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Iceland

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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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.

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Publié également en français.

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BASIC STATISTICS OF ICELAND

THE LAND

Area (1 000 sq. km)	103	Unproductive area (1 000 sq. km)	82
Productive area (1 000 sq. km)	21	*of which*:	
of which:		Glaciers	12
Cultivated area	1.1	Other area devoid of vegetation	67
Rough grazings	20		

THE PEOPLE

Population, 1st December 2002	288 201	Occupational distribution, 2001 (per cent)	
Net increase 1992-2002, annual average		Agriculture	4.0
(per cent)	1.0	Fishing and fish processing	8.1
		Other manufacturing	10.3
		Construction, total	7.2
		Commerce	14.6
		Transport and communication	6.4
		Other services	48.7

PARLIAMENT AND GOVERNMENT

Present composition of Parliament	1999
Independence Party	26
The Alliance Party	17
Progressive Party	12
The Left-Green Movement	6
The Liberal Party	2

Last general election: 8 May 1999

PRODUCTION AND CAPITAL FORMATION

Gross domestic product in 2002:		Gross fixed capital formation in 2002:	
Ikr million	774 418	Ikr million	146 532
Per head, US dollars	29 446	Per cent of GDP	18.9

FOREIGN TRADE

Exports of goods and services in 2002,		Imports of goods and services in 2002,	
per cent of GDP	39.7	per cent of GDP	37.9
Main exports in 2002 (per cent of marchandise		Imports in 2002, by use (per cent of	
exports):		merchandise imports):	
Fish products	62.8	Consumer goods	29.4
Aluminium	19.0	Capital goods and transport equipment	33.8
Other manufacturing products	14.0	Industrial supplies	28.3
Agricultural products	1.6	Fuels and lubricants	8.4
Miscellaneous	2.6		

THE CURRENCY

Monetary unit: Krona		Currency unit per US dollar, average	
		of daily figures:	
		Year 2002	91.59
		March 2003	78.13

This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

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The economic situation and policies of Iceland were reviewed by the Committee on 3 March 2003. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 14 March 2003.

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The Secretariat's draft report was prepared for the Committee by Hannes Suppanz, Michael Kiley and Douglas Sutherland under the supervision of Peter Jarrett.

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The previous Survey of Iceland was issued in June 2001.

Assessment and recommendations

Economic performance has improved over the past decade, although some weaknesses remain

A shift in policies towards achieving financial stability and market liberalisation in the early 1990s contributed to the strong growth of the Icelandic economy seen since the middle of the last decade. As a result, per capita income (at purchasing power parities) exceeds the OECD average by around one-fifth, as compared with one-tenth in 1995. The pronounced improvement in Iceland's relative position suggests that inflation reduction, fiscal consolidation and structural reforms have paid off. Financial-market liberalisation and privatisation appear to have fostered greater entrepreneurship, investment and growth. Some distortions and weaknesses persist, however. The housing, energy and agricultural sectors are still distorted by government policies. The trade-off between regional policy objectives and economic efficiency needs to be addressed. And, although Iceland has made headway in diversifying its exports, it remains exposed to destabilising external shocks. Moreover, following the late-1990s spurt of growth, Iceland's external debt has reached very high levels, with household balance sheets particularly debt-laden.

The swift unwinding of imbalances manifests the economy's enhanced adjustment capacity

Even so, the economy has shown a remarkable capacity to adjust, with major imbalances that emerged in the late 1990s when the economy was overheating being rapidly corrected without a severe recession. Indeed, as robust export growth largely offset a contraction in domestic demand, the recent economic downturn has been milder and likely shorter than had been expected. Nonetheless, the slowdown has sufficed to eliminate the large current account deficit that had reached 10 per cent of GDP in 2000 and to bring consumer price inflation back down from nearly 9½ per cent at the beginning of 2002 to 1½ per cent most recently, as it was in the period 1994-98. Favourable special factors, notably higher fish prices and the resurgence of the

krona, have contributed. But the new monetary policy framework, which freed the exchange rate and has anchored inflation expectations, has also helped. Furthermore, the real economy has displayed an impressive adaptability, owing to labour-market flexibility, a propitious business environment and a strong technological base.

It also bodes well for the recovery that is just getting underway…

Improved fundamentals over the past year have allowed substantial monetary easing and set the stage for recovery. The economic upswing is likely to be gradual, with real GDP projected to expand by 1½ to 2 per cent this year and 3½ to 4 per cent in 2004 when there will be a boost to demand from the expansion of power-intensive industry. Inflation should nevertheless remain near the official target (2½ per cent).

… although there are downside risks in the near term…

External market developments would appear to pose the most important near-term downside risk to the outlook. Moreover, the recently completed privatisation of domestic financial institutions and buoyant expectations regarding the power-intensive industrial development projects have been pushing up the exchange rate, thereby endangering Iceland's recently favourable competitive position. On the domestic side, the high level of household debt could make for even slower consumption growth than anticipated, and investment may take longer to recover. Upside risks to the short-term outlook cannot be entirely ruled out, but they would seem to concern mainly the period of peak power-intensive expansion beyond 2004.

… and major challenges in the medium term

It is now apparent that there will be a significant expansion in power-intensive industry, and the associated investments will have a huge economic impact. According to official estimates, economic growth could reach 5 to 7 per cent in 2005-06, and the unemployment rate could drop to below 1 per cent. The current account would deteriorate by 6½ per cent of GDP during the construction period, adding to the foreign debt, and inflation is likely to exceed the 4 per cent tolerance limit associated with the inflation target in the absence of offsetting measures. A liberal immigration policy would help reduce labour market and hence inflation pressures, but even so maintenance of economic stability will be a major challenge for traditional macroeconomic policies, with the new monetary framework being put to the test.

The new inflation-targeting regime has smoothed the return to macroeconomic balance

The adoption of inflation targeting in March 2001 reflected the recognition of the fact that, in an overheating economy with a surging external deficit, maintenance of a nominal exchange-rate target was both incompatible with internal balance and contributing to the mounting burden of foreign-currency-denominated debt. Under the new regime, the Central Bank's objective is an inflation rate of 2½ per cent with a tolerance band of 1½ percentage points on each side. However, it was expected that earlier pressures in product and labour markets, as well as currency depreciation after the abandonment of the nominal exchange-rate target, would lead to a short-lived but significant pick-up in inflation. Thus, the upper tolerance limit was initially set at 6 per cent for 2001 and 4½ per cent for 2002. It was early 2002 before domestic demand had eased sufficiently and the currency weakened enough to wipe out the current account deficit; that, along with the decision by the labour unions to postpone a re-opening of wage negotiations helped inflation expectations to decline. The Central Bank was then able to reduce interest rates steadily – to 5.3 per cent by February 2003. By now headline inflation is below the target, and medium-term inflation expectations are hovering around 2 per cent. Accordingly, the current policy stance seems appropriate and should underpin the still-fragile recovery.

