplied.
3. Excludes workers on monthly salaries.
4. Excludes agriculture, fishing and the non-health public sector.

Source : National Economic Institute.

Against such a background, wages and salaries rose much faster in 1987 than had been anticipated at the start of the year. The wage package negotiated by unions and private employers in December 1986 implied a year-over-year increase in nominal wage rates of about 21 per cent in 1987, assuming a similar settlement by government workers and stability of the krona. With inflation forecast to fall to 14 per cent, the contract provided for a sizeable increase in real wage rates. The agreement also attempted to rationalise pay scales and to boost the minimum wage of low-skill workers relative to more highly paid occupations. However, the prospects for continued disinflation were quickly undermined by events. In the first months of the year, the unions representing public workers and bank employees negotiated contracts that yielded higher pay increases than that agreed to earlier by the Federation of Labour and the Confederation of Employers. Taking advantage of a tight labour market, individual unions within the Federation then began to negotiate upward revisions to the basic pay scales, in an attempt to maintain wage differentials eroded by the rise in the minimum wage and public employee salaries. With labour costs increasing rapidly, prices were pushed up on domestically-produced goods and services, which in turn led to further wage increases via indexation clauses. In the end, nominal earnings rose by nearly 40 per cent in 1987.

The spread between earnings and wage rate growth has been an important characteristic of the labour market over the last few years (Diagram 3): on average, wage drift added roughly 6 percentage points to annual income growth over the 1980-1987 period. There are many reasons for such a development – the increasing use of bonuses and special pay arrangements, more people taking second jobs, and the tendency for professional salaries to rise faster than the wages paid to manual workers. In general, though, it has reflected the attempts by employers to compete for scarce labour on broader terms than that provided by the negotiated pay scales[3]. Disposable income grew even faster than average earnings per capita (40½ per cent), mainly due to an increase in labour force participation caused by the transition to a pay-as-you-earn income tax system. Because income earned in the course of 1987 was effectively tax free – tax payments in 1987 were based on 1986 income while 1988 tax payments will be based on 1988 income – many students and others temporarily entered the labour force, and multiple job holding increased. (For more details on this subject, see Chapter IV).

Diagram 3. **REAL WAGES AND INCOME**
(Indices, 1980 = 100)

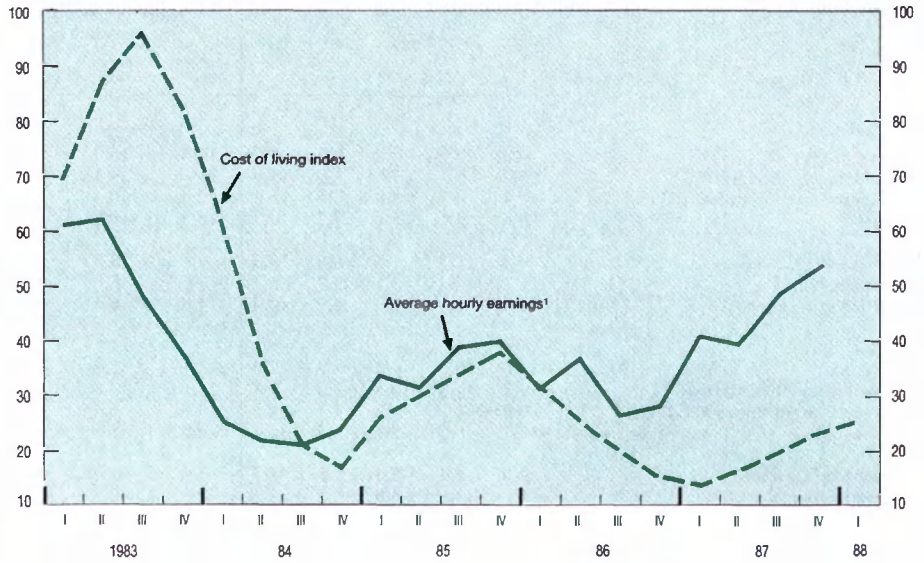


1. 1988 estimated data.
Source: National Economic Institute.

Price inflation remained relatively subdued in the face of such large increases in nominal wage costs. For the year as a whole, consumer prices rose by 19 per cent, down from 21½ per cent in 1986. Inflation performance was somewhat worse in the course of the year, with price increases accelerating steadily from a year-to-year rate of around 15 per cent in January to about 24 per cent by year-end (Diagram 4). Price developments would have been considerably worse if the Government had not stabilised the krona. The nominal effective exchange rate was almost unchanged, depreciating by only 3 per cent. Accordingly, total merchandise import prices rose by 7 per cent and prices of imported consumer goods increased by about 10 per cent. In contrast, prices of non-traded consumer goods and services appear to have increased at a rate closer to 25 per cent. These price changes yielded extremely large real-income gains for households: from 1986 to 1987, real average earnings rose 19½ per cent.

The Government's exchange-rate policy, although helping to hold down the overall rate of inflation, had negative repercussions on the profitability of the export

Diagram 4. **INFLATION PERFORMANCE**



1. % change from four quarters earlier.
Source: National Economic Institute.

sector. In the fish-processing industry, the combination of rapidly-escalating wage costs and a fixed nominal exchange rate led to a slight decline in gross profitability (Table 4). Under normal circumstances such a combination would have resulted in a much worse deterioration in profits, but high product prices and productivity gains largely compensated. With world fish prices climbing rapidly throughout the year (the price of marine exports rose by 22 per cent in U.S. dollar terms), a relatively high level of profitability was maintained, and the number of job vacancies rose. In the case of the fishing fleet, the net earnings situation was even better because of the importance of profit sharing. Due to the use of catch shares as the primary form of seamen's compensation, as well as the productivity gains associated with the large size of the catch, the increase in unit labour costs was moderate, and profits were stronger than they had been for years. However, conditions in other export industries were not as favourable. The krona price of ferrosilicon exports was unchanged in 1987, while aluminium prices rose by only 8 per cent. In the domestic woollen industry, one of the country's two largest exporters was faced with financial difficulties because of higher domestic labour costs and the depreciation of the U.S.

Table 4. **Profitability of the fisheries**
Per cent of gross income

	1982	1983	1984	1985	1986	Estimate based on cost conditions in		
						Midyear 1987	March 1988	April 1988
Gross profits[1]								
Fishing, total	4.9	7.3	6.8	9.6	13.9	19.6	16.3	–
Trawlers less than 500 GRT	8.9	8.1	7.6	11.1	16.9	21.8	19.1	–
Trawlers larger than 500 GRT	7.4	4.7	8.0	10.5	15.1	22.2	20.8	–
Boats	−0.5	7.1	5.6	7.7	10.5	16.5	10.8	–
Fish processing, total	−0.1	1.2	1.8	5.6	10.2	9.6	8.5	3.5
Freezing plants	1.7	2.2	3.1	5.2	8.2	7.6	5.3	−0.1
Saltfish processing	−4.0	−2.0	−2.3	6.9	14.4	14.0	14.5	10.0
Net profits[2]								
Fishing, total	−11.0	−9.3	−9.4	−3.8	2.0	8.1	2.8	–
Trawlers less than 500 GRT	−9.7	−11.3	−10.5	−3.9	4.1	11.6	7.6	–
Trawlers larger than 500 GRT	−9.9	−11.2	−6.7	−1.1	4.8	9.1	6.6	–
Boats	−12.7	−6.5	−8.6	−4.3	−6.8	6.5	−2.3	–
Fish processing, total	0.9	1.1	−7.3	−2.5	2.8	3.6	1.4	−4.6
Freezing plants	1.3	1.6	−6.6	−3.5	0.4	1.0	−2.7	−8.2
Saltfish processing	0.2	−0.3	−9.6	0.2	8.0	9.2	8.9	2.0

1. Operating surplus excluding interest payments and depreciation, adjusted for payments into and out of the Price Equalization Fund.
2. Gross profits less imputed interest payments and depreciation.
Source: National Economic Institute.

dollar. (More so than other exports, the wool industry depends on the North American market.) In contrast, firms providing domestic services or goods were reported to be in good financial shape, because their output prices rose more in line with wages, and because of the large decline in the relative price of imported intermediate goods.

Domestic demand growth

Total domestic demand grew by around 14 per cent in 1987, the fastest rate since 1970. The 18½ per cent rise in real disposable income was the chief source of this strength, the volume of private consumption expanding by 14 per cent. Although the personal saving rate increased, household spending as a ratio of GDP rose to 64 per cent, compared to an average of less than 60 per cent in the 1980-1986 period. This was the highest level reached since the early 1960s. Residential investment also grew rapidly, increasing by 10 per cent. The demand for housing was spurred by increased mortgage-financing facilities offered by the State Building Fund, a government-subsidised real mortgage rate of only 3½ per cent, and higher real incomes. Nevertheless, the share of residential investment in GDP remained well below the level of the late 1970s (Table 5)[4].

Business capital spending was also positively influenced by favourable financial conditions and the overall strength of the economy. Improved profitability was the major factor in many sectors. In addition, the ability to borrow abroad on favourable

Table 5. **Capital formation**
Per cent of GDP

	Industrial			Residential	Public	Total
	Fisheries	Other	Total			
1977	3.7	7.6	11.2	6.0	10.0	27.2
1978	2.6	7.7	10.4	6.2	8.2	24.7
1979	2.8	6.7	9.5	6.2	7.7	23.5
1980	2.4	7.8	10.1	6.2	9.0	25.3
1981	2.5	7.5	10.0	5.4	9.1	24.5
1982	2.3	7.5	9.8	5.8	8.3	23.9
1983	2.1	7.0	9.1	5.5	7.3	21.8
1984	2.0	8.0	10.0	5.8	7.1	23.0
1985	1.9	9.4	11.4	4.8	6.3	22.4
1986	2.8	8.6	11.4	3.8	5.5	20.7
1987	3.2	9.4	12.6	3.9	5.8	22.3
1988 estimate	2.9	8.9	11.8	4.1	6.0	21.9
Average	2.6	8.0	10.6	5.3	7.6	23.4

Source: National Economic Institute.

terms[5], held down the cost of credit. The introduction of equipment leasing provided a new source of foreign-supplied credit that facilitated the import of capital goods. Given the large decline in the relative price of (imported) capital equipment, the effective cost of capital probably fell to a rather low level during the year. As a result, investment in the fishing fleet, the aluminium smelter, commercial real estate, and transportation was substantially increased. Capital formation in those sectors experiencing profitability problems (agriculture, ferrosilicon production, fish processing and other manufacturing) was somewhat more subdued, but still substantial. Overall, business fixed investment grew faster than any other component of domestic demand in 1987, and as a share of GDP it rose well above its average in recent years. Strong foreign demand prompted exporters to pare an already lean level of inventories somewhat further but, as the rundown was slower than in 1986, stockbuilding made a significant contribution to growth.

Public consumption rose by 4 per cent in volume terms. This was somewhat slower than in the two years to 1986 but faster than initially projected by the authorities. At the start of 1987, government purchases of goods and services were expected to increase by only 3 per cent in real terms. An expanded government workforce and longer working hours largely accounted for the difference. Public investment grew rapidly (by 14 per cent), with increased outlays on roads, public buildings and geothermal power projects. This development was part of a longer-term plan to expand and upgrade portions of the nation's infrastructure. However, public capital programmes now account for a much smaller portion of aggregate demand than was the case in the 1970s.

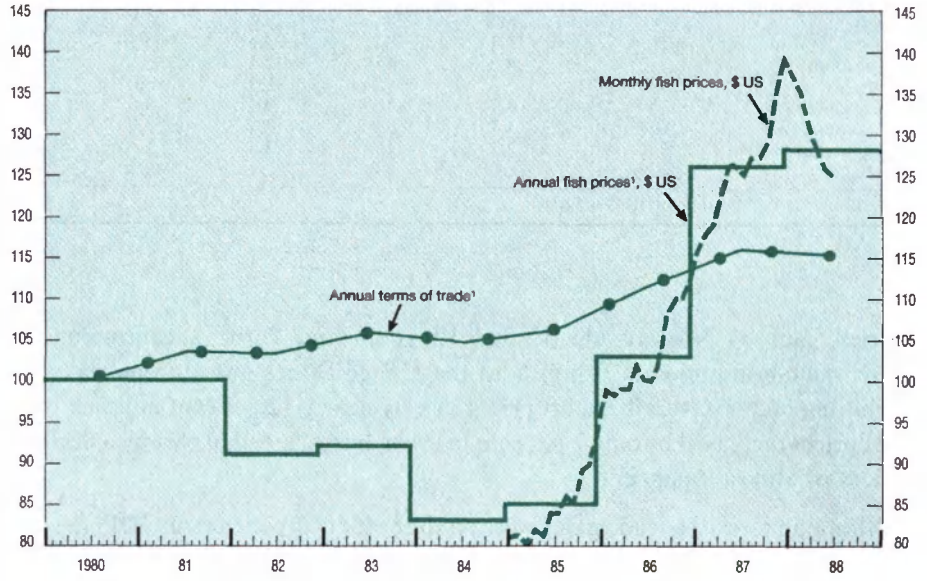
Balance of payments and foreign indebtedness

Merchandise import volumes increased by 25 per cent in 1987, spurred by buoyant domestic demand and falling relative prices. Purchases of capital goods were the chief source of strength, with imports of fishing vessels, machinery and other goods rising by well over 50 per cent, helped by low prices and favourable credit arrangements. Consumer items, such as motor vehicles, increased by 26½ per cent, and were the second fastest growing category. The demand for raw materials was more subdued, growing in line with GDP. (For example, oil import volumes rose only 8¼ per cent.) Imports of services – excluding net factor income – outstripped domestic demand and rose by 16½ per cent, chiefly because of increased tourism. Altogether, the volume of imports of goods and services expanded by 22½ per cent in 1987. Export growth was much more modest. Although export production grew by 7½ per cent in real terms, merchandise export volumes increased by only 3¼ per cent,

since exports had been inflated in 1986 by a rundown of stocks. On the service account, increased tourism and NATO-related receipts helped to boost export volumes by over 6 per cent. Overall, the export volume of goods and services rose by about 4 per cent, and the swing in the foreign balance as a whole made a large negative contribution to GDP growth (around 7 percentage points).

The terms of trade improved by almost 5½ per cent in 1987, mainly due to the strength of fish prices in North America and other markets. Prices rose steadily (Diagram 5), and by year's end the U.S. dollar price for all fishery products stood about 40 per cent above the 1986 average level. Especially large increases were recorded for fish meal and oil products, but most other categories also saw major gains, with the exception of salted herring. The reasons for this surge in fish prices are not entirely clear, although part of the increase was probably due to the depreciation of the dollar. In addition, prices were strengthened by lower catches in other

Diagram 5. **FISH PRICES AND THE TERMS OF TRADE**
(Indices, 1980 = 100)



1. 1988 figures are estimated.
Source: National Economic Institute.

Table 6. **Balance of payments**

	1984	1985	1986	1987	Estimate 1988
	Millions of kronur				
Current account	−4 105	−4 808	714	−7 257	−11 140
Trade account	−332	−10	3 980	−1 967	−5 230
Exports	23 557	33 750	44 968	53 053	57 053
Imports	−23 889	−33 760	−40 988	−55 020	−62 260
Service account	−3 798	−4 806	−3 426	−5 266	−5 910
Net interest	−4 555	−5 605	−6 226	−6 213	−6 990
Other	757	799	2 800	947	1 080
Net transfers	25	8	160	−24	–
Capital account, net	4 111	11 847	3 865	10 246	–
Long-term borrowing	3 234	5 476	6 099	6 740	3 274
Public	2 689	3 929	3 224	508	−391
Financial institutions	1 288	1 697	1 920	5 403	1 160
Private	−743	−150	955	829	2 505
Short-term capital	1 192	5 063	−2 108	3 689	–
Public	229	−221	−264	2	–
Financial institutions	1 423	2 635	−2 317	3 518	–
Private	−460	2 649	473	169	–
Direct investment	409	1 002	256	69	–
Other	−724	306	−382	−252	–
Net errors and omissions	−930	−2 201	−1 198	−3 594	–
Overall balance	−924	4 838	3 381	−605	–
	Per cent of GDP				
Trade account	−0.4	0.0	2.5	−1.0	−2.0
Exports	26.7	28.2	28.1	25.8	22.0
Imports	−27.1	−28.2	−25.6	−26.8	24.0
Service account	−4.3	−4.0	−2.1	−2.6	−2.3
Net interest	−5.2	−4.7	−3.9	−3.0	−2.7
Current account	−4.7	−4.0	0.4	−3.5	−4.3
Capital account, net	4.7	9.9	2.4	5.0	–
Long-term borrowing	3.7	4.6	3.8	3.3	1.3
Overall balance	−1.0	4.0	2.1	−0.3	–

Source : *Economic Statistics*, Central Bank of Iceland.

countries, such as Norway, the United Kingdom and Peru. A continuing shift towards the consumption of fish in both the United States and Europe was also a contributing factor. Overall, export prices rose by nearly 12 per cent in krona terms. Import prices increased by only 7 per cent in krona terms, aided in part by a decline in oil prices of almost 7 per cent.

Although terms-of-trade gains were on the order of 1 per cent of GDP, the trade balance deteriorated markedly, shifting from a surplus of 2.5 per cent of GDP in 1986 to a deficit of 1 per cent in 1987. With a widening of the traditional deficit on invisibles – despite a decline in the debt service burden associated with a fall in world

interest rates – the current-account balance registered a deficit of 3½ per cent of GDP, compared with a surplus of ½ per cent in 1986. The deficit was largely financed by borrowing abroad, and the net foreign-exchange position of the Central Bank deteriorated by only IKr 300 million. However, substantial changes took place in the structure of capital inflows, both long-term and short-term. Net foreign borrowing by the public sector fell to its lowest level in years, due to efforts to finance the Treasury's deficit domestically, but there was a sharp increase in the net foreign liabilities of financial institutions, including leasing companies. Despite the marked deterioration in the current-account balance, the foreign debt-to-GDP ratio fell from 45.2 per cent in 1986 to 41.2 per cent in 1987 (Table 7). This relative improvement in foreign indebtedness was due, for the most part, to the real appreciation of the krona brought on by the fixed nominal rate policy, but strong economic growth also contributed[6].

Table 7. **Foreign debt and the debt service burden**[1]

	1982	1983	1984	1985	1986	1987	Estimate 1988[2]
Per cent of GDP							
Long-term foreign debt	38.9	48.6	48.3	50.8	47.2	40.8	41.0
Net external debt	39.2	47.1	49.3	52.5	45.2	41.2	41.4
Service of foreign-funded debt	7.2	8.5	9.6	8.1	7.6	5.8	5.5
Per cent of export revenue							
Long-term foreign debt	114.0	117.2	122.3	120.3	117.4	112.4	115.6
Net external debt	114.9	113.6	124.9	124.3	112.2	113.5	120.8
Service of foreign-funded debt	21.2	20.6	24.3	19.2	18.9	16.0	16.5
Memorandum items :							
Average interest rate paid on external debt	11.8	9.9	10.4	9.3	8.7	7.8	–
Average real rate	3.8	4.0	5.7	4.8	4.7	4.0	–
Average maturity of external debt (years)	11.0	11.2	11.6	12.6	12.4	12.5	–

1. Debt outstanding at end of year, at average exchange rate.
2. Assuming cost of foreign currency fixed at its June level during the second half of 1988.
Sources : Central Bank of Iceland and OECD Secretariat estimates for 1988.

1988: A changing environment

Early in 1988, it became apparent that export earnings were being affected by weaker fish prices in North America and elsewhere. As shown in Diagram 5, the U.S. dollar price of fish products peaked late in 1987 and then began to decline rapidly. This change from a seller's to a buyer's market was accompanied by rising inventories

of frozen fish on some markets, and greater difficulties in negotiating supply contracts. The break in prices, which applied to frozen and fresh products, appears to have been caused by increased exports from Norway and other areas, as well as a delayed reaction by U.S. consumers to the earlier rise in prices. However, some marine prices (such as capelin oil) have firmed, and pre-contracted sales of a sizeable portion of the catch have also helped to reduce losses. With aluminium and other export prices benefiting from the strength of world industrial production and with oil and other import prices increasing only moderately, the deterioration in the terms of trade appears to have been limited.

The decline in fish prices squeezed the net earnings of exporters, which were already falling due to high domestic wage inflation and the real appreciation of the krona. In spite of a 6 per cent devaluation of the krona in late February, the fish processing industry saw its net profitability turn negative in the Spring. Conditions were worst at freezing plants, where losses were estimated to be running at over 9 per cent of gross income in April. Under these conditions, some plants began laying off workers. Fresh fish also began to be diverted to foreign processing firms, whose ability to outbid domestic companies was growing. Sales and profits were also held back by a decline in the size of the cod catch, although landings of most of other species appear to be running at about the same rate as in 1987, and the capelin take has been large. Declining export production and reduced profitability, combined with a tightening of fiscal and monetary policy and a further depreciation of the krona, provide the background to a rapid deceleration in growth and an acceleration in inflation. discussed in Part III.

II. The policy setting

Stabilisation policies

The primary objective of Icelandic policy has traditionally been to maintain full employment, often at the expense of price stability and the current external balance. Since 1983, however, the fight against inflation has been given greater priority. To this end, the authorities have relied essentially on two instruments: fiscal concessions in return for wage restraint and a stable nominal effective exchange rate as a "nominal anchor" for the price projections entering into the wage bargaining process. To help achieve the demand conditions needed to support this strategy, monetary policy has become more restrictive. But the rise in domestic real interest rates has not prevented an excessive growth in money and credit, a burgeoning of domestic demand and a widening in the current account deficit. A persistent budget deficit (related in part to the concessions noted above) has complicated the task of monetary policy; the Government has borrowed heavily at times from the Central Bank and abroad, preventing an adequate control over the monetary base. In a fully-open economy, such a mix of exchange-rate stability, rapid monetary growth and fiscal ease could not have been sustained for long. In Iceland, it can be maintained for relatively long periods because capital outflows are closely controlled[7]. However, supervision of borrowing abroad is less strict, and capital imports have resulted in an inflationary boost to domestic liquidity creation. Greater stability has been achieved in the external sector (i.e. in export and import prices) but at the cost of inflation and excess demand in the domestic sector, as well as of accumulating overseas debt and debt interest payments.

Exchange-rate policy

The pursuit of a firm exchange-rate policy as a prerequisite of greater price stability dates from the stabilization package of May 1983. In the context of a highly

indexed economy, the previous policy of maintaining the profitability of the export and import-competing industries through frequent depreciations of the exchange rate had to be abandoned because it fuelled a wage-price spiral which proved difficult to control. Excessive wage increases led to a depreciation of the krona in the Autumn of 1984 (see 1985 *Survey*). However, the fixed exchange-rate policy was re-emphasised in connection with the wage agreements of February 1986, when the Government capitalised on an improving external environment by offering tax cuts in return for wage restraint. During the 1987 negotiations the Government also pledged exchange-rate stability and fiscal concessions in order to achieve a moderate wage settlement.

As noted above, rapid wage increases undermined the agreement. Nonetheless, the Government kept its commitment to exchange-rate stability, since to drop it would have meant the triggering of indexation clauses which would have generated additional nominal wage pressures. However, nominal exchange-rate stability was achieved at the cost of a substantial *real* appreciation of the krona (Table 8). In terms of the CPI, the appreciation was 15 per cent; measured by relative unit labour costs it reached as much as 30 per cent. In a small open economy such as Iceland's, which is in

Table 8. **The real exchange rate of the krona**

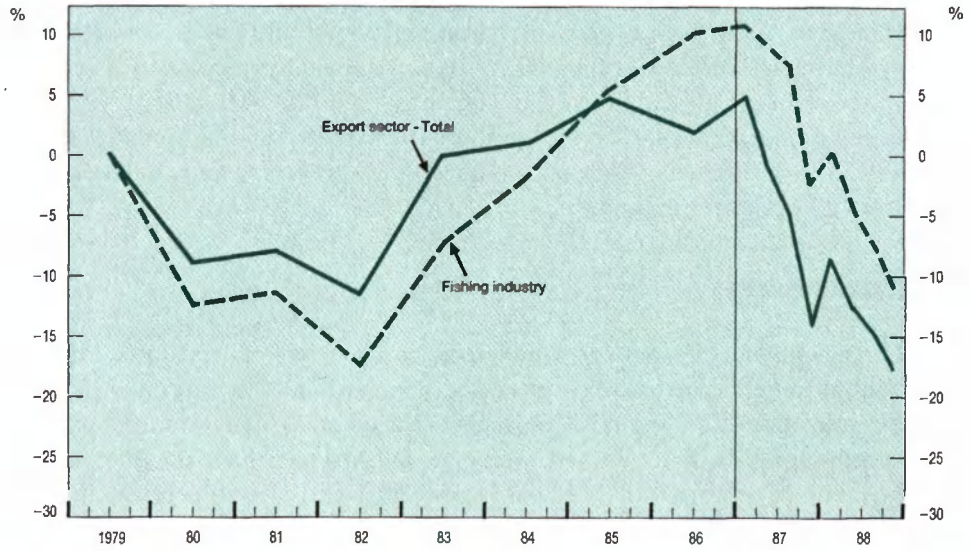
	Relative consumer prices		Relative unit labour costs	
	Real exchange rate	Change from previous period %	Real exchange rate	Change from previous period %
1980	100.0		100.0	
1981	104.2	4.2	106.7	6.7
1982	95.2	−8.6	101.2	−5.2
1983	89.4	−6.1	84.8	−16.2
1984	94.1	5.2	85.0	0.1
1985	92.9	−1.3	86.5	1.7
1986	94.1	1.3	86.6	0.1
1987	102.8	9.2	106.4	22.8
1988[1]	111.1	8.1	114.9	2.0
1987 Q1	96.9	0.8	98.3	6.4
1987 Q2	99.2	2.4	101.4	3.2
1987 Q3	104.9	5.7	106.2	9.7
1987 Q4	110.5	5.3	119.7	12.7
1988 Q1	112.6	1.9	117.1	−2.2
1988 Q2	106.5	−5.4	113.6	−3.0
1988 Q3[1]	110.5	3.8	113.4	−0.2
1988 Q4[1]	114.7	3.8	115.5	1.9

1. Projection.
Note: The calculation is based on quarterly information on relative consumer prices, wages, output and employment in 15 countries. The figures for the latter half of 1987 are preliminary.
Sources: Central Bank of Iceland and OECD Secretariat estimates.

large part a price taker on international markets, the real exchange rate has a fundamental effect on the profitability of the export sector[8]. While there is little doubt that increased exchange-rate firmness was an important element in achieving a better productivity performance – through increased automation and gains in labour efficiency – the Central Bank index used to evaluate pressures on exporters' profit margins began to show a significant divergence from its "equilibrium level" as from early 1987 (Diagram 6)[9]. By the final quarter of the year, the decline in the value of the krona required to restore the share of gross operating surplus to its 1979 level was 14 per cent in the export sector as a whole.

During the early part of 1988, the demands for depreciation became more insistent, from export producers and, unprecedentedly, from the labour federation. Such views were supported by the argument that at the prevailing exchange rate unit labour costs in Iceland had risen far more than in competitor countries, so that it had become profitable to switch fish processing (for example) to the United Kingdom or Germany. With the current account continuing to deteriorate, the Government

Diagram 6. **THE INDEX OF COMPETITIVE POSITION**[1]



1. The necessary change (%) in the value of the krona needed to restore the share of gross operating surplus to its 1979 level.
Source: Central Bank of Iceland.

devalued the krona by 6 per cent in February, but this served only to encourage speculation that a further devaluation would follow. Indeed, prospects for price and wage developments suggested, at the prevailing parity, an additional real exchange rate appreciation of around 11 per cent in 1988. On 16th May, the krona was devalued by a further 10 per cent.

Monetary policy

Since the announcement of the May 1983 stabilization package, it has been recognised that a tighter monetary stance was needed to support the exchange rate. The objective has been only partially attained. In 1987, the aim of the monetary authorities was one of monetary restraint, to counter the expansion of demand, but it proved impossible to apply the tools of monetary control effectively[10]. Since November 1986 deposit money banks have been allowed to determine freely their own interest rates[11], with a corresponding derogation of Central Bank powers to set interest rates; interest rates have thus responded more freely to market conditions than hitherto. But Central Bank influence over monetary conditions has decreased, raising the question of how it might be strengthened[12]. Alterations to reserve requirements raised the lending capacity of the commercial banks in 1987, while reliance was placed on a newly-introduced liquidity ratio that proved inadequate. The Government was slow to raise interest rates on Treasury securities as the fiscal deficit rose, preferring to overdraw at the Central Bank. And finally, relaxation of controls on private borrowing abroad in 1986 and again in 1987 brought a sharp increase in foreign borrowing, particularly on the part of newly-created leasing companies. The situation was exacerbated by the political uncertainty prevailing up to the formation of the new Government in July.

Interest rates

The new-found freedom for commercial banks to set interest rates led to a narrowing of differentials between bank and non-bank interest rates and to more frequent rate changes as the brisk expansion in demand and accelerating inflation pushed rates upwards. Thus, interest rates on unindexed securities rose from around 19 per cent in the first quarter of 1987 to 35 per cent in early 1988 (Table 9). Interest rates on indexed securities also increased considerably, to average 9½ per cent in early 1988, compared with 6 per cent one year earlier. On the other hand, real interest rates on non-indexed bank credits were rather low in the early part of the year, as the

Table 9. **Average interest rates on secured bank loans and government bonds**

Rates	Non-indexed secured loans				Indexed secured loans	Treasury bonds
	Nominal	Yield	Inflation	Real	Real	Real
1986						
I	28.0	30.0	19.1	9.2	5.0	7-8.5
II	15.5	16.1	11.1	4.5	5.0	7
III	15.5	16.1	13.2	2.6	5.0	7.5-8
IV	16.0	16.7	15.7	0.9	5.7	6.5
Average	18.7	19.6	14.7	4.3	5.2	–
1987						
I	19.1	20.0	21.5	−1.2	6.4	6.5
II	22.7	24.0	20.4	3.0	6.8	6.5
III	29.1	31.2	18.9	10.3	8.2	8.5
IV	33.7	36.5	28.4	6.3	9.3	8.5
Average	26.2	27.9	22.2	4.7	7.7	7.5
1988						
I	35.3	38.4	16.9	18.5	9.5	8.5
II	33.5	36.3	37.5	−0.9	9.5	8.5
January/August 1988	36.0	39.2	27.9	8.8	9.5	8.5
Memorandum item :						

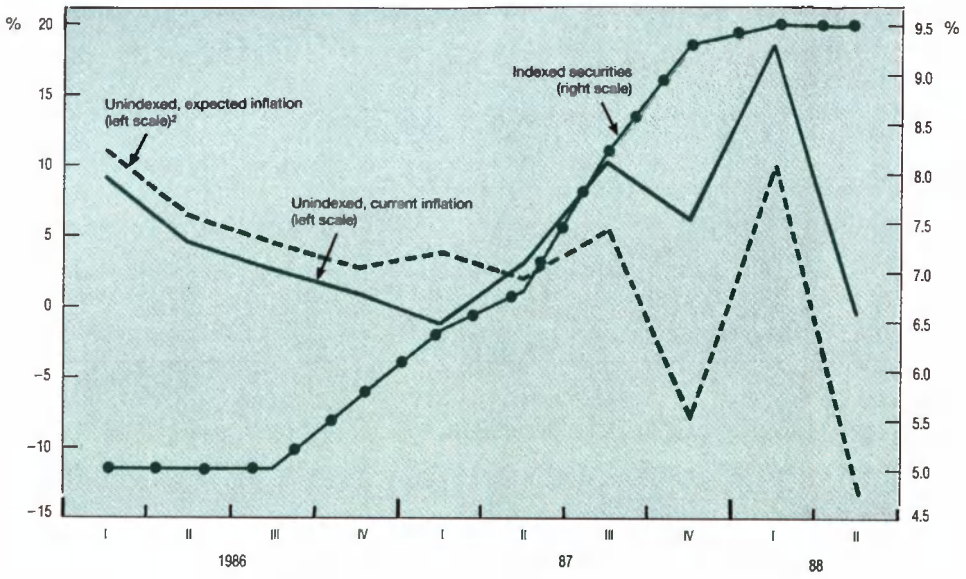
	1980	1981	1982	1983	1984	1985	1986	1987
Real interest rates on foreign borrowing	0.7	3.3	3.8	4.0	5.7	4.8	4.7	4.0

Sources : Central Bank of Iceland and National Economic Institute.

banks underestimated the pace of inflation. Measured by the quarterly change in the credit terms index, the average real rate on secured loans even became negative in the first quarter, before rising to over 8 per cent in the second half (Table 9). But this measure may overstate the true real interest rate in two ways. Based on expected inflation, as they should be, real interest rates may have been much lower, particularly if borrowers anticipated a devaluation. Measures of real interest rates on unindexed loans, based on a proxy for anticipated inflation including a possible depreciation show that on some measures real interest rates could have become negative in the second half of 1987, on loans to finance imports (Diagram 7)[13].

Nevertheless, at 9.5 per cent in early 1988 the rate on indexed krona loans appeared quite high by international standards. The real rate on Icelandic foreign borrowing (which is a proxy for the real rate in OECD economies since it is measured in terms of the nominal rate less the average OECD inflation rate) stood at about

Diagram 7. **REAL INTEREST RATES**[1]



1. Rates on secured bank loans.
2. Expected inflation measured as current inflation plus the change in the price of foreign currency needed to restore export profitability (as in Diagram 6).

Sources: Central Bank of Iceland and OECD Secretariat estimates.

4 per cent (Table 7). Indeed, the level of Icelandic real interest rates began to be a political issue during the year, since the 1986 Central Bank Act allows the Central Bank to intervene if domestic real rates get out of line with those abroad. However, the 9.5 per cent indexed rate overstates the true real rate on a large proportion of borrowing. Indexed loans offered by the investment credit funds varied between 2 and 8.5 per cent and were 3½ per cent for housing finance. In some cases, these funds relend foreign credit in indexed krona terms and receive government subsidies which allow them to absorb part of the foreign-exchange risk[14]. Furthermore, for indexed borrowing in general real rates may not have been as high as they appeared. Insofar as the credit terms index – the gauge used for financial indexation – embodies a composite of both import and domestic prices, the krona value of the loan (determined by the credit terms index) is only partly indexed to the price of foreign currency, so that devaluation *per se* would give firms and individuals who borrowed in

krona to finance imports a capital gain[15]. (This would not be so if the loan was foreign-currency linked.)

Money, credit and liquidity

Total lending by the banking system increased by nearly 44 per cent between the beginning and the end of 1987, a real increase of nearly 18 per cent (Table 10). A quarter of the increase was financed by foreign borrowing, the net foreign liabilities of the banking system more than doubling. M3 rose by a substantial 35 per cent, and M2 by 38 per cent, the latter outstripping inflation by almost 13 per cent. Monetary expansion has been rapid over the last few years, partly because disinflation and the move towards market-determined interest rates have made savers more willing to hold money balances: M3 velocity has been falling steadily in the 1980s. But even allowing for possible portfolio adjustments of this kind, monetary growth in 1987 appears to have been excessive, also suggesting that conventional "real" interest rate measures may be biased upwards. The expansion of the monetary base has been substantially above nominal interest rates, especially in the first half of the year.

Much of the increase in base money and bank liquidity derived from a reform of the monetary control system, with Central Bank lending to the Government being also a factor. The reserve requirement was reduced from 18 to 13 per cent of deposits in February, on the initiative of the Government and against the advice of the Central Bank[16]. The move was intended to transfer part of the Government's debt with the Central Bank to the deposit banks, since they were to receive three-fifths of the funds released in the form of Treasury bills and the rest in cash. The Central Bank was

Table 10. **Bank lending, deposits and the money supply**

	1986			1987		
	Change kronur (million)	% change		Change kronur (million)	% change	
		Actual[1]	Real		Actual[1]	Real
Domestic lending[2]	9 119	16.4	1.5	28 269	43.7	17.6
Net foreign borrowing	−4 473	−28.4	–	5 696	132.0	–
Cash and deposits (M3)	13 748	35.0	–	18 803	35.5	10.9
M2	11 183	37.0	19.4	15 676	37.9	12.8
M1	2 961	43.8	25.4	3 209	33.0	8.8
Monetary base	3 485	33.0	16.0	1 469	10.5	−9.6

1. Real change is calculated by dividing the actual growth rate by the inflation rate

$$\text{e.g. : real growth rate} = \frac{(1 + \text{actual growth}/100)}{(1 + \text{inflation rate}/100)}$$

2. Equal to net foreign borrowing plus M3.

Source : Central Bank of Iceland.

concerned that this reduction in reserve requirements would result in increased lending by the banks and sought to offset it by introducing a liquidity ratio of 7 per cent of disposable funds[17]. But this was too low to forestall a surge in bank advances, following a considerable recovery in bank liquidity. Favourable deposit developments enabled banks to exceed the 7 per cent ratio in the first nine months of the year, and the ratio was therefore raised to 7.5 per cent in July and further to 8 per cent in August. With increased demands for loans and decreased deposits, bank liquidity declined again in the autumn. During the last months of 1987, some banks were forced to pay considerable penalties to the Central Bank owing to their failure to fulfil their liquidity obligations (Table 11)[18]. The situation continued to deteriorate in the first quarter of 1988, before it was corrected. In June 1988 the Central Bank tightened liquidity requirements by closing a loophole which allowed them to create liquidity by borrowing abroad even where the funds were relent. Foreign liquidity is no longer considered an eligible asset unless it coincides with a positive foreign exchange position.

The main forces behind the demand for credit were households and industries (Table 12). Credit to individuals showed the fastest rise of all, partly to finance consumption – as the declining relative price of imports encouraged borrowing to

Table 11. **Bank liquidity**

	Liquidity ratio (per cent)	
	Outcome	Required
1987		
March	8.8	7.0
April	9.7	7.0
May	11.0	7.0
June	9.9	7.0
July	9.3	7.5
August	10.1	8.0
September	9.1	8.0
October	7.3	8.0
November	6.4	8.0
December	6.0	8.0
1988[1]		
January	6.0	8.0
February	5.4	8.0
March	5.4	8.0
April	7.2	8.0
May	8.0	8.0
June	7.9	8.0
July	8.0	8.0

1. Provisional.
Source: Central Bank of Iceland.

Table 12. **The credit system**[1]

Millions of kronur

Position at end of year	Assets				Liabilities				Foreign credit
	Lending to				Financial savings				
	Central Government	Municipalities	Industries	Households	Total	Voluntary	Institutional	Total	
1981	5 730	1 634	11 252	4 962	23 578	8 912	6 664	15 576	8 002
1982	12 150	3 666	22 180	9 514	47 510	14 252	12 049	26 301	21 209
1983	22 899	6 225	38 656	19 062	86 842	25 073	23 176	48 249	38 593
1984	32 339	7 937	53 889	27 563	121 728	31 769	31 636	63 405	58 323
1985	43 534	9 593	70 380	43 835	167 342	47 097	48 149	95 246	72 096
1986	49 893	11 369	86 765	59 779	204 806	64 378	62 449	126 827	77 979
1987	55 793	11 966	117 917	87 099	272 775	90 871	90 883	181 754	91 021

1. Included are the Central Bank, deposit money banks, mortgage departments of banks and saving banks, investment credit funds, other state lending funds, pension funds, insurance companies, leasing companies, mutual funds, foreign sector and private bond issues not included above. Inter institutional transactions are excluded.

Source : Central Bank of Iceland.

finance consumer imports – and partly to finance housing investment. Business investment grew strongly, in all categories, and this was reflected not only in the demand for bank credit, but also in the development of new financial institutions, such as leasing companies. From February 1986, leasing transactions were exempted from sales tax and in May of that year leasing companies were authorised to borrow abroad on their own responsibility.

This rather loose control of borrowing abroad, in conjunction with strict supervision of capital outflows, created a growing imbalance between the domestic and external sectors. Because of capital controls, the Government was able to keep the krona stable and price inflation relatively low in the face of excess demand and a growing current account deficit. But an expansion of the foreign borrowing operations of commercial banks, leasing companies and investment credit funds provided a base for excessive domestic credit expansion, which undermined monetary tightness and fuelled excess demand and inflation in the domestic sectors of the economy. Controls over long-term capital inflows were tightened during the year. The freedom of the private sector to borrow abroad was limited by a series of measures taken in September 1987 and subsequently (see section on the Credit Budget below). But short-term capital inflows have remained less strictly controlled.

Budgetary policy

Fiscal policy has been one of the key factors undermining the disinflation process in recent years, because of its role in fuelling domestic demand, monetary expansion and external debt. Three features stand out:

i) Public finances have been in deficit at a time when the economy was operating at over-full employment, adding to the problem of overheating;

ii) In financing the deficit, the Government has been reluctant to do so in a non-inflationary way: it has often resorted to Central Bank borrowing, which has exacerbated the problem of monetary control;

iii) Foreign borrowing (including government-sponsored borrowing) has financed the current-account deficit, but at the cost of an accumulation of foreign debt.

Real exchange-rate appreciation may check this debt accumulation in the short term, but the burden of overseas debt is apparent in the prospective build-up of interest payments over the medium term.

The 1987 Budget and the fiscal deficit

The Treasury has continued to run a deficit since 1985, despite particularly favourable cyclical conditions (Table 13). The worsening of the deficit in 1987 reflects both a deliberately expansionary stance up to mid year and the inadequate operation of "automatic stabilisers" at a time when the economy was enjoying a boom. The initial 1987 budget proposal was to restrict the Treasury deficit to IKr 1.6 billion (1.1 per cent of GNP), the aim being to eliminate it by 1989. But this rather modest initial proposal was undermined by fiscal concessions in connection with the wage round and by the large rise in social security benefits associated with the wage increase (benefits are indexed to wages) during the early part of the year. By the time the new Government was formed in mid-year, the position had substantially deteriorated, and the mid-year estimate of the 1987 Treasury deficit was raised to IKr 3.4 billion (2.1 per cent of GNP).