Monetary policy must now balance limited current economic slack against prospects of stronger growth next year

Although recent indicators suggest that some economic slack has begun to emerge and the economy continues to grow below potential rates, policymakers must start to weigh the likely impact of the major power-intensive investment projects on future capacity conditions and inflation. The boost to demand and attendant tightening in the labour market will increase the risk of a return to excess demand already next year, implying that interest rates will need to be raised. The appropriate timing and size of such increases will depend on a number of factors, including exchange-rate developments and the fiscal stance. The new inflation-targeting framework provides clear guidance: policy should remain in accommodative mode while two-year-ahead inflation projections remain below 2½ per cent but should reverse course as the expected acceleration in demand boosts those projections above that mark. On that basis, official interest rates will likely need to be significantly higher by end-2004. The targeting framework has already paid dividends, but the Central Bank should

consider strengthening it through a move to regular policy meetings so as to improve communications with the financial markets, with decisions announced immediately thereafter as is done by all other inflation-targeters.

While the current neutral fiscal stance is appropriate…

The substantial general government financial surpluses recorded a few years ago (around 2½ per cent of GDP) have all but disappeared. This reflects the effects of the economic downturn, but also some discretionary easing (for example, new or enhanced social programmes, such as parental leave and child allowances, and tax reductions), as well as other deviations of spending from budgeted levels. Nonetheless, general government finances in 2002 appear to have been in approximate structural balance, which was intended to be maintained this year according to budget plans. However, in February the government announced a substantial bringing forward of public investments (mainly road building) that will be carried out over the rest of 2003 and 2004, rather than in the two subsequent years. This has been followed by similar announcements at the municipal level. The increased spending could be justified by the fragility of the incipient recovery and the unusually healthy long-term condition of the public finances. However, the risk is that some of the resulting construction activity may nonetheless overlap with the gearing up of the power-intensive projects, generating capacity pressures both sectorally and possibly economy-wide. Following these decisions, the room for further fiscal expansion would seem to have been exhausted, and expenditure overruns must be avoided.

… some fiscal tightening will be required thereafter

Further ahead, the stimulative effects of the major investment projects should be counteracted by budget surpluses. While monetary policy will bear most of the burden of stabilising the economy, assistance from tighter fiscal policy would be appropriate to moderate the extent of interest-rate increases that would otherwise be required. This should take the form of restraint in public expenditure, especially on capital projects, during the peak construction period. As to the strategic orientation of fiscal policy, the authorities are aiming at surpluses throughout the business cycle in order to ensure a rapid reduction in the already low public debt. This should be achieved in a process that aims not only at cutting expenditure

but also at reducing taxation. While corporate taxation has been reduced substantially, personal tax rates are still higher than in the late 1980s, despite cuts in recent years. Besides having favourable labour supply effects, further cuts in marginal tax rates would maintain downward pressure on the level of government spending.

Spending discipline could be enhanced by further changes in the budget process…

While overall public spending is not high compared with Iceland's Nordic neighbours, other OECD countries have made more progress in reining it in. Budget consolidation efforts and public-sector reforms temporarily reversed the upward trend in the government expenditure-to-GDP ratio in the mid-1990s, but since then the ratio has edged up again, and budget balance has been maintained only through a rise in the tax-to-GDP ratio. Recurrent overruns of budget spending targets point to the need for further modifying the fiscal framework. Although the introduction of "frame-budgeting" (setting expenditure ceilings) has improved planning and decision-making, its effectiveness has been undermined by a tendency for expenditure targets to be changed in the parliamentary phase of the budget process. Moreover, fiscal slippage has continued, with overspending (typically in civil service pay and health care) systematically sanctioned by supplementary budgets. An early parliamentary vote on the "frames" (ceilings) could ensure that they are not neglected later in the budget process. The execution of the budget needs to be tightened and the use of supplementary budgets restricted. In addition, it would seem necessary to strengthen the medium-term strategic focus of fiscal policy through a process that clearly defines political priorities and the means to achieve them and relies on multi-year spending targets rather than *ad hoc* decisions.

… as well as reforms in performance and human resource management

Public finances would also benefit from more efficient public spending, for example from greater use of performance management. So far about half of all government agencies are covered by framework performance contracts. Implementation clearly needs to be accelerated, setting deadlines and possibly reducing the number of small agencies. Linking the budget process to performance, which was one of the objectives of public-sector reform, remains a challenge. Most ministries have still to adopt performance-based

budgeting. This approach should both be extended throughout the government and integrated in the budget formulation from the beginning. Moreover, managerial accountability has lagged the shift of authority to government agencies, contributing to large one-off wage increases as the new decentralised pay system was introduced. But, in addition to enhanced accountability. The wage bargaining process should be strengthened, for example by ensuring that the Ministry of Finance's wage bargainers are given clear instructions in order to limit potential wage overruns. Moving to multi-year budgeting may be helpful in this respect.

Local government finances need attention

The devolution of responsibilities to local authorities has also not been without problems, since they seem to have even greater difficulties than the central government in resisting claims for more public services and pay increases that are out of line with performance. This is compounded by the fact that they have been slower in introducing performance management and other reforms. Part of the problem is that, outside the capital region, local authorities are too small to be effective managers of many categories of expenditure. Thus, incentives should be provided for further local government amalgamation. In contrast to the central government, which has moved to budget surpluses, local authorities have been in persistent deficit over the past decade. To some extent, this reflects the fact that additional revenue provided through more tax room and transfers from the central government, though partly justified by additional responsibilities, has limited incentives to curb spending. A further move to general rather than earmarked grants in the context of equalisation is desirable, since block grants reduce the risk of distorted or excessive spending. In addition, central and local governments should commit to reaching binding annual agreements to ensure the achievement of national public-spending objectives.

Social spending reforms should focus on getting better value for money

Health care, education and social support are the main tasks of government, with spending on these activities accounting for more than three-fifths of both the state's and local authorities' total outlays. This highlights the importance of expenditure management in these sectors, the more so since they are also facing the strongest spending

pressures. Iceland's expenditure on health care, which is largely publicly funded, was lower than the OECD average until the 1980s, but is now among the highest in per-capita terms. This has been reflected in an above-average level of care and better health outcomes. However, even adjusting for changes in life style, the returns to the rapid expansion of expenditure in recent years can be questioned; it has not been matched by much further improvement in health outcomes. Although government initiatives have yielded some cost savings, thought has to be given to developing a more substantial reform package, while recognising the complexity of improving efficiency without sacrificing equity. The turnaround has been even more striking in education expenditure, where Iceland has moved from well below average in the 1980s to the highest level among OECD countries. This largely reflects a deliberate government effort, which seems to be leading to an improvement in educational outcomes. The focus should now be on getting better value for money. The recent conclusion of performance-related contracts with all higher-education institutions should be helpful. Other useful measures would be an increase in class sizes where they are low and the introduction of tuition fees (flanked by a student loans scheme) in tertiary education where returns are largely private; this would also provide an incentive to students to reduce the duration of studies.

Financial-market reforms have proved to be effective…

As noted, the financial system has weathered the recent economic slowdown, despite increased defaults and bankruptcy rates. This partially reflects fortunate exchange-rate developments: repayment difficulties on foreign-currency-denominated debt for those sectors with little foreign-currency income, such as households and retailers, undoubtedly would have become more widespread, had the krona failed to appreciate from late-2001 levels. In addition, earlier concern about the adequacy of banks' capital positions and financial supervision received prompt attention. Staffing levels at the Financial Supervisory Authority were increased markedly. Commercial banks have also raised their capital reserves. Looking forward, regulators should maintain pressure on banks to maintain generous amounts of capital because of the volatility of the economy and the generally high level of indebtedness.