Table 13. **Treasury finances**
Millions of kronur

	1984	1985	1986	1987 budget			1988 budget (revised)
				Initial budget	Forecast October	Outcome	
Current revenue	20 747	27 110	38 235	40 001	47 600	48 963	67 447
Current expenditure	19 964	29 497	40 111	41 584	49 900	51 688	68 140
Revenue balance	**783**	**−2 387**	**−1 998**	**−1 583**	**−2 300**	**−2 725**	**−693**
Loans and short-term credit	−951	−1 720	−730	68	−1 267	−2 798	−597
Borrowing requirement net (+)	**168**	**4 107**	**4 379**	**1 515**	**3 567**	**4 985**	**1 290**
Amortisation	2 543	1 032	3 767	3 335	3 410	4 236	4 800
Borrowing requirement gross	**2 711**	**5 139**	**8 146**	**4 850**	**6 977**	**9 221**	**6 090**
As proportion of GNP :							
Revenue	24.8	23.7	25.0	25.9	23.8	24.6	26.8
Expenditure	23.9	25.8	26.3	27.0	24.9	26.0	27.1
Revenue balance	0.9	−2.1	−1.3	1.1	−1.1	−1.4	−0.3
Net borrowing requirement	0.2	3.6	2.9	1.1	1.8	2.5	0.5

Sources : Central Bank of Iceland, *Annual Report 1987*, and Ministry of Finance.

The new Government took action in July to reduce the impending deficit. The coverage of the sales tax was widened and a temporary tax on external borrowing introduced. These measures were expected to raise IKr 850 million in 1987 and IKr 3.1 billion (1¼ per cent of GDP) on a full-year basis (Table 14). In October,

further tax increases were announced worth IKr 300 million in 1987 and IKr 600 million on a full-year basis. The measures succeeded in keeping the deficit down to 1½ per cent of GNP. The Treasury's net borrowing requirement (which consists of the deficit plus net lending operations but excluding refinancing of existing debt) amounted to IKr 5 billion – 2½ per cent of GNP. This compared with the IKr 1.5 billion projection in the initial 1987 Budget proposal (Table 13), so the overshoot was quite substantial.

The persistence of the deficit in recent years is largely explained by the granting of fiscal concessions in return for greater nominal wage stability. Unfortunately, these agreements have subsequently been eroded by wage pressure stemming from the excess demand for labour which fiscal deficits have helped generate. In 1987, this tendency was exacerbated by the run-up to the election. Part of the budgetary

Table 14. **Fiscal policy measures**
IKr million in 1988 prices (full year effects[1])

	July 1987	October 1987	Budget proposal	Additional measures approved in December	Estimated revenue effects in 1988
I. Revenue					
Broadening of sales tax base	2 500	–	600	4 880	7 980
Restructuring of import duties and excise taxes	–	–	100	−2 700	−2 600
Specific taxes on cars	650	300	–	–	950
Corporate taxes, total	–	–	600	–	600
Income taxes	–	–	150	–	–
Pay-roll taxes	–	–	400	–	–
Other	–	–	50	–	–
Miscellaneous taxes, total	550	300	100	–	950
On foreign borrowing	250	–	–	–	–
Charges for State guarantees	100	–	–	–	–
Import levy on feeds	200	–	–	–	–
Monopoly profits	–	300	100	–	–
Gross revenue raised	**3 700**	**600**	**1 400**	**2 180**	**7 880**
II. Expenditure					
Specific increase in child allowances	−240	–	–	−320	−560
Specific increase in pension payments	−320	–	–	−280	−600
Increased consumer subsidies	–	–	–	−1 450	−1 450
Redistributed tax on animal feeds	–	–	–	−160	−160
Specific mitigating measures	**−560**	**–**	**–**	**−2 210**	**−2 770**
III. Net increase in revenue through special measures	3 140	600	1 400	−30	5 110

1. Effects noted for 1987 measures are the amounts expected to be raised in 1988.
Source: Ministry of Finance.

problem also stemmed from the characteristics of the income tax system in operation until the end of 1987. The fact that personal income taxes were assessed on the previous year's income rather than on current wages and salaries meant that income tax receipts did not rise with inflation in 1987; indeed, real receipts fell, widening the deficit at a time when the economy was overheating. Table 23 below suggests that the explanation for the deficit lies in declining revenues – including cuts in import duties in 1987 – and higher interest payments, rather than in a trend towards increased public spending.

The deficit and inflation problems have also been made worse in recent years by heavy government borrowing from abroad[19]. Borrowing from the Central Bank fell in 1986 when government borrowing abroad increased substantially, but surged again in 1987. Not only was the deficit larger than expected, but during the first half of the year the inflow of loanable funds to the Treasury was less than expected, because the Government failed to keep interest rates on government borrowing attractive enough. The Central Bank encouraged an increase in the rate of interest on savings bonds in the Spring of 1987, but the increase was delayed until August. In the meantime, recourse to Central Bank borrowing (including the Treasury bill issue associated with the lowering of the reserve requirement) was a source of liquidity creation, increasing the lending capacity of the banking system.

Even though the Treasury's foreign borrowing was only slightly above target, foreign borrowing as a whole exceeded the initial estimate by a wide margin (Table 16). This was attributable to a surge in private-sector borrowing, associated

Table 15. **Treasury borrowing**

	1983	1984	1985	1986	1987		1988
					Budget	Outcome	Approved budget
Net borrowing requirement	**2 674**	**168**	**4 107**	**4 379**	**2 663**	**4 985**	**487**
Central Bank finance	1 190	−641	2 421	−2 737	−77	1 673	−640
Net borrowing outside Central Bank	1 484	809	1 686	7 116	2 740	3 312	1 170
Refinancing	1 175	2 543	1 032	3 767	3 410	4 236	4 635
Gross borrowing requirement[1]	**3 849**	**2 711**	**5 139**	**8 146**	**6 073**	**9 221**	**5 165**
Long-term financing[2]	1 890	2 892	3 725	8 471	6 384	6 690	5 165
Domestic	673	239	1 160	3 617	4 484	4 485	4 260
Foreign	1 217	2 653	2 565	4 812	1 900	2 205	905

1. "A" budget.
2. "A" and "B" budgets.
Sources : Central Bank of Iceland, *Annual Report 1987; The Icelandic Budget,* April 1988.

with the boom in leasing and investment credit fund borrowing noted above. To counter this trend, measures were taken in July. These included: the abolition of sales tax exemptions on computers; a higher excise tax on automobiles; an increase in the charge for state-guaranteed loans to 1½ to 2 per cent of the principal; a 0.25 per cent fee on foreign liabilities of banks covered by a general state guarantee and a 1 to 3 per cent fee on borrowing from abroad. These measures were followed, in September, by a tightening of the rules on foreign financing of domestic investment, requiring that 30 per cent of leasing contracts be financed domestically. However, with growing expectations that the krona would be devalued, the surge in imports continued, financed by an inflow of short-term capital, which remained unaffected by capital controls. In the year to December 1987 the foreign currency debt had grown by 9 per cent, although its ratio to GNP had fallen because of the abnormally high value of the krona (see above). Following the two devaluations in the first half of 1988, the krona value of long-term external debt rose by one-fifth.

Table 16. **The 1987 credit budget**
IKr million

	Domestic borrowing			Foreign borrowing			Total borrowing		
	Budget	Actual	Dev.	Budget	Actual	Dev.	Budget	Actual	Dev.
Public sector	4 450	5 523	1 073	2 550	3 147	597	7 000	8 670	1 670
Treasury	4 450	5 523	1 073	1 700	2 155	455	6 150	7 678	1 528
Others	–	–	–	850	992	142	850	992	142
Housing funds	3 815	4 280	465	–	–	–	3 815	4 280	465
Credit institutions	1 480	1 050	−430	1 565	2 662	1 097	3 045	3 212	667
Private enterprises	–	–	–	4 100	6 542	2 442	4 100	6 542	2 542
Leasing companies	–	–	–	–	2 493	2 493		2 493	2 493
Others	–	–	–	4 100	4 049	−51	4 100	4 049	−51
Total borrowing	9 745	10 853	1 108	8 215	12 351	4 136	17 960	23 204	5 244

Source : Ministry of Finance.

The 1988 Budget: moving towards balance

The key objective of the 1988 Budget – apart from the fundamental restructuring of the tax system, which is discussed in Part IV – was to balance the Treasury budget. As a result of substantial increases in income and sales taxes, total revenue was planned to increase by nearly 2 per cent of GNP, taking it back to its 1980 level.

A part of the increase was used to finance specific mitigating measures; nevertheless expenditures were expected to remain at about 26 per cent of GNP. The Treasury net borrowing requirement was planned to fall to 0.2 per cent of GNP (Tables 13 and 15) after incorporating revisions to the Budget enacted in March with the aim of countering the mounting current-account deficit. These measures included a doubling of the temporary tax on foreign borrowing and an increase in the corporation tax from 45 to 48 per cent of liable company revenue. However, by mid-year, the projection for the net borrowing requirement had been raised to ½ per cent of GNP, despite higher forecast revenues, implying a recurrence of the budgetary slippage which has been evident in recent years.

Long-term Treasury borrowing is expected to decline in 1988, allowing a repayment of Central Bank loans. Demand for credit by other sectors, particularly housing, is expected to remain strong, but borrowing on the part of leasing firms should halve (Table 17). As a result, total long-term borrowing (domestic and foreign) is projected to decline even in nominal terms, leading to a fall in gross borrowing from 11.3 to 8.6 per cent of GDP. Foreign long-term borrowing (including refinancing) is meant to fall from 6 to 3¾ per cent of GDP, which in view of the large deficit expected for the current account (see below) would imply a large swing towards short-term borrowing.

Table 17. **The 1988 credit budget**
IKr million

	Actual outcome 1987			Credit budget 1988		
	Domestic	Foreign	Total	Domestic	Foreign	Total
Public sector	5 523	3 147	8 670	4 260	1 849	6 109
Treasury	5 523	2 155	7 678	4 260	905	5 165
Others	–	992	992	–	944	944
Housing funds	4 280	–	4 280	6 160	–	6 160
Credit institutions	1 050	2 662	3 712	1 390	1 625	3 015
Private enterprises	–	6 542	6 542	400	5 800	6 200
Leasing companies	–	2 493	2 493	400	800	1 200
Others	–	4 049	4 049	–	5 000	5 000
Total borrowing	**10 853**	**12 351**	**23 204**	**12 210**	**9 274**	**21 484**

Source : Ministry of Finance.

III. Economic prospects and policy options

The short-term outlook

Based on present economic trends and the stance of policy, 1988 is likely to prove a year of recession. Four factors dominate the prospects for the short run:

- The decline in fish prices is reducing export earnings and affecting the financial position of the processing industry. The terms of trade are thus likely to deteriorate, though favourable price trends in other export sectors should limit the overall fall to about 2 per cent;
- The fish catch is likely to be lower, with landings of cod in the vicinity of 365 000 tons, compared with 390 000 in 1987. In the case of capelin, the catch is expected to increase due to favourable marine conditions and a carry-over of quota allocations from 1987. The take of other species should be roughly unchanged. Overall, the total catch may decline by around 1 per cent in volume (constant-price) terms;
- Fiscal and monetary policies are more restrictive, with the growth of real government expenditures projected to slow and the tax burden to increase. The Central Bank has taken action to improve liquidity control and substantial surcharges have been imposed on foreign long-term borrowing;
- Wage controls have been imposed following the depreciation of the krona in May, strengthened by a complete wage and price freeze from 27th August to 30th September. To ensure that real interest rates did not rise as a result, the commercial banks and savings institutions were asked to reduce their interest rates (under the provisions of the 1986 Central Bank Act), while the Government was in the process of designing a comprehensive set of economic policy measures aimed at "securing adequate profitability in export- and import-competing industries and creating conditions for a lasting reduction in the rate of inflation".

Taken together, these factors imply falling real after-tax household incomes and accelerating price inflation. For the year as a whole, consumer prices may rise by around 28 per cent.

The outcome of the Government's wage restraint programme is as yet unclear, but the working assumption is that pay increases will be limited to around 14 per cent in the course of the year, and 21 per cent for the year as a whole[20]. Real earnings per capita will be unchanged, with a fall of about 1 per cent in real disposable income. As a result of the tax reform, the effective income tax rate is expected to rise and the average work week to fall. The depreciation of the krona has improved profits in the export sector but, under the assumption of a fixed nominal exchange rate, rising wages will progressively squeeze margins during the year. The real exchange rate will rise by about 9 per cent under present policies and profits could thus become negative again in the near future.

Overall, final domestic demand is projected to fall somewhat. Real private consumption could be fairly steady, as the carry-over effects of past income gains will probably offset the impact of lower post-tax incomes. The growth in residential investment should also slow, but the subsidisation of mortgage interest rates protects this sector from the direct effects of tighter monetary policy. Business capital spending is likely to be the weakest component of aggregate demand, possibly falling by around 5½ per cent as a result of a slower rate of asset formation in fish processing, agriculture and ferrosilicon. Government outlays should continue to grow (despite a tightening fiscal stance), with consumption purchases budgeted to increase by 2 per cent in real terms. Public capital spending is planned to rise even faster (4 per cent), largely due to new electrical and geothermal power projects.

Export production is likely to increase slightly despite a falling fish catch. Total fisheries output may rise by about 1 per cent. Aluminium production is expected to continue at last year's level, but output of ferrosilicon should recover relatively strongly. Agriculture and the woollens industry will probably remain depressed. Given a modest increase in revenues from fish farming and tourism, total export volumes may rise, but at a slower rate than last year. Slowing domestic demand and the large depreciation of the krona should check the growth in import volumes. Nevertheless, the real foreign balance will probably make a negative contribution to total output growth. Overall, any growth is likely to be small, and would be due to a build-up in stocks. In view of the expected deterioration in the terms of trade, the current account deficit may widen to 4½ per cent of GDP, and foreign indebtedness should remain at about 40 per cent of GDP under the fixed exchange-rate assumption built into the projection.

Near-term risks

Achieving better balance in the Icelandic economy depends importantly on developments in *the labour market*, and in particular on the effectiveness of wage controls. If these and the temporary ban on strike activity succeed in restraining nominal wage increases, the recent depreciation of the krona will improve both internal and external balance. However, the programme may be undermined by an overheated labour market. The ratio of vacancies to the labour force has fallen somewhat, but it remains high, and without a major easing in the excess demand for labour, there is a risk that employers and employees will search for ways to increase compensation beyond that targeted by the Government's wage guidelines. Given past experience, and taking into account the uncertainty about which existing contract provisions remain in force, wage drift could be considerable. If slippage were to be large, the programme might fail to prevent a further depreciation of the krona, which would increase the risk of a wage-price spiral.

Bringing inflationary pressures under control, and reversing the deterioration in the external account, depends critically on the stance of *fiscal and monetary policies*. There has been some tightening of policy this year. However, the objective of balancing the budget in 1988 has been shelved in the wake of the May devaluation, which will reduce revenues and increase debt interest payments. A further overshoot even appears likely. If the pattern of the past is repeated, the priority attached to maintaining full employment may lead to fiscal policy being insufficiently tight to reduce inflationary pressures on the labour market. Political pressure to reduce interest rates is also strong, and a number of factors still hinder the effectiveness of monetary policy. Controls on foreign short-term borrowing remain weak. Altogether, there is a risk that policies may fail to deal adequately with the underlying causes of persistent external and internal imbalances.

Medium-term considerations

Marine output and fisheries management

Growth prospects into the 1990s depend heavily on marine conditions and the development of the fish stocks. Since late 1983 conditions have been quite favourable in Icelandic waters. Atlantic water (as opposed to colder nutrient-poor Arctic water) has prevailed well to the north of the island, and plankton densities – the base of the

food chain – have been increasing. The drift of fish larvae to other fishing grounds has been limited. These environmental factors have raised the mean weight of the cod catch, and helped to support recruitment to the stock. In particular, the 1983-1984 year classes were above average. In recent years these conditions have yielded both large catches and a stable cod population. However, recruitment in the last three years (1986 to 1988) has been weak, and there is a high probability that the cod stock could fall significantly in the early 1990s if the current rate of exploitation is maintained. (Although such a decline could be partially offset by a migration of cod from Greenland waters.) The outlook for other demersal species is somewhat more favourable. Recruitment of haddock has been very strong of late, and stock estimates for saithe and halibut have been revised upwards. The capelin stock appears healthy, but the short lifespan of this species (and its dependence on little-understood environmental forces) makes any population projection highly uncertain. Conditions in the shrimp, scallop and other fisheries appear good.

These population and environmental factors make it likely that the total catch will remain roughly constant over the next few years, given current government policy. Since the introduction of stricter controls in the early 1980s, fishery management policy has been directed towards husbanding renewable resources for better long-term sustainable yields. In practice this strategy has meant limiting the catch, in order that a long-term decline in the fishable stock of cod and some other species could be checked. Catch targets are (approximately) met by setting take or effort quotas for individual trawlers. These quotas are determined by the Ministry of Fisheries, usually on the recommendation of the Marine Institute, a state agency that carries out extensive fish population studies and other research. Because current environmental and population conditions do not permit an increase in the catch consistent with long-run stability, the overall output of the fisheries is thus approximately fixed. However, it may be possible to increase the take of some under-exploited species (for example, shrimp).

There has been some discussion as to whether the cod catch should be scaled back temporarily, in order to reduce the future variability of marine production. After analysing the likely effects of three different medium-term rates of exploitation for cod (300 000, 350 000, and 400 000 tons annually), the Marine Institute proposed that the quota for 1988 be set at the lowest level. Such a catch was projected to increase the long-run stability of the catch, since it would lead to rapid growth of the spawning biomass. Rather than pursue this course, which would have been very costly in terms of immediate export revenues and politically difficult in the face of the recent deterioration in the terms of trade, the Ministry instead decided to keep the target unchanged at 350 thousand tons. This rate was projected to keep the spawning stock

roughly stable, although it was estimated that it would cause the fishable stock to fall by 10 per cent by 1990. In the event, the catch is likely to be in the region of 370 thousand tons for 1988.

Non-marine exports and diversification

Medium-term growth prospects in other export sectors are uncertain. The power-intensive aluminium and ferrosilicon industries are capacity constrained, and expansion plans are as yet only in the early stage of development. The decline in world oil prices (and to a lesser extent the rise in domestic labour costs) has reduced the competitive advantage provided by the country's hydroelectric resources. In other manufacturing sectors (such as woollens), conditions may remain depressed for some time unless there is a significant improvement in international competitiveness. However, fish farming and tourism – two industries which benefit from the relatively unspoiled and unpolluted nature of the country – could be exploited further, depending on the future course of wages and other profit factors. Other steps could also be undertaken which would promote the growth and stability of the economy. Foreign investment restrictions could be liberalised in an attempt to attract new capital and expertise. Such actions would promote the location of multinational subsidiary operations in Iceland. Above all, greater diversification would enhance macroeconomic stability, since few foreign firms would be willing to invest in the face of the recent volatility of wage costs and the exchange rate.

Progress towards industrial diversification, as well as economic productivity, is also affected by fisheries policy. Since quotas are not auctioned, potential efficiency gains are not being fully exploited. A market in quota rights could reduce both the number of boats and workers employed in the industry. Such a policy would increase productivity and free resources for other activities. However, it would also cause less desirable social changes. Because the combined marine industry (trawlers and fish processing) could be efficiently concentrated in a few locations, many smaller communities might lose their economic base. There would also be adjustment costs associated with the movement of workers into new occupations, and the difficult question of who should receive the revenue from the trading of fishing rights. These problems have so far prevented a rationalisation of the industry.

The terms of trade

Although the medium-term outlook for export volumes appears to be for slow growth, prospects for export revenues may be somewhat better due to a likely upward

trend in marine product prices. The recent weakening of fish prices in the U.S. and elsewhere is probably a temporary phenomenon reflecting the earlier depreciation of the U.S. dollar and a possible overshoot of long-run prices in 1987. Given a fixed world fishery output, the growth in world population and income over time should lead to a continuing increase in relative marine prices. In addition, the reputation of fish as a high quality source of protein with attractive health characteristics makes its demand income-elastic, which also helps to raise relative prices in the long run. Nevertheless, fish prices and the terms of trade have been quite volatile over the post-war period, and it is possible that these price gains might not emerge in the next few years. A further depreciation of the U.S. dollar would also affect the terms of trade, due to an imbalance in Iceland's trade with North America[21]. Overall, prospects for export revenues in coming years are likely to limit the room for expansion of total domestic demand and in particular private consumption.

Structural volatility

Uncertainty about the fish stock and variations in the terms of trade are part of a long-term structural problem which is a key element in the country's current difficulties. Iceland is regularly subjected to shocks that cause the economy to be unusually volatile, thereby complicating the task of policy. Due to fluctuations in marine production and world commodity prices, as well as slow progress in (and limited opportunities for) diversifying the economy, the variability of growth and inflation (but not unemployment) has been higher than in most OECD economies (Table 18), although the average growth rate has been among the highest in the area. This volatility makes the selection of appropriate economic policies difficult, in part because the external environment can change quickly and invalidate the underlying assumptions of past decisions. More importantly, policy choices are made difficult by the need to distinguish transitory from permanent shocks, since measures beneficial in one case can prove harmful in the other. Although important reforms have been carried out in recent years to improve the efficiency of macroeconomic instruments, there remains scope for new initiatives that could enhance the economy's ability to respond to changes in the economic climate.

Foreign borrowing

In a small economy, foreign borrowing may help to absorb transitory shocks, and to adjust to permanent ones. When faced with what is judged to be a temporary decline in the fish catch or weakening in marine product prices, it is quite reasonable

Table 18. **Economic performance and variability**
1965 to 1987

	Annual GDP growth		Annual inflation rate[1]	
	Mean	Standard deviation	Mean	Standard deviation
Iceland	**4.5**	**4.1**	**30.8**	**20.2**
United States	2.9	2.5	5.5	2.6
Japan	5.8	3.4	5.8	4.6
Germany	2.8	2.3	3.7	2.0
France	3.5	2.1	7.6	3.9
United Kingdom	2.2	2.1	8.9	5.5
Italy	3.5	2.5	10.7	6.5
Canada	4.2	2.3	6.2	2.8
Australia	4.0	5.1	8.2	3.8
Austria	3.2	2.0	4.9	2.1
Belgium	3.0	2.2	5.7	2.9
Denmark[2]	2.8	2.1	8.4	2.8
Finland	3.7	2.5	8.5	4.5
Greece[2]	4.6	3.5	12.4	8.1
Ireland[2]	2.9	2.9	10.8	6.0
Netherlands	3.2	2.4	5.3	3.0
New Zealand[2]	2.5	3.6	10.2	4.9
Norway	4.1	1.7	7.4	2.8
Portugal[2]	4.5	3.8	14.4	10.0
Spain[2]	3.8	2.8	11.8	5.3
Sweden	2.4	1.7	7.9	2.9
Switzerland	2.1	2.8	4.3	2.6
Turkey[2]	4.6	2.9	41.8	28.3
OECD, excluding Iceland				
Total	3.5	2.7	9.5	5.4
Small countries	3.4	2.8	10.8	6.0

1. As measured by the change in consumer prices.
2. For Denmark, Greece, Ireland, Portugal and Spain, calculations are based on 1965-1986 period; for New Zealand, 1965-1985, and for Turkey, 1973-1986.

Source : OECD Secretariat estimates.

to allow the current account to move into deficit, rather than to tighten monetary and fiscal policies. Although it is difficult in practice to judge whether a change in export earnings reflects temporary or lasting factors, it is clear that there are times when the country's foreign-exchange reserves should be allowed to fall and external indebtedness to increase. Symmetrically, if the terms of trade improve, a portion of the gain should be used to increase the country's net foreign assets, at least until it is reasonably certain that the favourable movement in world prices is not a passing phenomenon. It might therefore be argued that, in view of the favourable external environment, firmer demand management policies should have been pursued in 1986 and 1987 in order to achieve a current-account surplus. If this had been the case, there might have been less need for a tightening of policies in 1988.

The efficiency of macroeconomic controls

While the recent pattern of foreign borrowing and domestic demand has been partly a matter of political choice, it also has been inadvertent, in that fiscal and monetary instruments have not been as effective as they might have been. For example, the old tax system did little to slow aggregate demand when activity strengthened, because current income-tax receipts were based on past income. (See Part IV for a further discussion.) Likewise, the ability of the Central Bank to limit the growth of credit has been hindered by the inadequacy of instruments used to control liquidity. Contributing to this problem has been a variety of institutional arrangements through which the Government plays an important role in credit allocation. These include:

- The subsidisation and guarantee of a fixed real mortgage rate. Combined with inducements to (and quasi-requirements for) pension fund lending to the State Housing Fund, these subsidies have sheltered a major sector of the economy from changes in the stance of monetary policy;
- Although commercial banks are required to match assets and liabilities, without a strong profit motive, the publicly-controlled deposit money banks have probably been more willing to charge lower inflation and credit risk premiums on unindexed loans, to incur Central Bank interest penalities by being less liquid than required, and in general to extend credit;
- The quasi-public status of the investment credit funds has allowed them to obtain more favourable terms from foreign lenders because of implicit government backing.

By distorting the level and spectrum of interest rates, government involvement in the credit system has created both equity and efficiency losses, possibly including excessive investment in some sectors (see Part IV).

Foreign capital controls are another area in which reforms could strengthen the effectiveness of monetary policy. Part of the strong growth in investment and consumption in 1987 was a result of weak control over inflows, but not outflows, of capital. With firms free to borrow abroad (either directly or indirectly via banks and investment credit funds), rising domestic interest rates had a limited effect on domestic demand, once they rose above the level available abroad. Recent reforms have restricted this channel for satisfying credit demand. A 6 per cent surcharge has been placed on all new private long-term borrowing, and the investment credit funds face tighter rules covering the use of foreign credit. The extent to which foreign-currency indexed loans can be used to purchase imports has been reduced, and the Government has also increased the portion of Treasury borrowing funded

domestically. However, controls over short-term foreign borrowing remain weak, and it is possible that a tighter stance of monetary and fiscal policy could still be partially offset via short-term capital inflows.

In the absence of an appropriate fiscal and monetary stance, weak control over capital inflows makes for a worsening of both inflation and current-account trends. Tighter controls would, however, distort the allocation of capital and contradict the trend towards market liberalisation. An alternative would be for the authorities to move radically in the opposite direction and free both inflows and outflows of capital. This could impose greater discipline not only on the monetary and fiscal authorities but also on social partners. Attempts to stabilise the nominal exchange rate to hold down inflation, in a period of easy fiscal stance, overheating of the economy and widening current account deficit would require the emergence of a wider interest rate differential with abroad. If foreign official borrowing were to remain limited, interest rates would need to be high enough to induce sufficient private capital inflows to finance the current account deficit, contributing to a reduction in demand pressures, but at the expense of jeopardising investment growth and the productive potential of the economy. To obviate such allocative distortions and to avoid putting an excessive burden on monetary policy, the authorities could then be expected to place greater emphasis on fiscal and incomes policies in their adjustment strategy than has been the case so far. Apart from promoting greater coherence and efficiency of macroeconomic policy, a liberalisation of capital movements, as is indeed the intention of the authorities, would increase the chance that the traded and non-traded sectors of the economy would fare more equally under any stabilisation programme. Such a policy may nonetheless be more difficult to operate in a small open economy, with a relatively narrow export base and subject to wide terms-of-trade shocks, than in a large and diversified industrial country with sophisticated financial markets.

Market liberalisation

As discussed in the previous *OECD Survey of Iceland*, the 1980s have been a period of widespread deregulation. A number of government-imposed restrictions, such as interest-rate ceilings and price controls, had been almost entirely removed by 1986. Since that time, the country has continued to move towards a greater reliance on market mechanisms. Building on the 1986 reform of the domestic fish pricing system, two auction markets for fresh fish were set up in 1987. Although only 5 per cent of the total catch is at present sold at auction, these markets (more are planned) provide spot prices that are an alternative to the officially-set minimum prices. (Official prices are changed at regular intervals, according to movements in world

prices.) During 1987 auction prices stood well above minimum prices (on average 15 per cent), but this margin narrowed substantially as both frozen fish prices and industry profitability fell sharply in early 1988. The existence of spot prices provides two benefits to the industry. First, boat-owners and crews now have a more up-to-date measure of the market value of their output. Second, fish processors are better able to secure supplies, in the face of increased competition from containerised fish exports which are sold at auction abroad.

IV. The public sector

Overview

Iceland has a relatively small government sector and is lightly taxed in comparison with the European average. Yet the budget deficit and – until recently – the tax system have been important factors behind the country's inflationary problems. The authorities have relied on borrowing to finance many public-sector projects. For political and institutional reasons the tax structure has been inadequate. The system has been characterised by a lack of flexibility, which has generated budget deficits at times of economic upturns and led to an inefficient allocation of resources. The concerns that the system has aroused have not been the usual ones of discouraging labour force participation and capital accumulation, but rather over-investment and excess employment. The comprehensive tax reform introduced in 1987 should go some way to correcting these problems. But in common with some other OECD economies, Iceland still faces accumulated debt and debt interest liabilities *vis-à-vis* foreigners and a potential build-up of social security claims which could well strain the Government's finances over the longer term. The next section briefly reviews the institutional background. The following two sections deal respectively with the structure of public spending and the tax system. In the fourth section, the problem of government indebtedness and its medium-term implications are discussed.

Institutional background

The public sector has changed in the last decades, both institutionally and in terms of composition. The government sector has grown, albeit irregularly, while the relative weight of municipal governments has declined somewhat (Table 19). This development indicates a tendency towards the concentration of financial responsibility in the hands of the central authority which, in turn, reflects the smallness and

sparseness of the population[22]. The finances of central and local authorities are interrelated and the same tax base is used for direct taxes, which play the most important part in local government finance. A Municipal Equalisation Fund distributes a small part of the revenues from turnover tax to the various municipalities according to population, with special provisions for less wealthy areas.

Table 19. **General government spending by sector**

	Per cent of total outlays			Total outlays as per cent of GNP
	Central government	Local government	Social security	
1970	48.0	26.5	25.5	28.9
1975	59.5	21.7	18.9	36.9
1980	54.8	22.8	22.4	30.9
1981	53.9	23.1	23.0	31.4
1982	53.5	23.6	23.0	32.4
1983	57.3	21.3	21.4	33.8
1984	54.6	22.5	22.8	29.7
1985	57.0	21.1	22.0	32.3
1986	60.2	18.3	20.4	34.7

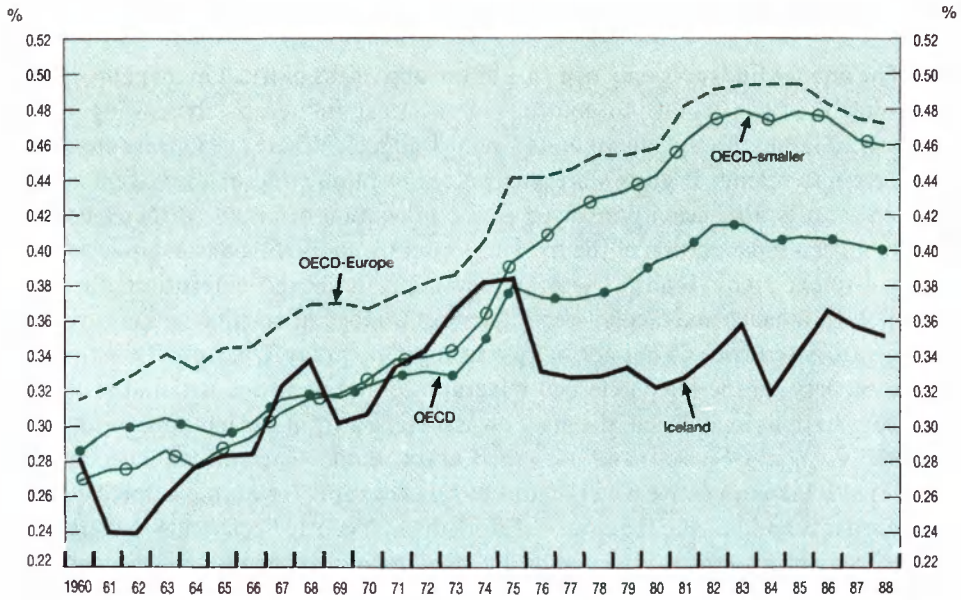
Source : National Economic Institute.

The annual Budget is only one part of the apparatus of fiscal management. The Government also attempts to control – or at least influence – borrowing in the economy at large, through an annual "Credit Budget". Where the Government does not borrow to relend, it gives state guarantees to public and private agencies and companies; it is also heavily involved in the allocation of credit, through both its ownership of a large portion of the banking system, and by its sponsorship of some of the investment credit funds. There are several state-owned enterprises, the state monopoly of tobacco and alcohol being the most important one in terms of revenues. Other state enterprises do not normally return profits to the Treasury. These include the postal service, the telephone and telegraph services and the national radio and television station. In addition, the state owns a large part of the banking system (see the 1987 Economic Survey) and – via the Central Bank – can still influence interest rates. It also takes an active part in industry by operating, for example, fertilizer and cement plants and herring factories[23]. Efforts have recently been made to shift some of these activities to the private sector, but the Icelandic economy, in common with many OECD economies, remains subject to a relatively high degree of state interference and control.

The structure of public spending

Although the ratio of public spending to GDP was not greatly different from that of the other OECD economies thirty years ago, the growth of the public sector remained relatively subdued during the 1960s and 1970s (Diagram 8). As a result, the share of general government spending in GDP was no more than 32 per cent in 1980, as compared to an average of over 39 per cent in the OECD at large. The 1980s brought Iceland's position somewhat closer to that in other countries. In contrast to fiscal retrenchment in Europe and elsewhere, in Iceland the share of public spending increased to over 35 per cent by 1987. Nevertheless, the general government sector (i.e. public administrations) continues to account for a significantly lower percentage of national output than is the case in most other industrialised economies. Only Japan and Turkey have smaller government sectors in proportion to their size.

Diagram 8. **GENERAL GOVERNMENT EXPENDITURE**
As a percentage of GDP



Source: OECD Secretariat estimates, based on SNA data.

The composition of government outlays has not changed much in recent years (Table 20), although as in most OECD economies, health expenditures have risen as a proportion of outlays. The largest budget programme, welfare spending, has remained roughly constant as a percentage of government spending, but in view of the rapid growth of wages and salaries in recent years its relative contribution to household income has fallen. The budget shares of most other major programmes, such as general administration and education, have also remained fairly steady. In contrast, with the gradual completion of infrastructure programmes, public investment has declined substantially, both as a share of government expenditures and in real terms. (The Government has, however, recently increased the level of investment in energy projects and public buildings.)

The percentage of total employment accounted for by the general government is currently about 17 per cent (Table 21). This is a lower government employment

Table 20. **General government expenditure by function**[1]

Per cent of total, accruals basis

	1980	1981	1982	1983	1984	1985	1986
General expenditure	8.9	8.5	8.6	8.4	8.2	8.1	8.0
General public services	4.1	4.0	4.0	4.1	4.1	3.9	3.9
Public order and safety affairs	4.8	4.5	4.6	4.3	4.1	4.2	4.1
Social affairs	56.5	56.6	56.2	55.3	56.2	59.1	62.1
Education	14.0	13.4	13.8	13.1	13.1	14.0	14.5
Health	17.7	17.9	18.0	19.5	19.0	18.8	20.5
Social security and welfare	16.3	16.9	16.6	14.9	16.1	16.6	16.7
Housing and community planning	4.0	3.7	3.0	3.4	3.2	4.9	4.7
Recreation and culture	4.4	4.7	4.7	4.4	4.7	4.7	5.6
Economic affairs	27.0	26.4	26.3	24.6	24.2	21.1	19.5
Energy[2]	3.0	2.8	2.1	2.8	3.3	2.5	1.9
Agriculture	8.8	8.2	9.0	7.6	6.1	5.9	5.9
Fisheries[3]	1.6	1.3	1.3	1.1	1.4	1.1	1.0
Industries	0.9	1.1	1.1	0.9	1.0	0.8	0.8
Transportation and communication	11.2	11.7	11.7	11.0	10.9	9.7	8.7
Other economic affairs	1.5	1.3	1.1	1.2	1.5	1.1	1.3
Other expenditure	0.6	0.9	0.9	1.1	0.5	0.8	0.2
Interest expenditure	5.1	5.7	6.1	8.9	9.1	9.1	8.5
Consumption of fixed capital	1.9	1.8	1.8	1.9	1.9	1.8	1.8
Total expenditure	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1. Including loan and relending account.
2. Corrected for Treasury takeover of energy sector's debt amounting to IKr 734.9 million in 1983 and IKr 5,066.1 million in 1986.
3. Corrected for repaid collected sales tax amounting to IKr 521.5 million in 1985 and IKr 654.0 million in 1986.

Source : National Economic Institute.

share than in most of Europe, but it is slightly bigger than the average for all OECD economies and has recently been increasing, in contrast to trends elsewhere. However, government wages and salaries appear to have grown much more slowly than total labour income during most of the 1980s. Largely as a result, the relative price of government consumption has tended to fall, so that the share of government consumption in total consumption has remained fairly stable (Tables 21 and 22).

Table 21. **General government employment and consumption**

	Public consumption		Public consumption as a per cent of total consumption
	Government employment as per cent of total labour force	Government wage bill as per cent of public consumption	
1975	13.9	56.5	22.0
1976	14.5	55.7	21.6
1977	15.1	59.8	21.8
1978	15.1	61.3	22.7
1979	15.6	61.2	22.9
1980	15.7	63.4	22.4
1981	17.1	63.0	21.9
1982	16.7	61.9	22.4
1983	17.0	57.8	22.6
1984	16.4	57.2	20.5
1985	16.5	57.2	21.0
1986	16.9	58.4	21.7
OECD Europe	18.1	. .	23.6
OECD	15.4	. .	21.7

Sources : National Economic Institute and OECD Secretariat estimates.

Table 22. **Changes in the relative price of public services**

Annual average percentage change

	Implicit price deflator				Change in the relative price of government consumption	
	Private consumption		Public consumption			
	1973-79	1979-85	1973-79	1979-85	1974-79	1980-85
Iceland	**40.1**	**49.5**	**41.6**	**45.6**	**1.5**	**−3.9**
Smaller European	10.5	12.8	11.0	10.0	0.5	−2.8
Total OECD Europe	10.2	10.1	11.1	9.5	0.9	−0.6
Total OECD	9.2	7.7	9.9	7.3	0.7	−0.4

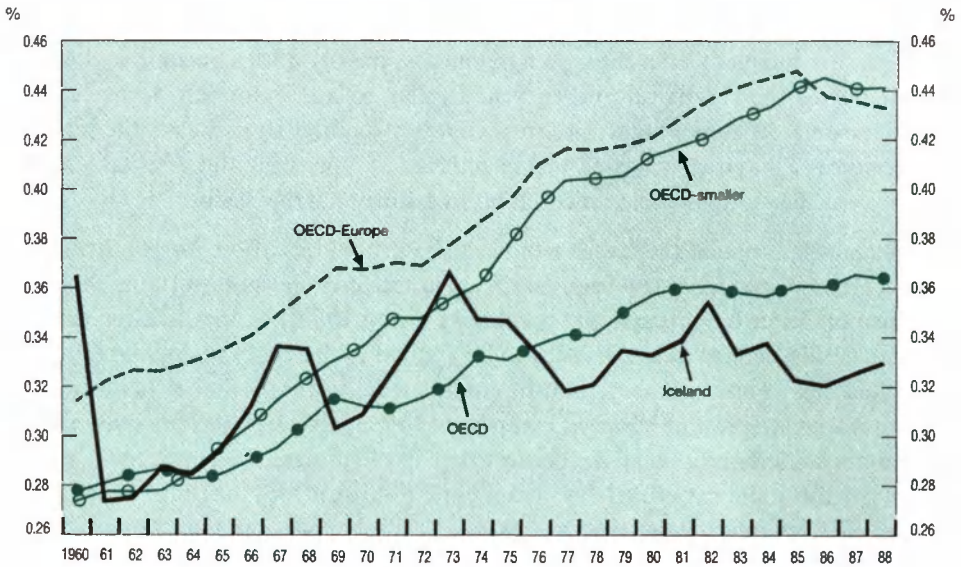
Source : OECD, *Historical Statistics 1960-1985*, Paris, 1987.

Tax reform

The pre-reform tax structure

The burden of taxation, though rising with the expenditure/GNP ratio, has remained low by international standards (Diagram 9). An important characteristic of the pre-reform tax system was the low incidence of direct taxes, which amounted to only 6 per cent of personal income and 13 per cent of Treasury revenue (Table 23). Personal income tax was levied according to a progressive rate scale, which had been reduced from a range of 25 to 50 per cent to 20 to 44 per cent by 1986 but applied to a restricted base. Company income tax was levied at a flat rate of 51 per cent but applied in practice to only a small part of profits. Four-fifths of Treasury revenue derived from indirect taxes, with a tendency for this ratio to increase. In the early 1960s there was a heavy dependence on import duties, which accounted for 50 to 60 per cent of Treasury revenue, but following the country's adhesion to EFTA in

Diagram 9. **GENERAL GOVERNMENT RECEIPTS**
As a percentage of GDP



Source: OECD Secretariat estimates, based on SNA data.

Table 23. **General government tax receipts**

	Property income	Direct taxes	Indirect taxes	Total current receipts
	Per cent of GDP			
1970	0.6	9.1	20.4	30.1
1975	0.7	7.9	25.4	34.0
1980	1.2	8.4	22.7	32.3
1981	1.1	8.1	23.7	33.0
1982	1.5	8.8	24.0	34.4
1983	1.9	7.8	22.0	31.6
1984	1.7	7.9	22.8	32.4
1985	2.0	7.0	21.9	30.9
1986	1.6	8.1	21.3	31.0
	Per cent of total tax receipts, 1986			
Iceland	**5.2**	**26.1**	**68.7**	**100**
OECD Europe	5.3	63.3	31.4	100
OECD	6.8	63.2	30.0	100

	Composition of Treasury revenue (per cent of total)					
	Direct taxes	Sales tax	Import duties	Excises	Other taxes	Other revenue
1986	14.5	37.9	13.2	5.3	20.7	8.4
1987	12.9	41.3	13.6	5.1	21.4	5.7
1988	13.2	48.3	9.5	2.8	21.1	5.1

Sources: National Economic Institute and OECD Secretariat estimates.