… but changes in housing policy would be desirable

Two areas remain in need of some structural policy changes, though. *First*, efforts to spur consolidation among savings banks should be increased. They have significantly lower quality portfolios, and, while this does not present a systemic risk, capital would be allocated more efficiently if the discipline in loan decisions apparent at larger commercial banks was also applied at these small institutions. The current incentives for savings banks to incorporate have so far been insufficient, in part because a portion of the own capital would not accrue to the current members at incorporation. *Second*, and more importantly, housing receives large direct and indirect support – on the order of 1¾ per cent of GDP – through government debt guarantees, substantial amounts of mortgage interest payments (subject to limits on beneficiaries' incomes and assets), partial rebates on the value-added tax on construction wage costs and (means-tested) rental assistance. Consequently, homeownership is high (at over 80 per cent), as are household debt levels. Moreover, these support measures bias investment decisions away from productivity-enhancing capital spending. This set of policies is excessively generous and should be reconsidered; the distributional objectives implicit in means-testing should be pursued in a manner that does not affect housing decisions.

While the government has withdrawn from commercial banking, privatisation in telecommunications has been put on hold…

The authorities' decade-long privatisation programme has been a great success. Almost all of the government's remaining stakes in two large commercial banks were sold in 2002; these sales, in conjunction with the entry of a new player, should heighten competitive pressures in the sector. On the other hand, the planned sale of Iceland Telecom did not proceed, in part because of the plunge in market valuations of telecommunication firms world wide. Now that its privately owned competitors have all merged, its privatisation is no longer a simple decision: a regulatory environment appropriate to such a duopoly will have to be a concomitant reform. But even if the stock market were to remain weak for an extended period, this should not be taken as a permanent argument against privatisation. In the meantime sectoral regulators and competition authorities

will need to be vigilant to prevent it from abusing its dominant position.

… and electricity deregulation is advancing slowly…

The other major sector still subject to government ownership is electricity. Currently, the predominantly state-owned National Power Company (NPC) dominates generation, and distribution is performed by a number of local-government-controlled utilities. This structure does not distinguish between natural monopoly areas (such as transmission and system operation) and competitive elements (such as generation and distribution). Reform is also needed to comply with EU directives under the European Economic Area agreement. Proposals before Parliament would separate the natural monopoly and competitive areas and eventually privatise government-owned enterprises. However, some aspects could be improved. The inter-regional distortion resulting from the uniform tariff schedule (as distribution is less expensive in Reykjavik, for instance) should be removed to encourage efficient use. Moreover, the government guarantees NPC's debt, and its tax-exempt status further distorts the playing field relative to potential competing energy suppliers. Removal of these measures would make the social returns to power-generation projects more transparent and also provide a clearer market basis for the development of energy-intensive industries.

… as expansion of aluminium production will increase the importance of the energy-producing sector

Building a new aluminium smelter in eastern Iceland requires the construction of a large new hydropower plant. Apart from the macroeconomic impact during the construction phase, this project – as well as proposals to expand capacity at the two existing smelters – raises a number of long-term issues. It implies a near-doubling in the debt of the NPC and in the importance of aluminium in exports. The resulting increase in diversification is desirable, given that marine products currently represent about two-thirds of merchandise exports. But the increased debt level of the NPC could complicate its privatisation. While it is now too late to pursue a private-market scheme with substantial foreign investor participation, this would have been desirable both to diversify the risk being assumed by the NPC and to allow for a market-based test of the project's financial return.

The costs of policies aimed at preserving regional balance should be made transparent

Regional concerns have been a factor in many areas: regional cross-subsidisation of electricity, support to farming to boost the economy in some locations and infrastructure projects. As this list illustrates, the mix of policies designed to maintain some regional balance in population has often been indirect and has yielded distorted relative prices and hence inefficient resource allocation. Moreover, the patchwork approach has resulted in a set of policies whose cost is indeterminate and that to date has proven unable to prevent a continued drift toward the capital region. While public opinion may demand continued efforts to preserve regional balance, this objective could be achieved in a less distortionary manner if policies did not impinge on market signals across such a wide range of activities. Clearer accounting of the costs of these policies would also facilitate public decision-making, ensuring that efforts to maintain regional populations reflect the national will, rather than more narrow interests.

Though government support to agriculture has fallen, additional liberalisation would yield sizeable gains for consumers

Progress in agriculture liberalisation has occurred over the past decade, especially with regard to the elimination of quotas for sheep meat and price regulation in most areas, excluding dairy. Nonetheless, support to Iceland's farmers remains among the highest in the OECD, resulting in consumer prices for agricultural commodities that are typically close to double world market levels. Protection takes the form of minimum access quotas, most of which have been filled, and high tariff levels, usually over 100 per cent. The priority changes that should be pursued – which would lead to a significant improvement in consumer welfare – are increases in minimum access quotas, lower tariff rates and dismantling of administered prices for dairy products.

Reforms to fisheries management policy could further enhance an already effective system

Iceland introduced a science-based, market-driven limit on fishing in time to place the industry on a sustainable basis. With the rapid emergence of quota trading, the fleet is in the process of being rationalised without the need for government subsidies. A resource tax in the form of a fishing fee has now been agreed. This will serve, initially in 2004, to ensure that the industry pays the cost of the fisheries management system and research. As the tax rises, reaching 9.5 per cent of net revenues by 2009, it will start to

capture part of the rent that arises from access to low-cost fishing grounds. This tax could be raised further, provided that it does not cause the catch to drop excessively. After an unexpected fall in cod stock estimates in 2000, the generally applied method for determining the allowable catch was temporarily suspended, and a limit on the inter-annual changes in the quota was introduced. This has delayed the recovery of stocks to their optimal level, and so there is a case for a more conservative catch limit in the immediate future to allow a faster recovery in stocks. Finally, the special treatment of small boats in the form of inefficient effort-related limits on fishing should be phased-out.

Environmental policy would benefit from greater use of cost-benefit analysis

Greenhouse gas emissions are much lower, relative to GDP, than in other OECD countries but have been rising relatively rapidly due to Iceland's industrial specialisation. Nonetheless, it is unlikely that this increase has raised global emissions. In effect, domestic polices have promoted renewable energy and so allowed energy supplies to new aluminium plants to be less emissions-intensive than in the rest of the world. Expansion of these industries has broad implications for the natural environment, air pollution and regional policy. While the current practice is to consider such factors in the planning stage of major projects, explicit use of cost-benefit analysis would provide greater information to decision-makers and the public with respect to the trade-offs between purely economic and other goals. This would also allow for some estimates of the social, *versus* the private, return to power-intensive investments, thereby making any implicit government subsidy transparent. Finally, a shift to taxing diesel vehicles on the basis of fuel consumption rather than distance travelled should be considered in order to encourage fuel efficiency and reduce associated emissions.