1970, and subsequent international agreements, import duties became less important. Prior to the recent reform, they had fallen to approximately 15 per cent of revenues, derived from a highly progressive rate structure. By contrast, the sales tax was levied at a single rate, which was introduced at 3 per cent and gradually rose to 25 per cent, being applicable, once more, to a fairly narrow base.

Iceland was one of the few economies to have tax indexation prior to the first oil shock. Hence the system has been relatively immune from the distortions caused to effective tax rates by inflation and fiscal drag. From 1972, the law dictated that the Budget should determine a tax index to be applied to tax brackets for the following year, and this came to be based on forecasts made by the National Institute. The system worked to prevent "bracket creep" up to 1982, although the Government was sometimes criticised for being too conservative in the projections of price and income increases. But it did not effectively compensate for distortions to the tax base caused by the effects of inflation on asset values, stock values, profits and interest payments. These complexities were dealt with by legislation passed in 1978, which became operative in 1980. The objective was that inflation adjustment be applied to the

business sector in such a way that firms should be able to maintain the real value of their equity (i.e. they should not be taxed on purely nominal income). Depreciation provisions are based on the original purchase costs revalued to the price of the year of depreciation; taxable capital gains were defined as the difference between the sale price and the original cost expressed in prices in the year of sale. Corresponding adjustments were made to prevent firms benefiting from the falling real value of their debt due to inflation. The decline in the real value of debt was counted as income. Where, because of krona depreciation, firms suffered a capital loss through having borrowed abroad, this was deductible from income.

The same rules applied to capital gains made by individuals, with two important exceptions. First, profits from the sale of automobiles and similar durables were non-taxable (except – in principle – where deliberately bought for resale); second, special rules applied to dwellings. Capital gains on a residential property held for five years were free of tax. While interest payments were not generally counted as deductible expenses, they were deductible on loans taken to acquire a dwelling, subject to a maximum amount.

The need for tax reform

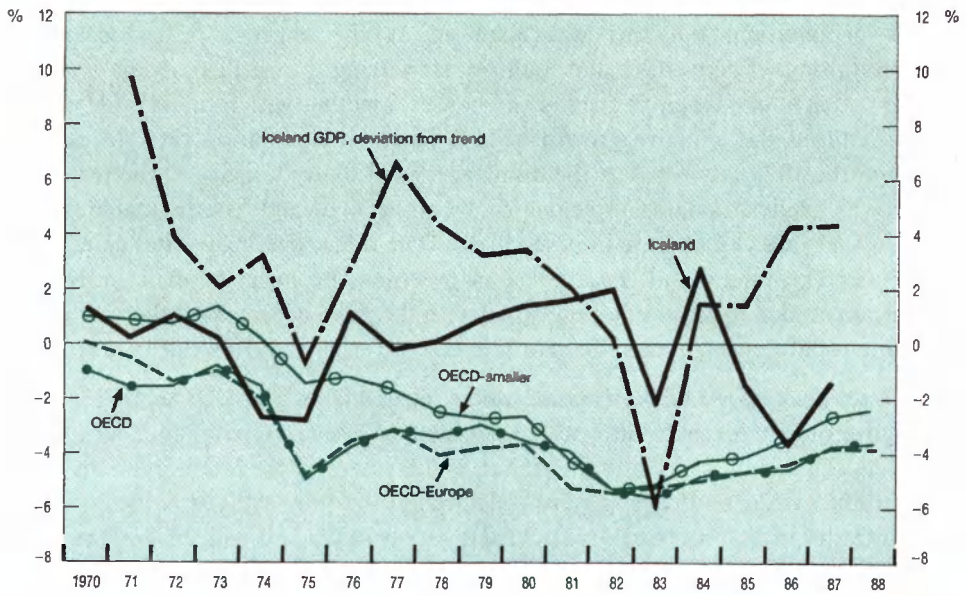
Fiscal indexation served to insulate the Icelandic tax structure from the negative effects of inflation, but this was achieved at the expense of reducing the revenue-raising effectiveness and built-in stabilizing properties of the system. Non-taxation of capital gains on cars and houses, together with interest relief on the latter, reduced the effective growth of taxes below the inflation rate. Moreover, although the 1978 law acted to the disadvantage of many taxpayers, the technical way in which indexation was implemented, by means of a single composite index (the building cost index) may have imposed biases. The rules covering capital gains were deliberately kept simple at the expense of precision. Because the exact degree of indexation needed to offset inflation varied with the price of the asset, there could be substantial differences in the effective rate of tax (or subsidy) on different assets.

Under the pre-1988 tax structure, where income taxes provided nearly a half of local government revenue but only 13 per cent of Treasury receipts, a degree of pro-cyclical instability was built into the revenue system by the fact that direct taxes and turnover taxes on business were collected on the previous year's income. The nominal value of that revenue was decided a year before it was collected on the basis of projected incomes. As a result, the effective tax rate tended to fall if incomes and prices rose faster than expected, pushing the general government accounts into deficit. The operational costs of the local authorities, for instance, rose according to

the rise in wages and general prices, so that if the rate of inflation was in excess of that built into the budget plans, cash balance problems would arise. Conversely, if inflation fell, the financial balance improved. During 1982 and 1983, when the rate of inflation exceeded expectations, a deficit arose; in 1984 the situation was reversed, while in 1987 the system again produced unexpected and destabilizing deficits, in the face of a strong cyclical acceleration of incomes and a deteriorating current account deficit (Diagram 10).

The Treasury accounts, being based preponderantly upon indirect taxes, have usually displayed a more normal cyclical response, with the notable exception of the last few years. As noted in Part II, the policy of stabilizing the exchange rate in order to keep down import prices created an imbalance in the indirect tax system. Sales tax was levied only on goods, with most services being exempted. Any increase in the relative price of services – which was substantial under the policy adopted – was

Diagram 10. **GENERAL GOVERNMENT NET LENDING**
As a percentage of GDP



Source: OECD Secretariat estimates.

bound to have a negative impact on real indirect tax receipts. Import tariffs which account for about 16 per cent of revenues would normally have risen with the growth of import volumes even if import prices fell in relative terms. But in 1987 this was offset by tariff reductions. In the past, Treasury finances have tended to improve with a pick-up in demand, acting as a counter-cyclical influence, but this did not occur in 1987.

The indirect tax system has also suffered from an increasingly complex mode of operation. Since one criterion for an efficient and non-distortionary tax is that it be levied as uniformly as possible on a wide base, with a minimum of exceptions, the Icelandic system was probably seriously detrimental from the point of view of overall welfare, even though the tax burden was low by international standards. The system became more complex in its operation, as exceptions were increasingly granted to the sales tax, both as a result of lobbying by various pressure groups and economic measures taken to influence price developments. Food, exports, industrial machinery and most services were all exempt from the sales tax. By 1987, the tax base of goods and services exempt from the sales tax is estimated to have been about 40 per cent. Although estimates of the "excess burden"[24] arising from the system are not available, the distortions to consumer preferences arising from the system must have been quite significant.

Whereas recent research has shown that OECD tax systems tend to provide a deterrent to labour force participation, the income tax system, with its zero-marginal rate on income earned during the year together with the possibility of untaxed capital gains, may have had the opposite effect in Iceland. Marginal labour income was at least untaxed and sometimes subsidised by the tax system. Hence the labour market has been characterised by a situation which, according to some criteria, could be described as over-full employment. Second jobs and overtime have raised the average work week to 52 hours for men – substantially above the OECD average – while male employment is measured at 92 per cent of the male labour force aged 15 to 64 (Table 24). The tax moratorium operating in 1987, by which income earned during the year was free of tax, is illustrative of the degree to which labour taxes may affect labour supply, particularly from those cohorts, such as students, where the opportunity arose to work tax-free for a year.

The tax system offered a number of incentives to save. Consumer debt interest was not deductible, while capital income (interest on general savings and government bonds and dividends up to a certain limit) was generally excluded from the tax base. Deductions allowed against mortgage interest payments and contributions to pension funds discriminated in favour of certain forms of saving, while investment in shares

Table 24. **Participation rates and the average working week**

	1960	1975	1980	1986	1986 OECD average
Participate rates[1]					
Male	90.4	97.0	93.3	92.0	83.3
Female	33.0	67.0	77.9	81.1	56.0
Average working week	1980	1983	1984	1986	
Male					
Manual	52.4	51.5	51.3	52.2	–
Skilled	50.5	50.5	50.8	51.9	–
Female	44.6	45.3	45.1	45.2	–

1. Labour force as a per cent of the population aged 15 to 64.
Sources : National Economic Institute.

was also deductible up to a ceiling. Moreover, the fiscal system may have helped generate an excess of investment over domestic saving which has led to an excessive build-up of overseas debt. Iceland has experienced a higher investment/GNP ratio than elsewhere, with the discount rate being kept artificially low by state regulation, and this has created doubts as to whether some of the investment projects undertaken would be viable if evaluated at realistic (i.e. world) interest rates. The real interest-rate differential between Iceland and abroad was negatively correlated during the 1970s both with the current account deficit and the difference between the Icelandic and European investment/GNP ratios, suggesting that interest rates were too low. The effects of the tax system *per se* are difficult to unravel from other channels of influence over saving and investment decisions, such as direct government subsidisation, government guarantees and negative real rates of interest. But the combination of the tax system and the investment credit funds, with their rigid allocation of funds and privileged access to saving, has probably been one of the main sources of misallocation of capital.

The misallocation was exacerbated by special rules on depreciation, which, with the indexation provisions noted above, ensured more-than-full depreciation in most cases. This is not exceptional. In most OECD economies, after-tax rates of return differ widely between various assets, due to tax provisions designed to encourage certain types of saving and/or investment spending; the differences between the effective rate of tax on equipment and structures is an important case in point. In general, investment incentives have tended to favour machinery, encouraging machinery-intensive production and leading to quite wide variations in after-tax rates of return. In Iceland, depreciation schedules of 8 per cent a year on ships, 10 per cent

Table 25. **Saving and investment**
Per cent of GDP

A. Gross saving and investment	1975		1980		1985	
	Iceland	OECD	Iceland	OECD	Iceland	OECD
Gross saving	22.6	21.5	23.8	22.0	15.3	20.2
Gross fixed capital formation	31.4	21.6	25.3	22.1	21.5	20.3
Of which :						
Residential investment	6.7	5.4	6.2	5.6	4.8	4.9
Current account	−10.6	0.1	−2.1	0.8	−4.4	−0.7

B. Breakdown of gross national saving	1980	1981	1982	1983	1984	1985	1986	1987
General government	8.0	8.1	8.2	5.5	8.3	5.3	5.0	3.8
Private sector	15.8	13.0	10.2	12.3	8.7	10.0	12.3	12.5
Total	23.8	21.1	18.4	17.8	17.0	15.3	17.3	16.3

Sources : National Economic Institute and OECD Secretariat.

on aircraft, and 12 per cent on other non-fixed assets were similarly generous. Moreover, the effective tax rate could be further reduced by a tax exemption on up to 40 per cent of taxable profits when paid into an investment fund created by the firm. Only 10 per cent of Icelandic companies actually paid tax.

Progress towards tax reform

Although no direct estimates of the marginal excess burden exist for Iceland, it appears safe to say that the complexity of the pre-1988 system made resource misallocation a problem. The recognition that, even in a relatively lightly-taxed economy, the tax system can lead to large welfare losses, made reform of the old tax structure, through the pursuit of a broader base and more uniform tax rates, an important economic goal. 1988 saw the introduction of a radically revised tax structure, simplifying the personal income and company tax structures and overhauling the sales and import duty systems. The Icelandic reforms share three basic characteristics with those being implemented in the OECD at large:

i) The reduction and simplification of personal income tax rates via a reduction in the number of tax rates;

ii) A rationalising and broadening of the expenditure tax base, through a switch to a general expenditure tax;

iii) A trend to base-broadening and greater neutrality in the corporate tax system.

Although the reforms so far implemented have been substantial, they are part of a programme which will see further changes in income and corporation taxes over the next few years.

The new income tax system will have just one rate, 35.2 per cent, composed of a state tax rate of 28.5 per cent and a municipal rate of 6.7 per cent. The tax base is gross earnings, without exemptions other than those concerning capital income and without either the standard deduction or most of the itemised deductions of the previous system outlined above. Unlike the old system, withholding is on the basis of current income (PAYE), made administratively simple by the single tax rate, since employers merely pay 35.2 per cent of earnings less the personal tax allowance. The negative tax elements of the system – child benefits and first-home benefits – are paid directly to recipients by the tax authorities. The final tax will be assessed on the basis of a tax return filed after the end of the year, taking account of earned income.

Legislation for the introduction of a value-added tax was approved in May 1988, to come into effect in July 1989. This followed several amendments to the sales tax in 1987, extending it to most professional services other than medical services and repealing most exemptions in the goods sector. The structure of the new VAT system will be very close to that in operation in Scandinavian countries (particularly the Danish one), with a single tax rate of 22 per cent levied on a broad base of goods and services. Exports, sales of aeroplanes and ships, international freight and sale of newspapers are the only items given full exemption (i.e. zero-rated). Social, educational and cultural activities, banking, insurance and sale of periodicals are also given exemptions but only on their own value added. The first steps have also been taken towards reform of the corporate tax structure. As part of the revenue-raising programme of the government, the maximum tax-free allocation to investment funds was lowered from 40 to 30 per cent of pre-tax profit, tax-free allocation to reserve funds was repealed and certain depreciation provisions for cars made less generous.

The reforms represent significant progress towards a more efficient tax structure, without sacrifice of social and equity objectives. The catalogue of potential benefits is substantial:

i) The revenue/GNP ratio will rise, helping to restore balance to the Treasury budget and reduce the recourse to Central Bank borrowing. This should help monetary and inflation control;

ii) The degree of "built-in stability" inherent in the tax system will be greatly enhanced, both by the changeover to a pay-as-you-earn system of income tax and by the extension of the indirect tax base to previously exempted

items; the ability of the economy to respond appropriately to exogenous shocks should thus be increased and the danger of inconsistencies developing between fiscal and exchange rate policies (such as occurred in 1987) reduced;

iii) The allocation of capital should be improved, but as noted above, the gains from greater tax neutrality have to be seen in the perspective of the whole apparatus of interest-rate subsidisation and distortion that remains, and the correspondingly large gains in efficiency which could be made by further financial liberalisation;

iv) Similarly, although the creation of a more neutral tax structure, with reductions in the top rate of income tax, should encourage greater saving, the extent of such saving also depends on real rates of interest which are affected by exchange rate, monetary and fiscal policies. A marked shift in saving behaviour might depend on reforming the controls on capital movements, to allow Icelanders to invest abroad;

v) A PAYE system should lead to a more efficient use of labour resources. The extent to which this will be so is difficult to estimate *ex ante*, but since hours worked and overtime are so high in Iceland, there would appear to be possibly substantial welfare and efficiency gains to be made through a re-orientation of demand towards greater expenditure on leisure services, with benefits for the diversification of the economy (including tourism).

Government borrowing and indebtedness

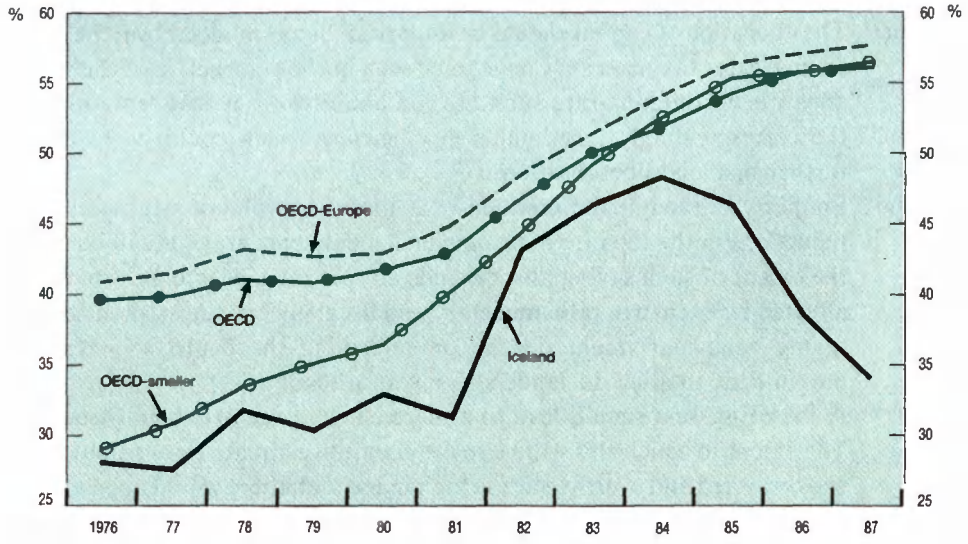
Trends in government indebtedness

From 1981 to 1984 government debt expansion in Iceland was one of the fastest in the OECD area (Diagram 11). General government gross liabilities rose by nearly 20 per cent of GNP to just under 50 per cent (Table 26). In 1982 alone, the general government debt/GNP ratio jumped by nearly 12 percentage points. It fell to 34 per cent in the three years to 1987, which is some way below the OECD average. The decline occurred despite the revenue deficits noted above and in the face of significant government borrowing requirements. Three factors appear to have been responsible for these trends:

i) Stabilization policies, aimed at sustaining incomes during the recession;

ii) Fluctuations in the growth of the economy, which increased the ratio up to 1984 and reduced it by 6 points from 1985 to 1987;

Diagram 11. **GENERAL GOVERNMENT GROSS DEBT**
As a percentage of GDP



Sources: OECD Secretariat estimates and Central Bank of Iceland.

iii) Price movements arising from changes in the real exchange rate of the krona[25]. The real appreciation of the krona temporarily reduced the krona value of general government foreign debt by 5½ percentage points between 1985 and 1987[26].

Because government savings certificates are indexed, bond-holders have been protected against variations in domestic inflation. However, in common with other OECD economies, the real yield has been high (8½ per cent in 1987), so that rising debt service costs have been a factor pushing deficits and the debt ratio up. The high cost of domestic debt issues, partly stemming from the illiquidity of the domestic bond market, has made the government reluctant fully to exploit domestic sources of finance and has led to a fall in domestically-held government debt issues in the 1980s, both as a ratio of GNP and as a proportion of Treasury borrowing. This was associated with a switch to foreign debt during the 1982 to 1986 period (Table 27), accompanied by increasing Treasury recourse to Central Bank borrowing in order to finance its cash deficit. Thus, in both 1983 and 1985 Treasury borrowing from the

Table 26. **Government debt**[1]

Per cent of GNP

	General Government	Public sector[2]	
		Direct	Including guarantees
1978	31.7	40.1	–
1979	30.3	37.9	–
1980	32.9	41.9	49.4
1981	31.2	40.2	47.8
1982	43.0	56.9	70.4
1983	46.2	61.9	76.6
1984	48.2	64.3	80.3
1985	46.4	60.8	76.1
1986	38.8	50.6	64.5
1987	34.1	43.3	55.5

1. Foreign debt is measured at year-end exchange rates, as per cent of annual GNP.
2. General Government, plus foreign borrowing of state enterprises.

Sources : Central Bank of Iceland and OECD Secretariat estimates.

Central Bank amounted to about 2 per cent of GNP respectively. A third of the Government's net borrowing requirement in 1987 was financed from the Central Bank (Tables 13 and 15). Since government borrowing from the Central Bank has helped expand the monetary base and sustain inflation in Iceland, attempts have been made to increase domestic private-sector financing, notably through the issue of Treasury bills. And progress has recently been made insofar as the commercial banks have begun to underwrite government bond issues. But as long as domestic real interest rates and the external debt/GDP ratio remain high, the temptation to rely on Central Bank borrowing will remain.

The expansion of the monetary base may be looked on as a form of revenue, often called "seigniorage"[27]. Insofar as inflation is a monetary phenomenon, it increases as the money supply expands, acting as a tax on money balance (an "inflation tax" on depositors, which is equivalent to a wealth tax to the extent that money holders do not receive a positive real rate of interest). Given the rapid expansion of the monetary base, the question arises as to whether this form of tax may not have played an important role in Iceland where reserve requirements were used to channel funds at subsidised rates to industry. A comparative estimate of the possible resource transfer involved is given in Table 28, which measures "seigniorage" as the change in the monetary base divided by GNP. The amount involved was equivalent to 4 per cent of GNP, on average, from 1979 to 1986. However, in Iceland the Central Bank has paid interest on required reserves, while, on the other hand, inflation has usually exceeded the growth of base money[28]. An alternative measure of seigniorage, calculated as the (negative of the) real interest rate *actually paid* by the Central Bank is given in

Table 28. This shows that the combination of monetary expansion and inflation has at times indeed provided an important revenue substitute in Iceland, amounting to almost 4 per cent of GNP in the 1982 to 1983 period[29]. However, more recently the amount involved has fallen dramatically, with the decline in inflation and changes in both interest rate policy and central bank accommodation. The cessation of automatic produce loan discounting has removed the resource transfer, while the Bank now indexes required reserves.