Summary

In summary, Iceland's economic performance has improved considerably over the past decade. Major imbalances and tensions that developed when the economy was overheating were corrected in a surprisingly short time span, highlighting the economy's enhanced adjustment capacity. Moreover, this was accomplished without a severe recession, and a gradual recovery seems to be getting

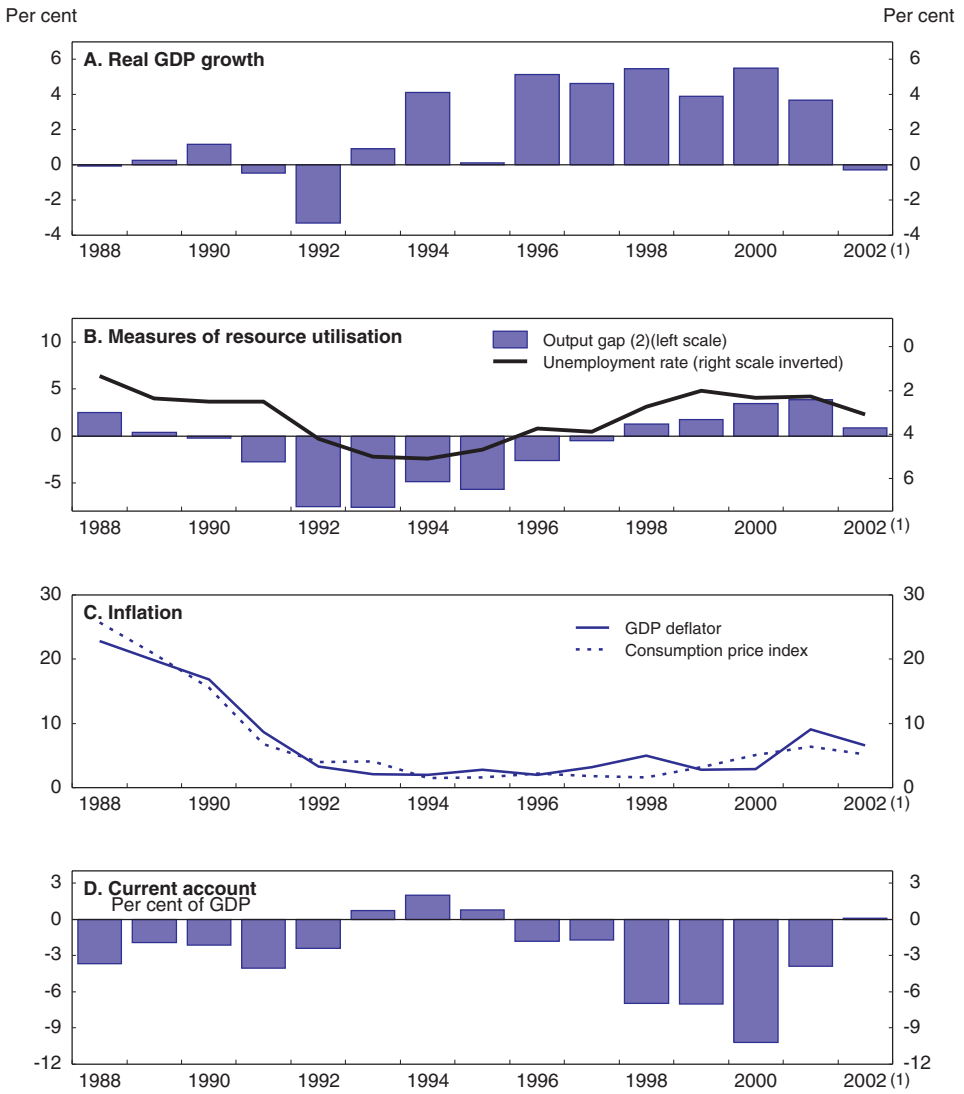
underway. This favourable performance is the fruit of the shift in policies towards financial stability and market liberalisation in the 1990s. Nonetheless, important challenges remain. Over the next few years, there will be a substantial boost to demand from expanded aluminium smelting capacity, a new hydropower station and related public investments. This requires an appropriate macroeconomic policy response, lest the economy resumes the overheating and unsustainable external deficits from which it has just escaped. A tight fiscal stance will be required during the peak construction period, especially as regards public investment spending, in order to avoid bottlenecks and excessive labour market pressures. But monetary policy will need to be particularly vigilant in its efforts to maintain macroeconomic balance and preserve price stability. While recent economic outcomes bode well for the economic outlook, some distortions and weaknesses persist that need attention. Although radical fiscal consolidation in the 1990s has put government finances on a much better footing, expenditure creep remains a problem, and there is room for further reforms to improve control over and increase the effectiveness of public spending. The cost of policies aimed at preserving regional balance should be made transparent. Housing policy biases capital allocation away from productivity-enhancing business ventures to an excessive degree. More generally, product-market competition should also be encouraged by further liberalisation. Privatisation in telecommunications should not be delayed further. Electricity deregulation needs to be accelerated, the more so since power-intensive investment projects will increase the importance of the energy sector. Further agricultural liberalisation would lead to a significant improvement in consumer welfare, and prudent catch limits would allow a faster recovery in fish stocks and higher sustainable yields. Action in these areas, combined with skilful macroeconomic management, should safeguard Iceland's current high standard of living relative to the rest of the OECD.

I. Economic performance and outlook

Strong growth since the mid-1990s was interrupted by economic overheating and an ensuing mild recession in 2002. From 1996 to 2001, Iceland experienced one of the highest growth rates among OECD countries (Figure 1). This dynamic performance reflected improved economic fundamentals following a shift of policies towards price stabilisation, fiscal consolidation and market liberalisation. The period of strong growth was spurred by brighter economic prospects associated with renewed interest in the development of power-intensive industries and a recovery in fish stocks. But, while the expansion was investment-led, it became increasingly driven by booming consumption. And, though the economy was in an excess supply position in 1995 following a prolonged adjustment period involving both fundamental macro- and microeconomic reforms, signs of overheating became increasingly visible in the late 1990s. The external deficit widened sharply, and a simultaneous capital outflow (facilitated by financial liberalisation) implied an extraordinary degree of financing by way of foreign credit, reaching one-fifth of GDP in 2000. The ensuing collapse in the exchange rate, combined with a stock market bubble, a surge in real estate prices and wage pressures owing to labour shortages, rekindled inflation.

However, the economy has shown a remarkable capacity to adjust, with the major imbalances that had emerged in the late 1990s being rapidly corrected with only a mild recession. Inflation plunged, and the current account deficit vanished. Propitious special factors (such as higher fish prices) have contributed. But the new monetary policy framework introduced in March 2001, which allowed the exchange rate to fluctuate and facilitated wage moderation, has also helped. In addition, the structural reforms implemented over the past decade have enhanced the economy's adaptability. With improved fundamentals, economic prospects appear to be favourable, although the incipient recovery is still fragile, and there are downside risks related to the international economy. Moreover, while major investment projects in the energy sector and power-intensive industries should give a boost to activity, implementing them without destabilising the economy poses a challenge to policy makers.

Figure 1. **Aggregate economic indicators**



1. OECD projections.
2. Percentage difference between output and estimated potential output.

Source: Central Bank of Iceland and OECD.