The fact that the general government spending/GNP ratio in Iceland is relatively low by international standards may also be misleading to the extent that the Government is heavily involved in direct lending for industry, public and private. If the borrowing of state enterprises is included, public sector indebtedness amounted to about 54 per cent of GNP in 1987. Moreover, most of the foreign borrowing of other public agencies, public companies and private enterprises is backed by state guarantees. If these liabilities are counted as government debt (on the ground that they have virtually the same economic significance as direct borrowing), total public-sector indebtedness reached a peak of 80 per cent in 1984 and was 55 per cent of GNP at the end of 1987 (Table 27). About three-quarters is foreign currency debt (this ratio having tended to increase), so that public sector foreign liabilities amount to just under 40 per cent of GNP (Table 28). A substantial part is re-lent to industry, via investment credit funds, three-quarters of it linked to the exchange rate, one quarter indexed to the domestic price level. Such loans could be counted as public-sector assets, reducing the Government's indebtedness in net terms. But it is doubtful that the net debt concept has much economic significance. The gross debt

Table 27. **Government lending and net debt**[1]

	1980	1981	1982	1983	1984	1985
Total debt, millions of kronur	5 538	8 329	18 086	34 308	46 864	63 696
Domestic loans, per cent	37.5	41.6	34.6	35.1	29.8	34.1
Foreign loans, per cent	62.5	58.4	65.4	64.9	70.2	65.9
Total lending, millions of kronur	2 232	3 866	7 937	14 942	20 158	31 545
Linked to domestic price level, per cent	22.0	24.9	23.2	23.2	24.7	. .
Linked to foreign exchange, per cent	78.0	75.1	76.8	76.8	75.3	. .
Net debt, millions of kronur	3 306	4 463	10 149	19 366	26 706	32 151
Linked to domestic price level, per cent	48.1	56.1	43.5	44.3	33.6	. .
Linked to foreign exchange, per cent	51.9	43.9	56.5	55.7	66.4	. .
Lending as per cent of debt	40.3	46.4	43.9	43.6	43.0	49.5

1. Central government plus state-owned enterprises. Stock figures at the end of each year.
Sources : State Accounting Office and Central Bank of Iceland.

Table 28. **Seigniorage and tax revenues**

	Percent of :					
	GDP				Total tax revenue	
	1973-78		1979-86		1979-86	
Growth of the monetary base[1]						
United States	0.5		0.5		1.5	
Germany	0.7		0.3		0.8	
France	0.3		0.6		1.3	
United Kingdom	1.0		0.2		0.5	
Italy	3.9		2.4		6.2	
Belgium	0.9		0.2		0.4	
Denmark	0.3		0.3		0.6	
Netherlands	0.6		0.4		0.9	
Norway	1.0		0.3		0.5	
Sweden	0.9		1.0		1.6	
Iceland	**2.8**		**3.7**		**10.3**	
Ireland	. .		0.8		2.5	
Greece	. .		3.5		9.1	
Portugal	. .		4.2		11.9	
Spain	. .		1.8		5.9	
	1982	1983	1984	1985	1986	1987
Negative of the real interest rate paid on cash and reserves (% GNP)						
Iceland	2.0	3.5	nil	1.8	0.2	nil[2]

1. Average of the change in the monetary base (line 14 in IMF International Financial Statistics) divided by GDP.
2. Reserves indexed.

Sources : OECD Secretariat calculations and S. Fisher, "Seigniorage and the case of national money", *Journal of Political Economy*, 1982, Vol. 90, No. 2, F. Giavazzi, *The exchange rate question in Europe*, Centre for European Policy Studies, February 1988.

figure is the more accurate reflection of the degree of government involvement in the Icelandic economy.

Medium-term debt trends

Tax reform should help to contain the propensity towards recurrent Treasury cash deficits, obviating the need for Central Bank borrowing as a revenue substitute. But a public-sector borrowing requirement will remain, to be financed from domestic non-bank sources or abroad. From the domestic side, credit available to the Government is likely to remain restricted, given the current allocation system, although the market for government securities could be improved. If government borrowing abroad (in the broadest sense, including guarantees) is to be contained, public sector borrowing has to be cut back – as is, indeed, the intention – and the overall domestic saving deficiency corrected. However, over the medium term, the

containment of the external debt problem will be complicated by the growing burden of interest payments. In net terms, these now amount to 3¼ per cent of GNP, which already implies the need for a significant trade and non-factor services surplus if the current account is to be balanced. Just to stabilize the external debt/GNP ratio probably requires a continuing trade surplus, since the real rate of interest (currently about 4 per cent) substantially exceeds the likely medium-term growth rate of GNP. A growth-interest rate margin of 2 percentage points would tend to raise the debt interest/GNP ratio by about ¾ per cent a year unless offset by a non-interest surplus of that amount[30]. Similar considerations apply to the net-of-interest budget surpluses needed to stabilize the government gross debt-to-GNP ratio.

As the need for budget discipline increases, in common with other OECD economies, Iceland faces the difficulty of an ageing population which will tend to put greater pressure on the budget over the next 30 years. During that time, the proportion of people over sixty-five in the total population is expected to increase from 10 to 17½ per cent (Table 29), expanding demands for social services and pensions. The population of working age is expected to remain relatively constant since the proportion of younger people will fall. And although pressures on the budget will rise, this will be partly alleviated by a redistribution of resources from the young to the elderly. But an increase in tax rates may be hard to avoid if budget balance is to be achieved, the more so since state pension schemes are inadequately funded.

Table 29. **Population projections**

	Growth rate of population % per annum	By age group			Dependency ratio[1]
		0-14	15-64	65+	
		% of total			
1960		34.9	56.9	8.2	75.8
1970	1.5	32.6	58.6	8.8	70.7
1980	1.1	27.5	62.6	9.9	59.7
1990	0.9	24.5	64.9	10.6	54.1
2000	0.9	20.1	67.9	11.9	47.1
2010	0.4	18.4	68.5	13.1	46.0
2020	0.2	16.7	65.9	17.4	52.0
Memorandum item :					
	Proportion of population aged 65 and over in 2020				
	Iceland	Germany	France	United Kingdom	United States
	17.4	23.5	21.2	18.7	17.2

1. Ratio of 0-14 and 65+ age groups to the population of working age.
Sources : Statistical Bureau of Iceland and OECD Demographic Data File.

Concluding remarks

Iceland now finds itself in a situation similar to that of several other smaller economies. Demand has been sustained through foreign borrowing. But sustained budget deficits have led to an increase in the stock of government debt, which has raised interest payments to the point where they necessitate cuts in other types of public and private spending. Fast economic growth and the real appreciation of the krona reduced the scale of the problem in 1986 and 1987. But the opportunity to cut back the government deficit was lost because of fiscal concessions and, in part, a revenue shortfall due to the inefficiency of the tax system. Revenue shortfalls were met, as in earlier years, by monetary finance. The reforms to the tax system should help avoid such shortfalls in the future, but medium-term adjustment requires peristent increases in domestic saving, to which appropriate fiscal policy remains the key.

V. Conclusions

In many respects, Icelandic economic performance in recent years has been exceptional. In the four years to 1987, real GDP grew in total by 21 per cent, far higher than the OECD average. Full employment was maintained and real per capita disposable income registered the fastest rise among OECD Member countries. Inflation, although remaining high by OECD standards, was on average substantially lowered and the burden of overseas indebtedness was also reduced. These developments owed much to an unusually favourable set of external circumstances and to the new approach to policy pursued since 1983. On the external side, rising fish catches went hand in hand with improving terms of trade in the wake of higher marine product prices and lower oil prices. Domestically, more efficient monetary instruments were adopted and much greater emphasis was placed on stabilising the exchange rate, with a view to providing a nominal anchor for the containment of inflation. Significant progress was also made in the field of microeconomic reform, leading to greater reliance on market mechanisms and improved resource allocation. Measures have included a lowering of production quotas and reduced subsidies to agriculture, extensive financial reforms, price deregulation and substantial changes to the tariff system.

Notwithstanding these positive achievements, there have been serious weaknesses in certain aspects of economic management, which have prevented the consolidation of the substantial progress made in unwinding imbalances up to 1986. In the face of strong external impulses and already-strained labour market conditions, demand-management policies were too lax, contributing to an overheating of the economy in 1987. Mounting demand pressures led to excessive real wage increases, a re-acceleration of inflation and a widening imbalance between domestic saving and investment. Consumer-price inflation, which had been brought down to a year-to-year rate of around 13 per cent in January 1987, returned to 25 per cent by year end, the rate prevailing in early 1985. The current-account balance which, for the first time in nearly a decade, had moved into a moderate surplus in 1986, relapsed into a considerable deficit in 1987 (3½ per cent of GNP). Finally, with

rapidly-rising domestic costs, adherence to a stable nominal exchange-rate strategy became more and more difficult as the real appreciation of the krona led to a marked deterioration of the profitability of the exposed sectors.

The economic environment both international and domestic has now changed substantially:

- Although the profitability of the export sectors has been largely restored following the two depreciations of the krona in February and May 1988, the period of rapid export growth has come to an end because of reduced fish catches and lower fish prices on world markets;
- Policies have been tightened somewhat and wage controls have been imposed in the wake of the May devaluation, with a view to avoiding a price-wage spiral.

The outlook is therefore for weak output growth in 1988, with possibly a limited fall in real domestic demand. But import demand is unlikely to fall sufficiently, or rapidly enough, to prevent a further widening of the current-account deficit and a renewed build-up of foreign indebtedness. Inflation prospects also remain very uncertain. There is some doubt, in particular, as to whether in the absence of a much tighter stance of policies and a rapid easing of labour-market pressures, sufficient wage moderation can be achieved. In this context, although useful, the recent introduction of a pay freeze can be only a temporary expedient. Failure to bring wages under control would lead to a renewed erosion of the profitability of the exposed sectors, again threatening the stability of the exchange rate and seriously complicating the task of policy. Iceland is thus faced once more with a difficult adjustment problem, very similar to the challenges it has been confronted with in the past. Although the burden of adjustment should be eased by the substantial structural reforms carried out in recent years, greater demand restraint is clearly needed to prevent the re-emergence of a price-wage spiral, to restore external balance and to check the rise in foreign indebtedness.

To achieve such restraint, the excessive rate of domestic credit expansion needs to be curbed. Owing to the financial reforms carried out in recent years, interest rates now respond more rapidly to changing external circumstances and the level of real interest rates has risen. However, a number of remaining deficiencies in money and credit control must be remedied if monetary policy is to play a more effective role in the adjustment process:

- Commercial bank access to Central Bank borrowing has to be further reduced to gain better control on the lending capacity of the banking system. Progress has been made in this area, notably through the abolition of

automatic produce loan rediscounting and a tightening of overdraft rules, but the Central Bank's control over the monetary process is still, by its own admission, inadequate. Against this background the recent measures to close loopholes in the implementation of the new liquidity rules are to be welcomed;

- Reform of the credit-allocation system, whereby certain sectors are given privileged access to funds at preferential lending rates, would seem to be needed. In this context, reform of housing finance would be desirable; at the moment, financing is supplied at subsidised rates, with pension funds having to provide funds at the expense of other sectors;
- Limitation of government loan guarantees, which allow financial institutions to borrow at relatively low rates abroad, is also called for. Large sections of industry have access to relatively cheap credit, thus escaping the effects of domestic monetary policies to some extent.

Overall, unless these remaining loopholes are closed the efficiency of monetary policy will remain limited. Moreover, although understandable in the context of the wage freeze, the recent intervention of the authorities in the interest-rate determination process is a set-back. Market mechanisms should be reactivated as soon as possible to ensure that real interest rates do not fall below appropriate levels.

Efforts to gain better control over money and credit developments require a greater commitment to fiscal discipline. A tighter fiscal stance is needed to reduce pressure toward Treasury borrowing from the Central Bank and abroad and therefore to check an important source of monetary expansion, both direct and indirect. It is also called for to reinforce the credibility of the fixed exchange-rate policy and to reduce inflation expectations. By raising tax revenue and strengthening the role of automatic stabilisers, the recent tax reform should contribute to limiting resort to monetary financing of the budget. However, the weight of past debt will continue to impose heavy debt-servicing commitments. Since the budget deficit target for 1988 is likely to be overshot, this reinforces the case for stricter control of non-interest budget expenditures. The fiscal problem is partly political in origin, stemming from the fact that too often the authorities have tried to achieve mutually incompatible goals. In present circumstances, achievement of a budget surplus would seem to be called for.

The tax reform is highly welcome. Besides enhancing the revenue base it should improve resource allocation. The Icelandic tax burden has been low by international standards but marginal tax rates were unnecessarily high because deductions and exemptions had eroded the tax base, direct and indirect. The efficiency gain is

difficult to quantify, but empirical results based on multi-sector general-equilibrium models for other countries' tax systems suggest that the earlier pattern of rates entailed quite severe welfare losses. The system was biased towards over-employment and excessive investment, the last factor contributing to balance-of-payments deficits and rising foreign debt. The greater "neutrality" imparted by tax reform (which, quite radically, introduces single-rate income and value-added taxes) should eliminate a significant part of the previous efficiency loss. A better allocation of resources (into leisure activities for example) would serve to raise the longer-run growth rate of the economy and to reduce its volatility. This would help to alleviate some of the mounting pressures on fiscal policy stemming from the growing burden of interest payments and the gradual long-term build-up of social security obligations as the Icelandic population ages.

Structural reform must also be pursued in other areas, with a view notably to raising the long-run growth potential of the economy, and broadening its base. Indeed, in Iceland as in many other OECD countries, the real rate of interest on foreign debt currently exceeds the potential growth rate, which may exert a destabilising influence in the future. Besides the need for fiscal restraint, this concern calls for the creation of an environment allowing returns on private borrowing to be maximised. In addition to the completion of the tax reform by extending it to the corporate tax structure, the following initiatives may be worth considering:

- Phased extension of the privatisation programme and increased opportunities for direct inward capital investment, with a view to improving the efficiency of capital allocation;
- Liberalisation of capital outflows which, in the Icelandic context, could increase saving opportunities;
- Further moves towards domestic market liberalisation, with an extension of the auction market for fish to include a market in fish quotas.

These should be seen as medium-term goals, to be achieved in such a way as to minimise their short-term adjustment costs. (In the case of capital flows, for instance, liberalisation could lead to excessive interest rate volatility unless accompanied by consistent fiscal policies.) The final objective should be to create a more diversified economy, based less on public and more on private initiative.

The impressive economic performance over the last few years, achieved in part through improved economic management, should not disguise the fact that the favourable opportunities to steer the economy towards a more stable and balanced less inflationary growth path have been missed. Demand management policies have been destabilising in recent years, though important progress has been achieved in the

field of structural reform. The country has now entered a stage where external economic conditions are likely to be less favourable and where the room for fiscal and monetary manœuvre is restricted by past actions. Against such a background, and in view of existing imbalances, adoption of stricter monetary and fiscal policies is essential in order to contain inflation and safeguard macroeconomic stability – and thereby social and economic goals – over the longer term. Clearer priorities and increased coherence in the formulation of both macroeconomic and structural policy objectives are therefore required, together with greater determination in their achievement.

Notes and references

1. Under current fisheries management policy, specie quotas are set to be consistent with long-run stability of the fish stocks. However, the flexibility of the system allows the take to deviate somewhat from the announced target. The use of effort quotas (i.e. number of days at sea), the ability to swap quota limits across years and species, and the exemption of small boats means that the announced ceilings are flexible in practice.
2. The average work-week per job was 52 hours for non-skilled manual workers employed full-time, and 44 hours for personnel in commercial establishments; actual hours worked per individual were even higher because of the prevalence of part-time second jobs. Data on the average work-week are difficult to compare internationally because of definitional differences. For example, Icelandic figures exclude vacation time, and thus overstate average hours worked relative to the estimates published by many other countries. Despite these differences, it appears clear that the work-week is unusually long by OECD standards, and it is the present Government's intention to reduce it (see Part IV).
3. Wage drift partially explains why pay-scale reform was part of the late 1986 wage negotiations. The structure of the labour market, combined with excess demand for labour, increased the pay differential between low-skilled workers and others during the 1980s. The 1986 agreement attempted to offset this trend by boosting minimum wages, but the initial jump in the relative position of low-skilled workers was eroded in the course of the year.
4. The weakness of residential construction in recent years is partly explained by the shift towards positive real interest rates and difficulties in obtaining mortgage finance. The latter problem was considerably eased in 1987 by an overhaul of the rules governing borrowing and lending by the State Building Fund, allowing it to receive resources from pension reserves.
5. Domestic firms are able to borrow abroad both directly, and indirectly via various government-sponsored investment credit funds. As the funds can usually obtain more favourable terms than individual borrowers from foreign lenders (because of the Government's implicit role as a credit sponsor), the funds provide a form of preferential credit to domestic firms.
6. In general, as long as the percentage real appreciation of the krona plus the growth rate of GNP is greater than the ratio of the current account deficit to outstanding foreign debt, the foreign debt-to-GNP ratio will decline.

7. SDR- and ECU-denominated savings bonds were offered for sale by the Government in November 1987, but since the liquidity of these instruments is low, they do not provide an effective device for speculation against the currency.

8. Certain export industries, such as aluminium and the fishing fleet, are partially protected against movements in the real exchange rate because a portion of their domestic costs are linked to world prices. For example, the cost of electricity to the aluminium smelter partially is a function of aluminium prices, and an important portion of seamen's compensation takes the form of catch shares.

9. The index measures the divergence of the exchange rate from its "equilibrium" level, which is defined as the price of foreign currency which would maintain the share of operating profits in value added constant in the traded goods sector, relative to a selected base period.

10. Central Bank of Iceland, *Annual Report 1987*.

11. See *OECD Economic Survey of Iceland* 1987 for a discussion of financial market deregulation.

12. Central Bank of Iceland, *Annual Report 1987*.

13. The real interest rate is calculated as $r = i - d^*$, where i is the nominal interest rate and d^* is the expected depreciation. For loans of shorter duration than twelve months the depreciation has to be raised to an annual rate, so the real interest rate would be more negative. However, since interest rates on such loans are variable, the interest rate would rise following the depreciation (by d^*m, where m is the weight of imports in the domestic price index) so that the effective real rate depends on the timing of the depreciation and the duration of the loan.

14. In general, the investment credit funds are required to keep a balanced foreign exchange position, but the housing fund is an exception. The student loan fund can also borrow in foreign exchange and lend in krona.

15. For a person borrowing *domestically* to finance an import, the price relevant to the asset is the cost of foreign currency, which determines the expected price of the import, while the price relevant to the liability is the credit terms index. Thus, if the price of foreign currency is expected to rise by more than the credit terms index (which is formed partly of domestic prices), the real rate of interest is effectively $r^d - (p^f - p^{cti})$, r^d being the domestic real interest rate; p^f being the change in the price of foreign currency (%); and p^{cti} being the change in the credit terms index. The term $p^f - p^{cti}$ measures the capital gain on the imported asset caused by the real depreciation of the krona.

16. Central Bank of Iceland, *Annual Report 1987*. In February, the procedures for indexing base money were also changed. Previously, only the portion of required reserves corresponding to indexed deposits at the Deposit money banks were indexed by the Central Bank, while all required reserves earned interest (at 11 per cent at the time). All required reserves are now fully indexed, but receive zero interest.

17. The base for the new liquidity ratio is somewhat larger than that for the reserve requirement; it covers deposits and other liabilities, including accrued interest, and Central Bank debt; eligible assets have a maximum maturity of three months. Net

liquidity is defined as cash, net deposits with the Central Bank, Treasury bills, three-month central bank paper, and net claims on other commercial banks.

18. Landsbanki Islands, *Annual Report 1987*. The penalty rate was 49 per cent in December 1987 – 10 per cent above the rate on non-indexed loans. This was not high enough to prevent a further deterioration in bank liquidity in the first quarter, when the liquidity ratio fell to 5.3 per cent – nearly 3 points below the required norm.

19. Borrowing from abroad has an expansionary impact on domestic liquidity insofar as it is not used to purchase foreign goods. A similar argument may apply to interest payments to the Central Bank, which should be deducted from the Government's overdraft to arrive at the expansionary impact of money finance. But even so, the impact of Central Bank lending to the Government was substantial.

20. In May the Government set the following schedule of maximum allowable wage increases, defined relative to the level of wages at the start of 1988: 10 per cent to 1st June; 12.75 per cent to 1st September; 14.45 per cent to 1st December; and 15.9 per cent to 1st March 1989.