Economic imbalances have been swiftly corrected

With economic growth in the second half of the 1990s averaging 5 per cent per annum, the current account deficit widened sharply, to reach 10 per cent of GDP in 2000 (Figure 1, Panel D). As a result, net external debt, which had already been high at around 50 per cent of GDP, more than doubled (see below). At the same time, exchange-rate depreciation and the emergence of excess demand spurred higher inflation (Figure 1, Panel C), which approached the 10 per cent mark in CPI terms at the beginning of 2002. Against this backdrop, the monetary stance was kept relatively tight, contributing ultimately to a contraction in domestic demand and imports. Together with the effects of the lower exchange rate on trade flows, this made for a rapid narrowing in the external deficit, which disappeared in late 2001. This, in turn, underpinned the currency, which recovered about half of the ground lost in the two preceding years (which had been around 30 per cent in effective terms). The krona's rebound brought about a rapid fall in the inflation rate to 1½ per cent per cent within just a year. The credibility of the new monetary regime and the disappearance of excess demand (Figure 1, Panel B) have also contributed. Still, with robust export growth largely offsetting the contraction in domestic demand, the recent economic downturn has been milder and shorter than generally expected and, in stark contrast to the early 1990s, a severe recession has been avoided.

Contracting domestic demand

The downward adjustment in domestic demand, which had expanded at an annual rate of more than 6 per cent in the second half of the 1990s, was quite sharp, amounting to 3 per cent in 2001 and exceeding that figure in the first three quarters of 2002 (Table 1). Initially driven mainly by consumer retrenchment, the contraction in domestic demand spread to fixed capital formation, which seems to have continued to shrink in the latter part of 2002.

Private consumption was particularly affected in 2001, when it dropped by 3 per cent, but showed signs of turning around during the course of 2002. Purchases of durable goods, which had been the driving force of the consumption boom in the late 1990s, dropped by more than 20 per cent in 2001. The market for new automobiles was clearly saturated following several years of sales increases at double-digit rates. However, the collapse in consumer spending despite continuing, albeit slower, growth in real disposable income, can to large extent be attributed to the sharp increase in household debt. In the second half of the 1990s, the rise in private consumption exceeded that in disposable income by a large margin (Figure 2). Household debt had already increased strongly in the early 1990s, when financial markets were liberalised. After a period of relatively modest growth, household indebtedness then jumped from around 130 per cent of disposable income in the mid-1990s to nearly 170 per cent in 2001. Partly reflecting higher interest rates, debt

Table 1. **Demand, output and prices**
Per cent change in volume terms, 1990 prices

	Average 1988-96	Average 1997-2001	1998	1999	2000	2001	2002[2]
Private consumption	–0.1	4.5	10.1	7.3	4.0	–3.0	–2.1
Government consumption	2.4	3.7	3.4	4.4	3.7	3.2	2.5
Gross fixed investment	–0.6	8.9	32.9	–3.7	14.8	–4.2	–17.1
Residential[3]	–1.1	6.1	1.3	0.3	10.5	12.9	2.0
Business[3]	–0.2	9.5	46.2	–5.8	15.0	–9.2	–21.1
Government[3]	–1.2	9.9	23.4	0.9	18.1	–0.7	–7.0
Final domestic demand	0.3	5.2	13.2	4.2	6.2	–2.1	–4.7
Change in stockbuilding[1]	–0.1	–0.1	0.2	–0.2	0.5	–0.9	0.4
Total domestic demand	0.2	5.1	13.4	4.0	6.7	–2.9	–4.3
Exports of goods and services	2.1	4.7	2.0	4.0	5.0	7.8	5.0
Imports of goods and services	0.4	6.0	23.4	4.2	8.0	–9.0	–5.6
Change in foreign balance[1]	0.6	–0.5	–7.9	–0.4	–1.6	6.8	4.2
GDP	1.0	4.6	5.5	3.9	5.5	3.7	–0.3
GDP deflator	7.0	4.9	5.0	2.9	2.9	9.0	7.0
Private consumption deflator	7.5	4.0	0.9	2.6	4.5	8.1	5.4

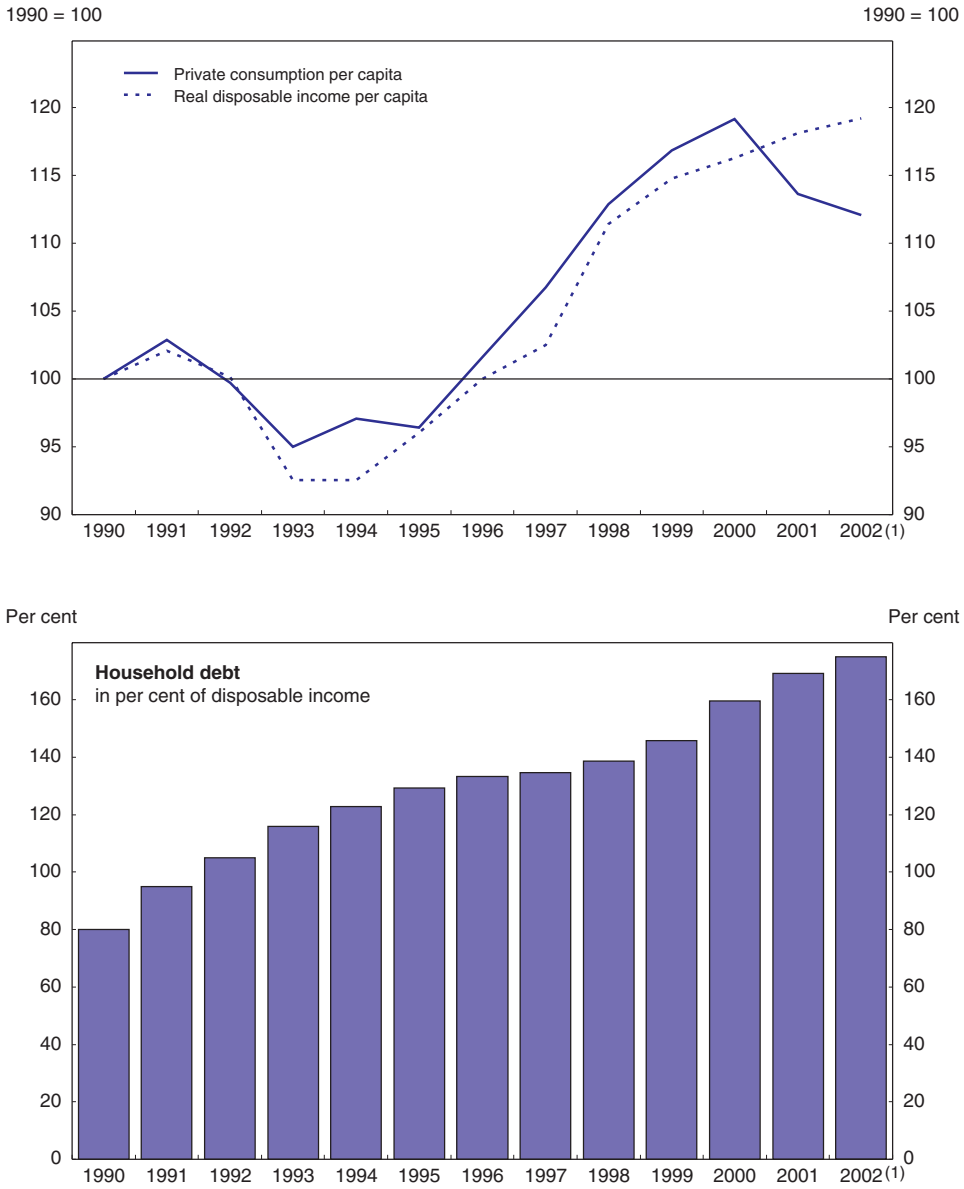
1. As a percentage of GDP in the previous period.
2. First three quarters over corresponding period of previous year.
3. For 2002, estimates for the whole year.
Source: Statistics Iceland and OECD.

servicing nearly doubled to about two-fifths of disposable household income. Notwithstanding the recent reduction in interest rates, the heavy debt-servicing burden is likely to encourage saving and hence constrain consumer spending in the foreseeable future. Indeed, although the year-on-year decline in private consumption came to a halt in the third quarter of 2002 due to some pick-up in automobile sales, the propensity to consume has remained depressed so far.