21. The terms of trade can be expressed as

$$PX/PM = [a*e\$*PX\$ + (1-a)*eF*PXF]/[b*e\$*PM\$ + (1-b)*eF*PMF],$$

where PX, PX$ and PXF are export prices in krona, dollar, and non-dollar foreign currency terms, respectively; PM, PM$ and PMF are similarly defined for import prices; e$ and eF are the exchange rates for the dollar and other foreign currency *vis-à-vis* the krona; and a and b are the trade shares of the U.S. market in total Icelandic exports and imports. Letting all indices equal 1.0 in the base year, and assuming that U.S. and foreign prices are unaffected by a change in the exchange rate, the effect of a 1 per cent depreciation of the dollar on the terms of trade equals [b–a]. In 1987 exports to the U.S. accounted for about 17 per cent of all exports, while imports from the U.S. stood at about 7½ per cent. Accordingly, a 10 per cent devaluation of the dollar would decrease the terms of trade by nearly 1 per cent.

22. Iceland is divided into 223 municipalities of which 23 are classified as towns and 200 as rural districts. The number of inhabitants in the municipalities ranges from 12 to 90 000 and this disparity leads to great variance in the functions and finances of local government.

23. The state also owns several farms, which are run in conjunction with agricultural training colleges, and it also operates coastal shipping services. Local government is also heavily involved, particularly in fish processing, harbours, and water- and electrical-utilities, including geo-thermal power production. The latter expanded dramatically after the oil price increases of the 1970s.

24. In its simplest form the *marginal excess burden* imposed by the tax system is defined as:

$$\delta y/\delta t = \delta y/\delta \tau \,/\, (\delta \tau /\delta t) \quad \text{.....(marginal excess burden);}$$

where $\delta y/\delta \tau = \delta u/\delta \tau \,/\, (\delta u/\delta y) = \sigma$ .....(utility function);

and $\delta \tau = \delta t/y_o$ .....(marginal tax rate);

from $t = \alpha y^{\beta}$

The marginal excess burden here measures the welfare loss (δy) per unit of additional revenue (δt) arising from the loss of utility (δu) caused by an increase in the marginal tax rate $\delta\tau$. This can be expressed in terms of the tax elasticity (ß) (or equivalently, the marginal tax change needed to raise a unit of revenue):

$$\delta y/\delta t = \sigma\ ß/y \qquad \text{.....(marginal excess burden);}$$

The importance of this result is that the "excess burden" does not just depend upon the average rate of tax (which may be equated with the ratio of government spending to GNP), but also upon the relationship of the marginal to the average rate, which depends on the number of exclusions, deductions etc. More sophisticated "general equilibrium models" have shown that the greater the number of tax rates, the greater the number of distortions.

25. One of the advantages of a firm currency policy (noted in past Surveys) is that it reduces the resources needed to service external debt – or at least prevents them from increasing. In this respect, the build-up of debt during the early 1980s altered the perspective of economic policy-making, since any depreciation engineered to improve the profitability of export industries could adversely affect others with foreign debt exposure. A justification for the policy of stabilizing the nominal value of the krona could thus have been based, in part, on the benefits to be gained in terms of controlling the external debt burden.

26. The real exchange rate of the krona rose by 30 per cent between the end of 1985 and 1987. This was sufficient to "overvalue" the currency by about 15 per cent according the Central Bank's index of competitive position. This implies that the 1987 debt/GNP ratio was biased downwards by an unsustainably high real exchange rate so far as the foreign component was concerned.

27. The narrowest technical definition of seigniorage is the profit from coining money: the difference between the intrinsic and face values of coins. A wider definition would incorporate the profits of the central bank arising from the issue of all base money, calculated as the difference between what the bank pays on its liabilities (cash and reserves) and what it receives on assets (government overdrafts and treasury bills etc.) In economic terms the definition of seigniorage is the negative of the *real rate of interest on cash and reserves* (divided by GNP). On the basis that the central bank pays no interest on its liabilities and inflation increases at the same rate as the monetary base ($\Delta m/m = p$), this is equivalent to a tax rate of $(\Delta m/m)(m/y) = \Delta m/y$. By issuing monetary assets at a rate equal to (identical with) the inflation rate (p), the central bank is "taxing" money holders (the commercial banks, who pass the loss on to their depositors) at that rate. (See S. Fisher, "Seigniorage and the Case for a National Money", *Journal of Political Economy*, 1982, vol. 90, No. 2, 1982).

28. As noted above, such an estimate is only accurate and appropriate if the Central Bank does not pay interest on its debt (so that the real value of deposit liabilities falls at the same rate as inflation rises) and if the rate of inflation could be equated with the growth of the monetary base. These conditions are not met in Iceland and the latter may not apply in general. Like other tax bases, this one is affected by the tax itself – the amount of "seigniorage revenue" depends on the willingness to hold money balances, which will decline as inflation rises as Icelandic evidence will corroborate.

29. In this case, the definition is taken as $(r–p)(m/y)$, where r is the nominal rate paid on central bank liabilities and p is the actual rate of inflation.

30. The reasoning is as follows. Real interest rates in the OECD area are currently about 4 per cent (Table 7) and are likely to remain there. OECD inflation is about 3½ per cent, giving a nominal rate of 7½ per cent. On the other hand, in view of the need for conservative management of the fish stock, it would seem unrealistic to assume Icelandic growth higher than 2 per cent a year. With a constant real exchange rate, nominal growth of GNP (in foreign currency) may be put at around 5½ per cent. To stabilize the debt ratio at its current 45 per cent level requires a deficit averaging 2½ per cent of GNP (45%x0.055), which is ¾ per cent higher than the current net debt interest ratio.

Annex

Calendar of main economic events

1987

January

Following the December 1986 settlement between the Council of Employers and the Federation of Labour (representing most private sector workers), seamen in the fishing and merchant fleets go on strike for higher pay.

February

Monetary policy implementation changed in accordance with the new Central Bank Act which became effective in November 1988. Reserve requirements on bank deposits are lowered from 18 per cent to 13 per cent, and a minimum 7 per cent liquidity ratio for bank assets is introduced.

March

The Althing passes tax reform legislation. Beginning in 1988, the income tax will be levied on a pay-as-you-earn (PAYE) system.

The Central Bank raises the interest rate charged on bank borrowings from 15 per cent to 18 per cent.

Teacher and other public sector unions reject initial government offers and strike.

April

Public sector and bank employee unions settle for pay increases above that negotiated earlier by private sector workers.

General parlimentary elections are held, and the former centre-right coalition government is defeated. (No new government is immediately formed).

May

The Central Bank raises the rate charged on bank borrowings from 18 to 21 per cent.

June

The first fish auction market begins operations.

July

A new Government is formed, made up of the Independence Party, the Progressive Party, and the Social-Democrats. Its announced economic policies are broadly in line with those of the previous Government, with an emphasis on market solutions, liberalisation and privatisation. Chief policy targets are a further decline in inflation, elimination of the Treasury deficit within three years, external balance, and a reduction in foreign indebtedness. Provisional legislation aimed at checking domestic demand growth is immediately enacted, including: the abolishment of many exemptions to the 25 per cent sales tax; a new 10 per cent tax on many services; and a 1 to 3 per cent tax on foreign borrowing. As a partial offset, certain welfare and pension benefits are increased. The offered rate on indexed Treasury bonds is also increased by 1½ percentage points.

August

The Central Bank raises the liquidity ratio of banks from 7 per cent to 7½ per cent. The asset base of the ratio is also broadened (roughly equivalent to an additional ½ per cent increase in the ratio).

September

The regulations governing foreign borrowing by leasing firms are tightened. Foreign funds can no longer account for more than 70 per cent of the purchase price of the leased item, or more than 60 per cent if such credit carries a guarantee or represents relent funds of a domestic bank, insurance company or public investment credit fund.

October

The Government presents its proposed 1988 fiscal budget to the Althing. Instead of balancing it over a period of three years, the proposal was based on balance being attained in 1988. As part of the package, the Government proposes further tax reforms, including a simplification of business taxation and the tariff system.

Banks are authorised by the Government to accept foreign-exchange linked deposits, and the Government introduces foreign-exchange linked Treasury bonds.

December

The Althing passes the 1988 fiscal Budget.

The two largest woollens manufacturers merge.

Fish prices on the U.S. market peak.

1988

January

PAYE income tax system and new tariff schedules take effect.

The Althing passes legislation authorising the continuation of the fish quota system.

February

The National Federation of General Workers signs a new contract. Wages are increased 10 per cent immediately, and 18 to 20 per cent during the 12-month contract period.

As part of the new wage agreement, the krona is devalued 6 per cent, and the Government promises to pursue future exchange rate stability. Domestic interest rates are lowered, but the tax on foreign borrowing is doubled to 6 per cent. The Government tightens controls on external borrowing by financial institutions.

May

The krona is devalued by 10 per cent, and the Central Bank is authorised to devalue the currency by an additional 3 per cent if deemed necessary.

In order to increase the effect of the devaluation on business profitability, wage controls are introduced. Wage increases in contracts not yet settled are limited to those already signed by other unions. All labour contracts are extended to April 1989. During this period, strikes and other actions in support of pay are prohibited.

The Government bans the direct indexation of the principal of financial instruments with maturities of less than two years.

The Althing approves the conversion of the sales tax to a VAT system, to take effect in the middle of 1989.

June

New rules concerning foreign-exchange-related assets and liabilities introduced as part of a move towards stronger surveillance of foreign borrowing. New rules concerning liquidity ratios introduced, implying a shrinkage of the liquidity ratio base by 10 to 11 per cent.

August

New marketing arrangements for government bonds introduced, by which the banks agree to underwrite a certain amount of bonds per month until the end of the year. A wage and price freeze imposed from 27th August to 30th September. The Government requests the Central Bank in co-operation with the Ministry of Commerce to discuss interest rate developments with commercial banks and savings institutions. If the discussions do not lead to an agreement on satisfactory interest rate reductions then the Central Bank is instructed by the Government to unilaterally determine nominal interest rates on the basis of provisions in the Central Bank Act of 1986.

September

Government resigns on 17th September. The main reason for its resignation was political conflict within the Government and somewhat differing views on the conduct of economic policy over the near term. On Friday 16th September, the Prime Minister proposed measures aimed at reducing inflation and improving profitability in the export industries. These proposals proved unacceptable to the other parties and led to the resignation. A new coalition Government consisting of the Progressive Party, the Social Democratic Party and the People's Alliance emerges.

STATISTICAL ANNEX

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

Kr. million, current prices

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987[1]
Private consumption	3 659	5 514	8 842	14 393	23 088	39 674	54 551	75 830	97 970	132 350
Public consumption	1 074	1 638	2 546	4 039	6 644	11 559	14 058	20 136	27 218	36 320
Gross fixed asset formation	1 546	2 248	3 927	5 929	9 251	14 127	18 306	24 154	29 030	38 890
Expenditure on final domestic use	6 279	9 400	15 315	24 361	38 983	65 360	86 915	120 120	154 218	207 560
Change in stocks of export products	–39	51	80	253	913	–1 070	786	–978	–2 094	–184
National expenditure	6 240	9 451	15 395	24 614	39 896	64 290	87 701	119 142	152 124	207 376
Exports of goods and services	2 482	3 810	5 746	8 724	12 714	27 078	34 295	49 819	63 125	73 466
Imports of goods and services	2 242	3 631	5 648	8 936	14 329	25 275	33 871	49 051	56 342	74 496
Gross domestic product (market prices)	6 480	9 630	15 493	24 402	38 281	66 093	88 125	119 910	158 907	206 346
Net income from abroad	–161	–244	–411	–811	–1 495	–3 066	–4 554	–5 584	–6 229	–6 203
Gross national product	6 319	9 386	15 082	23 591	36 786	63 027	83 571	114 326	152 678	200 143
Depreciation	753	1 138	1 806	2 843	4 656	8 634	10 620	14 240	18 370	22 100
Net national product (market prices)	5 566	8 248	13 276	20 748	32 130	54 393	72 951	100 086	134 308	178 043
Indirect taxes	1 454	2 172	3 520	5 778	9 202	14 486	20 062	26 341	33 964	45 296
Subsidies	218	373	490	762	1 392	2 204	2 389	3 491	4 228	4 787
Net national income	4 330	6 449	10 246	15 732	24 320	42 111	55 278	77 236	104 572	137 534

1. Provisional.

Source: National Economic Institute.

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

Kr. Million, constant prices

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987[2]
	1980 prices									
Private consumption	8 317	8 560	8 842	9 523	10 059	9 413	9 671	10 155	10 815	12 329
Public consumption	2 364	2 493	2 546	2 733	2 902	3 039	3 045	3 234	3 444	3 582
Gross fixed asset formation	3 433	3 440	3 927	3 965	3 945	3 461	3 768	3 807	3 722	4 308
Expenditure on final domestic use	14 114	14 493	15 315	16 221	16 906	15 913	16 484	17 196	17 981	20 219
Change in stocks of export products	–130	60	80	170	357	–207	122	–85	–201	–39
National expenditure	13 984	14 553	15 395	16 391	17 263	15 706	16 606	17 111	17 780	20 180
Exports of goods and services	5 265	5 595	5 746	5 825	5 261	5 802	5 976	6 631	7 043	7 332
Imports of goods and services	5 352	5 484	5 648	6 056	5 988	5 648	6 174	6 775	6 792	8 327
Gross domestic product (market prices)	13 897	14 664	15 493	16 160	16 536	15 860	16 408	16 967	18 031	19 185
Net income from abroad	–386	–368	–411	–495	–580	–657	–766	–836	–889	–964
Gross national product (market prices)	13 511	14 296	15 082	15 665	15 956	15 203	15 642	16 131	17 142	18 221
Effect of changes in terms of trade	646	157	0	60	21	238	261	238	547	877
Gross national income[1]	14 157	14 453	15 082	15 725	15 977	15 441	15 903	16 369	17 689	19 098

Note: Estimates of real income coincide with output in real terms on the assumption of unchanged terms of trade. Due to particularly strong fluctuations in Icelandic terms of trade national expenditure in real terms may deviate substantially from real gross national product without adverse effects on the balance of payments. This is explicitly introduced in the Icelandic national accounts, as shown above. The item "Effect of change 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. Gross national product + effect of changes in terms of trade.
2. Provisional.

Source: National Economic Institute.

Table C. **Production and employment**

		1979	1980	1981	1982	1983	1984	1985	1986	1987[3]
Fisheries and fish processing										
Export production:										
Value, current prices	Kr. mill.	2 115	3 404	5 262	7 137	12 564	16 562	23 937	32 605	40 220
Volume, constant prices	1980 = 100	90.0	100.0	101.0	85.7	77.6	88.3	95.4	105.1	111.5
Fishing fleet[1], end of year:										
Trawlers	GRT	40 269	42 265	45 258	47 944	48 478	50 801	50 844	50 569	51 380
Motor boats	GRT	63 891	64 222	63 313	63 904	63 294	62 046	61 750	61 822	66 072
Total	GRT	104 160	106 487	108 571	111 848	111 772	112 847	112594	112 391	117 452
Employment in fish processing	1980 = 100	90.3	100.0	102.9	99.9	103.9	103.8	97.9	99.6	–
Agriculture										
Production: Volume, 1980 prices	Kr. mill.	108.8	100.0	99.3	98.8	97.7	101.6	105.1	103.2	102.4
Capacity:[2] Cultivated grassland	1 000 hect.	125.7	127.2	129.0	130.1	131.1	132.1	133.4	134.1	134.5
Sheep	1 000 heads	769.8	827.9	794.6	747.7	711.9	714.4	709.3	675.5	624.3
Cattle	1 000 heads	57.2	59.9	60.4	64.4	68.5	72.7	72.9	71.4	69.0
Manufacturing (excl. fish processing)										
Production, volume	1980 = 100	96.5	100.0	99.8	105.1	105.1	109.9	111.5	113.6	118.3
Employment	1980 = 100	99.4	100.0	101.2	102.7	102.2	105.6	111.7	110.5	–
Dwelling construction										
Started	Number	1 932	1 758	1 648	1 829	1 631	1 736	1 346	1 105	1 184
Completed	Number	2 045	2 237	1 623	1 924	1 711	1 601	1 602	1 462	1 642
Under construction, end of year	Number	4 970	4 491	4 516	4 421	4 341	4 476	4 220	3 863	3 405

1. Including whale-catchers, excluding open boat.
2. At the end of year.
3. Provisional.

Sources: Central Bank of Iceland and Direct Icelandic communications to the OECD.

Table D. **Gross fixed asset formation**

Kr. million, current prices

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987[1]
Gross fixed asset formation, total	1 546	2 248	3 927	5 929	9 521	14 127	18 306	24 154	29 030	38 890
Classification by end-use:										
Industrial asset formation	670	926	1 567	2 396	3 775	5 888	7 911	12 009	15 810	21 290
Agriculture	92	79	183	212	409	621	978	1 518	2 100	2 300
Fishing	107	167	217	376	518	781	839	910	2 648	4 100
Fish processing	64	105	148	222	360	521	785	1 137	1 360	1 500
Manufacturing other than fish processing	191	297	407	568	798	1 264	2 020	3 023	3 460	4 230
Transport equipment	77	99	283	470	593	832	790	1 734	1 400	1 800
Commercial buildings, hotels, etc.	85	108	176	308	613	1 084	1 219	1 803	2 470	3 950
Various machinery and equipment	54	71	153	240	484	785	1 280	1 884	2 372	3 410
Residential construction	375	588	964	1 317	2 251	3 495	4 714	5 276	5 585	7 230
Public works and buildings	501	734	1 396	2 216	3 225	4 744	5 681	6 869	7 635	10 370
Electric power, generation and distribution	153	236	507	797	1 159	1 510	1 550	1 146	1 040	1 150
Geothermal heating and water supply	91	140	267	370	330	375	570	871	840	1 120
Communications	159	227	403	649	1 061	1 764	2 229	3 062	3 715	5 200
Public buildings	98	131	219	400	675	1 095	1 332	1 790	2 040	2 900
Classification by type of assets:										
Machinery and equipment	395	579	1 017	1 618	2 274	3 418	4 734	7 522	9 691	13 520
Machinery and other equipment	318	480	734	1 148	1 681	2 586	3 944	5 788	8 291	11 720
Transport equipment	77	99	283	470	593	832	790	1 734	1 400	1 800
Buildings and other construction	1 151	1 669	2 910	4 311	6 977	10 709	13 572	16 632	19 339	25 370
Residential buildings	375	588	964	1 317	2 251	3 495	4 714	5 276	5 585	7 230
Non-residential buildings	346	478	683	1 119	2 035	3 337	4 277	5 843	7 698	10 850
Other construction	430	603	1 263	1 875	2 691	3 877	4 581	5 513	6 056	7 290

1. Provisional.

Source: National Economic Institute.

Table E. **Gross fixed asset formation**

Kr. million, constant prices

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987[1]
	1980 prices									
Gross fixed asset formation, total	3 433	3 440	3 927	3 965	3 945	3 461	3 768	3 807	3 722	4 308
Classification by end-use:										
Industrial asset formation	1 440	1 390	1 567	1 617	1 627	1 443	1 643	1 927	2 051	2 429
Agriculture	196	116	183	142	174	149	207	252	287	272
Fishing	228	246	217	256	226	196	173	147	330	450
Fish processing	136	158	148	152	157	131	161	177	168	164
Manufacturing other than fish processing	413	447	407	386	344	308	402	459	417	453
Transport equipment	155	148	283	312	254	191	150	246	177	212
Commercial buildings, hotels, etc.	194	169	176	204	260	269	247	277	304	413
Various machinery and equipment	118	106	153	165	212	199	303	369	368	465
Residential construction	858	915	964	870	952	865	955	809	688	757
Public works and buildings	1 135	1 135	1 396	1 478	1 366	1 153	1 170	1 071	983	1 122
Electric power, generation and distribution	341	361	507	537	497	366	311	175	128	121
Geothermal heating and water supply	208	218	267	245	140	93	115	133	104	117
Communications	362	354	403	432	444	423	474	488	500	580
Public buildings	224	202	219	264	285	271	270	275	251	304
Classification by type of assets:										
Machinery and equipment	826	855	1 017	1 104	993	835	999	1 227	1 276	1 600
Machinery and other equipment	671	707	734	792	739	644	849	981	1 099	1 388
Transport equipment	155	148	283	312	254	191	150	246	177	212
Buildings and other construction	2 607	2 585	2 910	2 861	2 952	2 626	2 769	2 580	2 446	2 708
Residential buildings	858	915	964	870	952	865	955	809	688	757
Non-residential buildings	774	741	683	739	858	823	866	895	948	1 135
Other construction	975	929	1 263	1 252	1 142	938	948	876	810	816

1. Provisional.

Source: National Economic Institute.