The slowdown in residential investment lagged that in private consumption. In 2001, housing construction still expanded at double-digit rates as in the year before. This has to be seen in perspective, however. After trending down over most of the past decade, residential construction was at a historically low level in the late 1990s. The economic upswing, along with migration to the capital area (both domestic and from abroad), finally led to strong demand for new housing and a sharp rise in property prices, which had been largely stable over the decade. Subsequently, slower real income growth, the end of net immigration and easing real estate prices, as well as high interest rates, have combined to create a less favourable environment for residential investment. As a result, the construction boom petered out during the course of 2002.

In contrast to residential investment, business fixed capital formation started contracting at about the same time as current consumer spending. However,

Figure 2. **Private consumption, disposable income and household debt**



1. Estimates.
Source: Statistics Iceland and Central Bank of Iceland.

its decline accelerated in 2002 and, at around 20 per cent, may have been twice the decline recorded in 2001. As a result, its share of (nominal) GDP has fallen to about 10 per cent, the lowest level since the early 1990s, after averaging 15 per cent in 1998-2000. Although capital spending has been shrinking across the board, the decline has been most pronounced in energy-intensive industries and electricity generation, where several large-scale projects were completed in 2001. Investment in telecommunications has also dropped sharply, following substantial outlays up to 2001. So far, there are no indications that the decline in fixed capital formation has come to an end. Improving business confidence and corporate profitability suggest that investment conditions have become more favourable during the course of 2002, but many firms seem to be burdened by heavy debt-servicing (see Chapter II).

Ongoing solid export growth

While domestic demand receded, export activity gathered momentum (Table 1). Net exports (taking account of imports) contributed almost 7 percentage points to GDP growth in 2001 (the mirror image of 1998) and around 4 points once more in 2002. Export performance was the best since 1994-95. Merchandise export volumes rose by about 7 and 8 per cent in 2001 and 2002, respectively. Besides a competitive currency – in late 2001, the real effective exchange rate fell temporarily to its lowest level for three decades – favourable special factors have contributed. Not only has the fish catch recovered after several years of decline, but exports of marine products (nearly two-thirds of the total) have also increased more than could be expected from catch figures, as significant price increases in world markets appear to have induced producers to lower their inventories. Aluminium exports (one-fifth of the total) have grown strongly due to increased production capacity. But exports of other manufactured products also rose briskly, notably those of pharmaceuticals, medical equipment and fisheries gear. By contrast, exports of services, which had boomed in the late 1990s, have slowed markedly, weighing on overall export growth in 2002.

Disappearance of excess demand during 2002

Given the sizeable positive contribution of the real foreign balance, GDP growth still exceeded 3½ per cent in 2001, despite the contraction in domestic demand. Although increased capital and labour inputs during the boom of the late 1990s temporarily pushed potential output growth above its trend value – around 2¾ per cent per annum – the (positive) output gap reached almost 3½ per cent of potential output according to OECD estimates (Figure 1). However, with a declining contribution of the real foreign balance, GDP growth appears to have virtually come to a halt in 2002, and some slight economic slack may have emerged in the second half of the year.

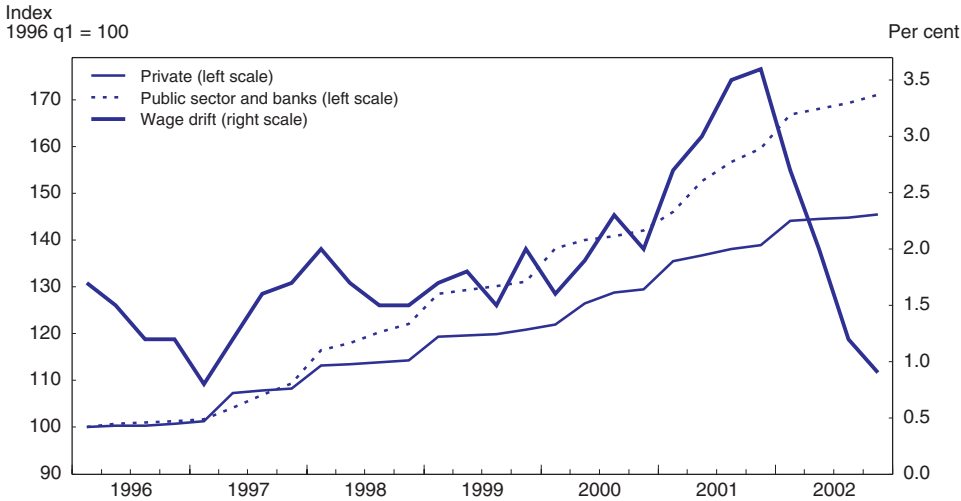
Rising unemployment

Weakening economic activity has been reflected in the labour market. With strong economic growth, the unemployment rate had declined significantly from the mid-1990s, reaching 2 per cent in 1999, according to survey data (Figure 1). This was the lowest level since the early 1990s and well below any estimates of the NAIRU. Since then, the unemployment rate has gradually risen to around 3 per cent. This relatively modest increase is attributable to both demand and supply factors. Although employment growth has turned negative, labour demand has adjusted to output growth with a lag, as manifest in the deceleration of productivity gains in 2002. At the same time, the expansion of the labour supply has slowed markedly from its peak rate of 3 per cent in the late 1990s. In that period, strong net immigration had pushed annual population growth to over 1½ per cent. With migration flows now again in broad balance, the rise in the population has fallen back to its "natural" rate of just under 1 per cent per annum. In addition, labour-force participation has declined somewhat, after reaching record levels both by historical and international standards. Two factors largely account for this easing. Participation is above average among foreigners whose inflow has receded; it is also exceptionally high among students (approaching 80 per cent in 2000) who have found it more difficult to find part-time work of late. While it is uncertain whether unemployment has already reached or surpassed its structural rate, there are clear indications of an easing in labour-market conditions, such as a significant rise in the proportion of long-term unemployed, a sharp decline in net migration from the outlying regions to the capital area and a pronounced decrease in wage drift.

Declining wage and price inflation

The tight labour market at the onset of the recent economic downturn, along with rising inflation during 2001, led to a substantial increase in wage drift during the year. From the fourth quarter of 2000 to the corresponding period in 2001, wages in private non-financial companies grew by around 3½ percentage points in excess of contractual raises, while wage drift in previous years had averaged half that (Figure 3). With the turnaround in the labour market, year-on-year wage drift receded to just below 1 per cent by the fourth quarter of 2002. This has allowed a deceleration in annual wage growth to 4½ per cent, down from peak of around 11 per cent in early 2001. In contrast, public-sector wages (including banks) continued to accelerate for another year, their annual increase peaking at 14 per cent in early 2002 before falling to 7½ per cent most recently. Despite the decline in nominal wage growth, average economy-wide increases have remained substantial in real terms, averaging 2 per cent in both 2001 and 2002, because inflation has eased so much since its spike at the turn of 2002.