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

US $ million

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Current balance	–15	–45	33	–21	–69	–140	–260	–53	–129	–119	17	–188
Long term (exc. spec. trans.)	46	98	53	94	158	202	232	92	115	155	149	175
a) Private	5	22	23	29	80	124	90	–8	30	61	70	162
b) Official	41	76	30	65	78	78	142	101	84	94	79	13
Basic balance	22	50	83	71	89	56	–25	40	–15	34	166	–13
Non-monetary short-term capital	–19	–25	–38	5	11	24	–14	–42	37	122	–51	96
Errors and omissions	–	–	8	–33	–48	–24	–56	–4	–29	–53	–29	–93
Balance on non-monetary transactions	3	24	53	45	53	57	–95	–6	–7	103	86	–10
Private monetary institutions short-term capital	16	6	–1	–2	–4	1	–8	14	–23	8	–9	–6
Balance on official settlements	19	30	52	43	49	58	–103	8	–30	111	77	–16
Use of IMF credit	30	–	–12	–16	–24	–12	18	1	–	–	–	–
Miscellaneous official accounts	–21	–15	–3	–4	–13	7	–	–5	7	–47	8	–16
Allocations of SDRs	–	–	–	3	3	3	–	–	–	–	–	–
Change in reserves (+ = increase)	27	15	37	26	13	56	–85	4	–22	64	85	–32
a) Currency assets	31	15	39	22	5	55	–72	2	–22	64	85	–30
b) Reserve position in IMF	–	–	–	7	5	–1	–11	4	–	–	–	–
c) Special Drawing Rights	–4	–	–1	–3	3	2	–2	–2	–	–	–	2

Source: OECD Secretariat.

Table G. **Central government income and expenditure**

Accruals basis

Kr. million

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987[5]
Current revenue	1 637	2 480	3 929	6 304	10 328	16 282	22 088	28 746	40 177	50 700
Direct taxes	280	462	649	983	1 800	2 614	3 230	3 698	6 253	7 000
Indirect taxes[1]	1 327	1 966	3 179	5 203	8 230	12 868	17 746	23 646	30 460	40 600
Other	29	52	101	118	299	800	1 112	1 403	3 463	3 100
Current expenditure	1 354	2 077	3 118	5 080	7 910	14 229	17 238	26 019	36 170	46 900
Purchase of goods and services[2]	634	932	1 418	2 290	3 552	6 484	7 887	12 295	18 414	23 900
Current transfers and subsidies	720	1 145	1 700	2 790	4 358	7 745	9 351	13 724	17 756	23 000
Gross saving	283	403	811	1 224	2 418	2 053	4 850	2 727	4 007	3 800
Gross fixed asset formation	96	143	288	440	782	1 238	1 592	1 758	1 896	2 600
Surplus on current and fixed investment account	187	260	523	784	1 636	815	3 258	969	2 111	1 200
Lending, net[3]	23	–35	77	–10	683	–245	1 063	550	–8 934	100
Net capital transfers to other sectors	202	272	384	609	787	2 250	1 643	2 840	8 308	2 800
Overall balance[4]	–38	23	62	185	166	–1 190	552	–2 421	2 737	–1 700

1. Including employers' social security contributions.
2. Including interest.
3. "–" = net lending.
4. Net change in floating debts and cash balances.
5. Estimate.

Source: Central Bank of Iceland.

Table H. Fish catch, wages and prices

	Fish catch (thous. metric tons)					Wages and prices (1980 = 100)								
	Total	White fish, etc.	Herring	Capelin	Shrimp, lobster, shell-fish	Hourly wage rates, unskilled workers[1]	Cost of living index			Building cost	Export prices of fish products[2]			
							Total	Food and beverages	Home-ownership		Fresh and iced fish	Frozen products	Salted products	Fish meal and oil
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1978	1 566	544	37	967	18	46	43.4	45.6	45.3	44	50.9	46.3	42.4	59.3
1979	1 649	622	45	964	18	66.4	59.7	60.5	65.2	64	68.6	74.3	64.3	63.8
1980	1 514	680	53	967	21	100	100.0	100.0	100.0	100	100.0	100.0	100.0	100.0
1981	1 441	738	40	642	21	149	151.0	156.2	153.4	152	123.8	145.0	170.6	152.5
1982	788	695	56	13	24	224	228.0	227.4	231.4	237	224.5	240.1	261.0	190.5
1983	839	616	59	133	31	335	420.0	440.1	388.1	405	360.2	501.1	448.9	511.6
1984	1 536	579	50	867	40	400	543.0	576.5	463.8	495	489.1	575.1	522.2	548.6
1985	1 680	594	49	993	44	530	718.0	792.4	597.9	654	805.4	788.1	727.4	597.5
1986	1 656	637	66	898	55	661	871.0	965.9	768.4	814	104.5	968.4	1 028.4	599.9
1987	1 619	668	75	804	54		1 035.0	1 128.7	900.0	958	116.9	113.6	1 281.5	620.6

1. Weighted averages.
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	Developing countries		Total	Europe		USA	Eastern Europe	Developing countries
			EEC	Others						EEC	Others			
1976	39.2	32.3	17.0	7.6	4.1	5.4	1.5	33.6	29.1	10.9	7.9	9.7	3.4	1.1
1977	50.7	41.5	24.0	10.7	3.3	6.2	3.0	42.7	34.5	13.4	7.3	12.9	5.2	3.0
1978	56.7	47.6	26.7	12.9	4.0	5.8	3.2	54.2	43.6	17.9	8.6	15.9	4.2	6.4
1979	68.8	57.3	32.0	16.0	4.5	8.7	2.9	65.8	58.1	26.4	11.1	18.4	5.3	2.4
1980	83.4	70.8	36.7	18.6	7.8	9.3	3.3	77.5	62.7	30.0	14.4	16.7	6.9	7.8
1981	86.3	74.3	38.4	21.6	6.7	8.1	4.0	75.4	57.3	23.6	16.2	15.7	6.0	12.1
1982	78.6	66.8	36.1	18.2	6.6	8.1	3.7	57.2	48.9	18.7	13.3	14.8	4.8	3.5
1983	69.1	59.2	31.1	16.4	5.4	7.8	2.0	62.5	52.8	21.7	11.4	17.7	5.0	4.7
1984	70.3	60.4	36.0	13.1	4.8	7.7	2.2	61.9	54.6	29.2	5.3	17.6	5.9	1.6
1985	75.5	66.5	39.8	14.9	5.1	6.6	2.4	67.8	60.9	33.1	5.9	18.3	5.3	1.7
1986	93.1	83.7	49.3	19.2	6.5	6.1	3.4	91.2	83.1	49.4	9.2	19.8	5.0	4.6
1987	131.9	119.2	68.7	27.3	9.4	7.6	5.2	114.3	105.3	65.6	9.6	20.9	5.4	3.5

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

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	Aluminium products	Others manufactured products
			Total	Food and live animals	Manufactured goods	Machinery and apparatus	Other goods								
	SITC No	78-79		0	6	71-77									
1977	606.6	90.6	516.0	53.2	120.5	109.4	232.9	512.6	377.8	168.3	10.1	47.7	12.1	74.6	37.2
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	15.1	87.3	40.8
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	20.1	106.2	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	16.1	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	12.3	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	8.5	68.0	82.7
1983	815.2	58.3	756.9	72.9	156.7	139.0	388.3	745.0	506.7	245.9	18.3	1.9	8.3	130.9	87.4
1984	821.3	65.4	755.9	69.5	149.8	155.9	380.7	744.2	500.2	222.3	24.5	42.3	12.8	108.2	100.4
1985	904.0	60.7	843.3	72.0	163.1	185.0	423.2	813.9	625.5	261.5	21.2	44.4	11.5	80.5	84.9
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	14.2	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	18.5	131.6	144.4

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

Table K. **Money and credit**

End of period

	Central Bank		Non-Bank sector			Deposit money banks			Credits granted by DMB					Foreign exchange	
	Interest rate on bank over-drafts	Net Position of govern-ment	Money supply		M3[3]	Required reserves	Redis-counted bills	Net foreign position[6]	Total	*of which to:*				Official gold and foreign ex-change[4]	Commercial banks' short-term foreign assets
			M1[1]	M2[2]						Agri-culture	Fishery and fish pro-cessing	Manu-facturing and com-merce	Dwell-ings		
	%[5]	Kr. millions												Millions SDR's	Kr.
1976	3.00	129	207	548	750	159	160	12	708	96	161	210	77	83	176
1977	3.00	149	306	783	1 079	225	265	17	1 009	153	264	267	105	94	242
1978	3.00	279	432	1 122	1 605	337	397	34	1 419	240	333	376	156	116	481
1979	3.00	283	625	1 677	2 503	556	587	47	2 230	378	501	617	273	136	709
1980	4.75	312	1 012	2 775	4 139	1 001	992	78	3 517	532	817	978	456	159	1 263
1981	5.00	196	1 620	4 841	7 056	1 900	1 392	69	6 116	800	1 421	1 645	781	218	2 060
1982	4.50	115	2 092	7 136	11 152	3 039	2 935	198	11 478	1 273	3 111	3 291	1 197	154	2 814
1983	3.75	813	3 722	12 394	19 924	5 582	4 915	–45	20 333	2 191	5 567	5 599	2 174	167	4 997
1984	2.50	1 122	5 305	18 672	26 581	7 142	6 809	–1 007	29 724	2 860	8 854	8 447	2 820	169	6 722
1985	3.00	3 128	6 755	30 219	39 228	6 956	447	–3 725	38 752	4 028	8 531	12 172	3 651	221	10 186
1986	2.25	2 605	9 716	41 402	52 976	9 176	322	–2 140	46 887	4 954	7 575	14 956	4 443	285	14 029
1987	4.10	5 321	13 021	57 032	71 814	9 877	158	–4 346	68 461	6 344	11 666	21 182	5 752	258	13 027

1. Notes and coins, demand deposits.
2. Broad money, i.e. M1 plus general savings deposits.
3. M2 plus time deposits.
4. Excluding IMF position.
5. Monthly rate.
6. From 1983 foreign financing of export produce loans is included. Other foreign loans relent are excluded.

Source: Central Bank of Iceland, *Annual Reports.*

BASIC STATISTICS

BASIC STATISTICS :

INTERNATIONAL COMPARISONS

BASIC STATISTICS: INTERNATIONAL COMPARISONS

	Units	Reference period[1]	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	Yugoslavia
Population																											
Total	Thousands	1986	15 974	7 566	9 851	25 675	5 121	4 918	55 393	61 080	9 966	243	3 541	57 221	121 490	370	14 572	3 279	4 169	10 230	38 688	8 370	6 573	50 923	56 763	241 596	23 270
Inhabitants per sq.km	Number		2	90	323	3	119	14	101	246	76	2	50	190	326	142	429	12	13	111	77	19	159	65	232	26	90
Net average annual increase over previous 10 years	%		1.3	0.0	0.1	1.1	0.1	0.4	0.5	–0.1	0.9	1.0	1.1	0.3	0.7	0.2	0.6	0.6	0.3	0.6	0.7	0.2	0.2	2.1	0.1	1.0	0.8
Employment																											
Total civilian employment (TCE)[2]	Thousands	1986	6 946	3 226	3 645	11 634	2 630	2 421	20 965	25 267	3 601	117	1 068	20 614	58 530	164	5 135	1 517	2 086	4 045	10 815	4 269	3 219	15 632	24 221	109 597	..
of which: Agriculture	% of TCE		6.1	7.8	2.9	5.1	5.9	11.0	7.3	5.3	28.5	10.3	15.7	10.9	8.5	3.7	4.9	10.5	7.2	21.7	16.1	4.2	6.5	55.7	2.5	3.1	..
Industry	% of TCE		26.8	36.1	29.7	25.3	28.2	32.0	31.3	40.9	28.1	36.8	28.7	33.1	34.5	32.9	25.5	28.9	26.7	34.8	32.0	30.1	37.7	18.1	30.9	27.7	..
Services	% of TCE		67.1	56.0	67.4	69.6	65.9	57.0	61.3	53.7	43.4	53.0	55.5	56.0	57.1	63.4	69.6	60.6	66.1	43.5	51.8	65.6	55.8	26.2	66.6	69.3	..
Gross domestic product (GDP)																											
At current prices and current exchange rates	Billion US$	1986	167.3	93.8	112.2	363.9	82.5	70.5	724.2	892.0	39.8	3.9	24.5	599.9	1 955.6	5.0	175.3	27.2	69.8	29.0	229.1	131.1	135.1	58.0	547.8	4 185.5	44.2 (85)
Per capita	US$		10 473	12 403	11 377	14 174	16 130	14 326	13 077	14 611	3 987	15 984	6 914	10 484	16 109	13 574	12 040	8 300	16 746	2 984	5 945	15 661	20 587	1 142	9 651	17 324	1 913 (85)
At current prices using current PPP's[3]	Billion US$	1986	193.0	85.1	111.2	413.5	66.7	59.3	676.6	777.8	62.1	..	24.5	652.7	1 497.9	5.2	172.0	33.8	62.3	57.0	310.8	109.7	..	199.7	652.7	4 185.5	..
Per capita	US$		12 084	11 254	11 276	16 105	13 030	12 050	12 218	12 741	6 224	..	6 903	11 406	12 339	14 070	11 809	10 311	14 956	5 868	8 065	13 111	..	3 927	11 498	17 324	..
Average annual volume growth over previous 5 years	%	1986	2.9	1.8	1.5	2.7	3.3	3.2	1.7	1.7	1.6	2.2	1.1	1.9	3.6	3.5	1.6	1.8	4.1	1.6	2.1	2.1	1.6	5.5	2.6	2.9	
Gross fixed capital formation (GFCF)	% of GDP	1986	23.3	22.4	16.1	20.2	20.3	23.1	18.8	19.5	18.5	18.3	18.7	20.1	27.8	20.7	19.6	21.5	27.5	21.6	19.7	18.2	24.3	23.6	17.2	17.8	21.8 (85)
of which: Machinery and equipment	% of GDP		11.2 (85)	9.8	5.2 (85)	6.9	9.4	9.2	9.4 (85)	8.3	7.7	5.2	11.5 (84)	7.9 (85)	10.6 (85)	9.0 (82)	10.1	13.1 (85)	7.7	14.7 (81)	6.6 (85)	8.5	8.4	9.1 (82)	8.1	7.8	..
Residential construction	% of GDP		5.2 (85)	4.6 (85)	3.2 (85)	6.3	4.9	5.5	4.7 (85)	5.3	4.6	3.5	4.4 (84)	4.7 (85)	4.9 (85)	4.7 (82)	4.7	4.0 (85)	4.7	6.4 (81)	4.6 (84)	3.8	15.9 (9)	2.6 (82)	3.8	5.2	..
Average annual volume growth over previous 5 years	%		–0.1	0.5	0.7	0.4	9.5	1.6	–0.7	0.3	–1.8	–1.3	–4.6	0.3	3.5	–0.5	3.1	0.3	0.9	–3.7	1.4	2.1	4.0	7.6	4.4	4.4	..
Gross saving ratio[4]	% of GDP	1986	18.6	24.3	18.4	18.0	16.4	22.2	19.7	23.4	15.4	17.3	17.1	22.0	32.1	65.8	23.5	19.5	23.0	26.5	22.2	18.3	31.1	22.2	18.3	15.0	..
General government																											
Current expenditure on goods and services	% of GDP	1986	18.8	19.0	16.7	20.0	24.0	20.7	19.4	19.7	19.4	17.1	19.3	16.1	9.9	15.9	15.9	16.2	19.8	14.0	13.8	27.2	12.9	8.8	21.3	18.6	13.8 (85)
Current disbursements[5]	% of GDP	1986	35.3 (85)	45.7 (85)	52.0 (85)	43.0	53.3	38.7	49.4 (85)	42.9	42.8	26.1 (85)	49.7 (84)	51.9 (85)	26.9 (85)	44.6 (84)	54.0	..	47.6	37.6 (81)	36.7	59.9	30.4	..	44.9 (85)	35.6	..
Current receipts	% of GDP	1986	33.5 (85)	48.1 (85)	46.2 (85)	39.2	58.0	41.8	48.5 (85)	44.7	36.4	30.8 (85)	43.7 (85)	44.1 (85)	31.2 (85)	53.3 (84)	52.8	..	56.3	33.3 (81)	35.8	61.5	35.0	..	43.7 (85)	31.3	..
Net official development assistance	% of GNP	1986	0.47	0.21	0.49	0.48	0.89	0.45	0.72	0.43	..	0.09	0.28	0.40	0.29	..	1.01	0.30	1.20	0.08	0.09	0.85	0.30	..	0.32	0.23	..
Indicators of living standards																											
Private consumption per capita using current PPP's[3]	US$	1986	7 199	6 299	7 172	9 389	7 129	6 571	7 389	7 116	4 130	9 849 *	3 994	6 963	7 132	7 921	7 016	6 101	8 109	3 857	5 113	6 804	12 326 *	2 713	7 156	11 500	953 (85)*
Passenger cars, per 1 000 inhabitants	Number	1985	..	306 (81)	335 (84)	421 (82)	293	316	360 (83)	441 (86)	127	431	206 (83)	355 (84)	221 (83)	439 (87)	341	455	382 (86)	135 (82)	240	377	402	18 (82)	312 (83)	473 (84)	121 (83)
Telephones, per 1 000 inhabitants	Number	1985	540 (83)	460 (83)	414 (83)	664 (83)	783	615	541 (83)	641 (86)	373	525 (83)	235 (83)	448 (84)	535 (83)	425 (86)	410 (86)	646	622 (84)	166 (83)	381 (86)	890 (83)	1 334	55 (83)	521 (84)	650 (84)	122 (83)
Television sets, per 1 000 inhabitants	Number	1985	..	300 (81)	303 (84)	471 (80)	392	370 (86)	297 (80)	377 (86)	158 (80)	303	181 (80)	244 (84)	250 (80)	336 (83)	317 (86)	291	346 (86)	140 (80)	256 (82)	390	337	76 (79)	336 (84)	621 (80)	175 (83)
Doctors, per 1 000 inhabitants	Number	1985	..	1.7 (82)	2.8 (84)	1.8 (82)	2.5 (84)	2.1	2.1 (82)	2.5 (84)	2.8 (83)	2.4 (84)	1.3 (82)	3.6 (82)	1.3 (82)	1.9 (86)	2.2 (84)	2.4	2.2	1.8 (82)	3.4 (86)	2.5	1.4 (84)	1.5 (83)	0.5 (83)	2.3 (83)	1.6 (82)
Infant mortality per 1 000 live births	Number	1985	9.2 (84)	11.0	9.4	9.1 (83)	7.9	6.3	6.9	9.1	14.1	5.7	8.9	10.9	5.9 (84)	9.0	9.6 (86)	10.8	8.5 (86)	17.8	7.0 (84)	6.8	6.9	..	9.4	10.6 (84)	31.7 (83)
Wages and prices (average annual increase over previous 5 years)																											
Wages (earnings or rates according to availability)	%	1986	7.7	5.0	4.4	5.5	6.2	11.5	8.7	3.7	–0.7	..	13.4	12.6	3.9	..	3.4	10.3 (85)	11.3	23.6	17.4	8.0	..	..	9.1	4.0	..
Consumer prices	%	1987	7.0	3.0	3.5	4.2	4.7	5.0	4.7	1.1	19.3	25.7	5.2	7.6	1.1	2.2	1.3	12.6	7.0	17.2	8.5	5.9	2.1	41.6	4.7	3.3	56.3
Foreign trade																											
Exports of goods, fob*	Million US$	1986	22 541	22 432	68 731 [7]	86 663	21 210	16 332	119 264	242 404	5 644	1 094	12 633	97 479	210 807	..[8]	80 578	5 700	18 238	7 194	27 135	37 206	37 247	7 431	107 020	217 304	7 188
as % of GDP	%		13.5	23.9	58.7	23.8	25.7	23.2	16.5	27.2	14.2	28.3	51.5	16.2	10.8	..	46.0	20.6	26.1	24.8	11.9	28.4	27.6	12.8	19.5	5.2	16.3
average annual increase over previous 5 years	%		0.7	7.3	4.4	4.2	5.8	3.1	3.3	6.7	5.6	3.9	10.0	5.2	6.8	..	3.3	0.7	0.3	11.7	5.8	5.4	6.7	9.3	0.7	–1.4	–3.1
Imports of goods, cif*	Million US$	1986	23 919	26 721	68 617 [7]	81 314	22 820	15 334	128 757	189 678	11 339	1 117	11 613	99 976	127 666	..	75 424	6 130	20 291	9 443	34 922	32 490	40 865	11 122	126 161	369 961	8 196
as % of GDP	%		14.3	28.5	61.1	22.3	27.7	21.7	17.8	21.3	28.5	28.9	47.3	16.7	6.5	..	43.0	22.2	29.1	32.6	15.3	24.8	30.3	19.2	23.0	8.8	18.5
average annual increase over previous 5 years	%		0.1	4.9	2.1	4.1	5.4	1.5	1.3	3.1	4.9	1.6	1.8	1.9	–2.2	..	2.7	1.3	5.4	–0.6	1.7	2.4	6.0	4.5	4.2	7.2	–7.5
Total official reserves[6]	Million SDR's	1986	6 202	5 778	5 724 [7]	3 348	4 116	1 528	28 579	45 626	1 357	255	2 658	18 674	35 394	..	10 687	4 752	10 541	1 896	12 581	5 568	20 726	1 332	15 726	39 790	1 259
As ratio of average monthly imports of goods	Ratio		3.7	3.0	1.2	0.6	2.5	1.4	3.1	3.4	1.7	3.2	3.2	2.6	3.9	..	2.0	0.9	7.3	2.8	5.1	2.4	7.1	1.7	1.8	1.5	2.2

* 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.

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

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