Figure 3. **Wage developments**

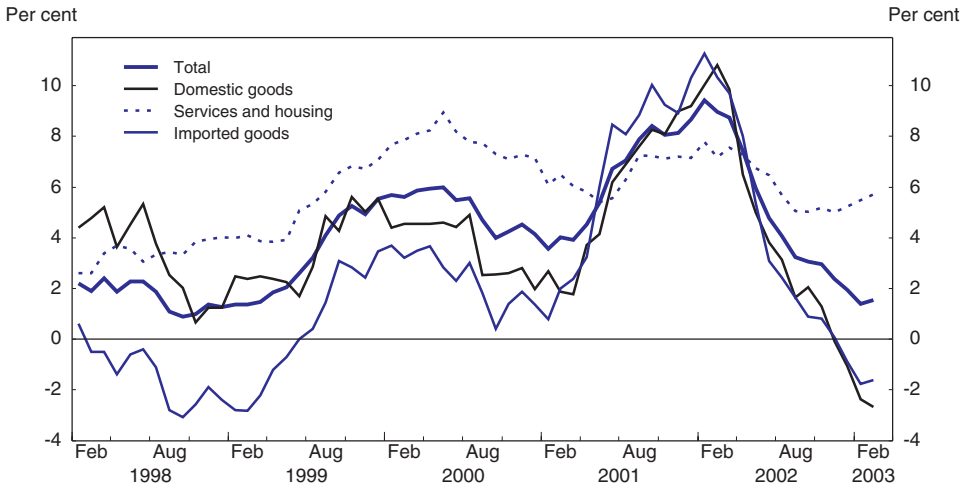


Source: Central Bank of Iceland and Statistics Iceland.

During 2001, at the same time the economy began to slow down, inflation increased rapidly. The consumer price index (CPI) rose by 9½ per cent through 2001, the highest rate since 1990. In the late 1990s, the main driving forces behind increasing inflation had been higher oil prices abroad and housing prices at home. By contrast, the major reason for the sharp further rise in inflation in 2001 was the depreciation of the krona by almost 15 per cent over the year. Rising prices of imported goods (Figure 4) accounted for half of the CPI increase during the year, despite a decline in petrol prices. The interaction of the sliding exchange rate and accelerating domestic wages led to much more widespread inflation than before. In addition, the sizeable positive output gap that persisted through the year stoked the inflationary fires that had been building up in preceding years. Against this backdrop, it seemed doubtful whether a wage, price and exchange-rate spiral could be avoided.

However, the situation changed dramatically for the better in 2002 when the CPI increase through the year dropped to 1½ per cent. The main reason for the sharply reduced rate of inflation was a significant strengthening in the currency as it became clear that the large current account deficit had disappeared. This was reflected in import prices, which have fallen below year-earlier levels of late. Another contributing factor was an agreement between employers and unions in December 2001 to the effect that wage settlements would not be re-opened (a review was in principle possible in February) if the CPI could be kept below a certain

Figure 4. **Consumer price inflation**
12-month per cent change



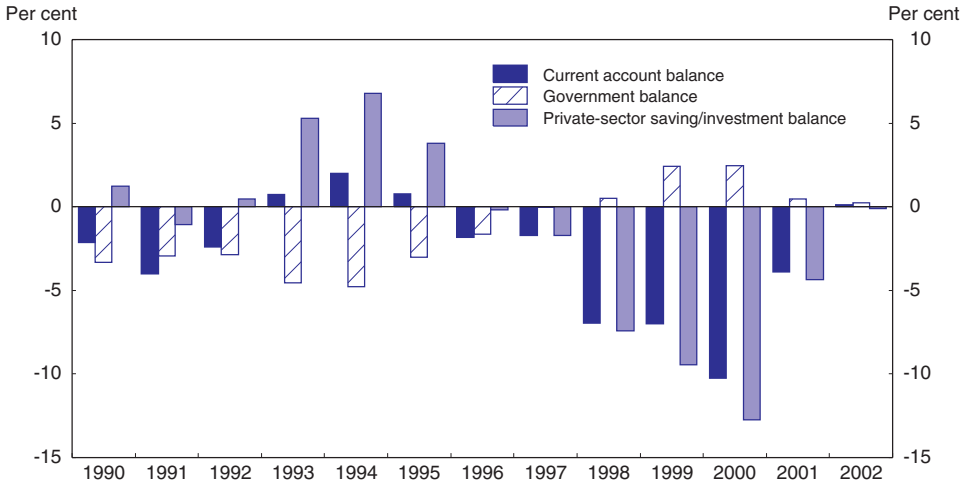
Source: Statistics Iceland.

threshold level by May 2002. This effort succeeded, helped by the government's decision to withdraw or postpone increases in public service charges, but mainly because of the favourable development in the exchange rate. More recently, emerging slack in goods markets and easing labour market pressures have weighed on prices. Nonetheless, annual price increases for services and housing have remained high, at around 5 per cent (Figure 4).

A *surprisingly rapid return to external balance*

At the end of the economic boom in the late 1990s, the current account deficit had reached 10 per cent of GDP, the highest level recorded since the mid-1970s. While Iceland has seen several periods with external deficits of a similar magnitude, what sets apart the recent episode from its predecessors is that external shocks did not play a role. Indeed, export volumes continued to expand, albeit at a moderate pace, and Iceland's terms of trade actually improved somewhat from 1996 to 2000, despite a worsening towards the end of that period. The major factor underlying the widening in the external deficit was a sharp swing in the private-sector saving/investment balance from broad equilibrium in the mid-1990s to a deficit of 13 per cent of GDP in 2000 (Figure 5). This was only to a limited extent offset by the emergence of a general government financial surplus. Although a rise in the investment ratio contributed, the main reason behind the deterioration in the private-sector financial balance was a decline in gross savings

Figure 5. **External balance and its domestic counterparts**
Per cent of GDP



Source: Statistics Iceland and OECD estimates.

by around 10 percentage points to 6½ per cent of GDP. This brought the national saving ratio to a historical low of around 14 per cent, despite a rise in government savings. The rapid unwinding of the external deficit reflects a swift reversal of these trends. With both a rise in savings and drop in investment, the private-sector financial deficit has all but disappeared. In terms of foreign trade flows, the correction of the external imbalance can be traced both to an acceleration in exports and contraction in imports. In contrast, the major factor behind the previous worsening in the external position was the buoyancy of imports associated with the strong expansion of domestic demand in the second half of the 1990s.

Reflecting these trends, the trade balance has moved back to surplus for the first time since the mid-1990s (Table 2). As noted, this reflects a strong rise in real net exports. The terms of trade have contributed relatively little. In 2001, exchange-rate depreciation led to strong price increases across the board, which were on average somewhat greater on the export than on the import side. The subsequent stabilisation of aggregate foreign trade prices conceals quite different sectoral developments. For instance, rising fish prices have meant that exports of marine products increased about twice as much in value as in volume terms in 2002. On the other hand, due to a recession-induced drop in world market prices, aluminium exports fell in value, despite a strong volume increase. Recently, the widening in the merchandise trade surplus has come to a halt, as the import shrinkage has faded (notably for consumer goods).

Table 2. **Current account**
Per cent of GDP

	1998	1999	2000	2001	2002[1]
Trade balance	**–4.5**	**–3.8**	**–5.7**	**–0.8**	**1.6**
Merchandise exports f.o.b.	24.1	23.9	22.7	26.4	25.7
of which:					
Marine products	17.5	16.1	14.4	16.4	16.1
Aluminium and ferro-silicon	3.8	4.2	4.8	6.0	5.5
Other industrial products	1.7	1.9	2.3	2.7	23.0
Merchandise imports f.o.b.	28.6	27.7	28.4	27.2	24.1
of which:					
Consumption goods	9.2	9.6	9.0	8.2	7.6
Investment goods	7.5	6.8	6.7	6.0	4.9
Non-factor services	**–0.1**	**–1.1**	**–1.4**	**0.3**	**0.1**
Exports	11.9	11.1	12.5	14.4	13.1
Imports	12.1	12.2	14.0	14.1	13.0
Factor income, net	**–2.2**	**–2.1**	**–2.9**	**–3.3**	**–1.8**
Transfers net	**–0.2**	**–0.1**	**–0.1**	**–0.1**	**0.1**
Current balance	**–7.0**	**–7.0**	**–10.2**	**–3.9**	**0.1**

1. First 11 months at annual rate for consumption goods.
Source: Central Bank of Iceland, *Monetary Bulletin*.

The service account, which is dominated by transportation and tourism, has also contributed to the improvement in the external balance, moving into slight surplus in 2001 when exchange-rate depreciation discouraged Icelanders from travelling abroad. A continuation of this trend has kept the service balance broadly stable, although international developments have adversely affected foreigners' tourism spending, especially during the post-September 11 period. The deficit on net factor income from abroad, which largely reflects interest payments on foreign debt, increased further in 2001 as the latter was boosted by large external deficits in previous years and the depreciation of the krona. It has, however, returned to previous levels in relation to GDP since then, given lower interest rates abroad and the decline in foreign debt due to the appreciation of the currency. Net external debt has fallen back below 100 per cent of GDP, but this is still much higher than the level of around 50 per cent prevailing in the mid-1990s. Nonetheless, it has sufficed for some credit rating agencies to confirm or upgrade their ratings outlook for Iceland, citing the flexibility of the economy and its capacity to rapidly sort out imbalances.

Short-term prospects

Following the recent slump, economic activity is expected to post a moderate recovery in 2003 (Table 3). This reflects some rise in export market growth, combined with a revival in domestic demand in response to monetary easing and

Table 3. **Short-term projections**
Percentage change, volumes (1990 prices)

	2003	2004
Private consumption	0.5	2.0
Government consumption	2.0	2.5
Gross fixed capital formation	10.6	11.2
Final domestic demand	2.8	4.1
Change in stockbuilding[1]	0.0	0.2
Total domestic demand	2.8	4.3
Exports of goods and services	4.0	4.5
Imports of goods and services	6.0	6.5
Change in foreign balance[1]	–0.7	–0.7
GDP	**2.1**	**3.5**
GDP implicit price deflator	2.8	3.2
Consumer price index	2.5	2.6
Unemployment rate (in per cent)	3.3	3.0
Current balance[2]	–1.0	–1.7
General government financial balance[2]	0.0	0.1
Short-term interest rate	6.0	8.0
Long-term interest rate	6.5	7.5

1. As a percentage of GDP in the previous year.
2. As a percentage of GDP.
Source: OECD.

a rebound in real disposable income. As households are expected to continue to try and strengthen their balance sheets, the upswing in likely to be gradual in the near term. Thereafter, however, there will be a boost to demand from the construction of a new aluminium smelter (along with the expansion of existing capacity), a hydropower station and partly related public investments. Construction of the hydropower plant and new public infrastructures is likely to begin this summer. This should bring growth back to above potential rates. Inflation is nevertheless expected to remain near the official target, given the balanced state of the economy currently and the assumption of monetary tightening from late 2003. On the other hand, a moderate current account deficit may re-emerge during the projection period.

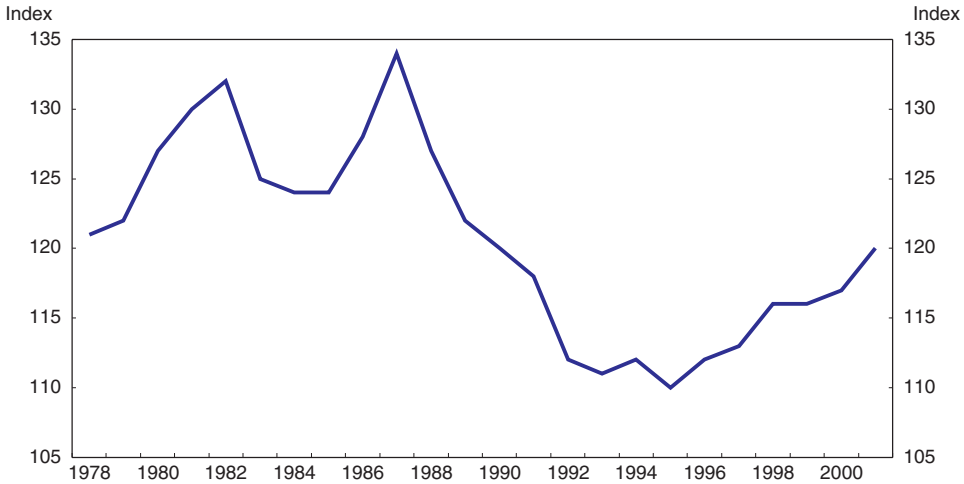
External developments would appear to pose the most important near-term risk to the outlook. Indeed, there are important downside risks to the projected expansion of Iceland's export markets. Moreover, the recently completed privatisation of domestic financial institutions and buoyant expectations regarding the power-intensive industrial development projects could push up the exchange rate, which is assumed to be stable in the projections, thereby affecting Iceland's currently favourable competitive position. On the domestic side, the high level of household debt could make for even slower consumption growth than anticipated and investment may take longer to recover. On the other hand, monetary policy-makers should stand ready to place more substantial restraint on activity to prevent

the economy from overheating if demand accelerates unexpectedly. Although construction work on the major power-intensive investment projects is likely to peak only in the middle of the decade, policy will need to tighten quickly if there are signs that a boom mentality gains hold.

Medium-term issues

Notwithstanding pronounced growth fluctuations and volatile inflation, the overall performance of the Icelandic economy has remained impressive. In terms of real GDP per capita, Iceland has lost ground somewhat since the 1980s, when it bettered the OECD average level by about one-quarter. Still, despite a continuing plunge in the early 1990s, it entered the new millennium with per-capita income around one-fifth above the OECD level, broadly unchanged from the ratio recorded ten years earlier (Figure 6). This rebound owes much to the policies pursued over the past decade. The successful disinflation of the early part of the 1990s and macroeconomic policies that emphasised stability and predictability – notably the consolidation of public finances – set the stage for the economic expansion that developed from the middle of the decade. At the same time, market liberalisation – in particular financial opening in the context of joining the European Economic Area – together with privatisation, public-sector rationalisation and other structural reforms fostered entrepreneurship, investment and economic growth.

Figure 6. **Relative GDP per capita**
1999 PPPs, OECD = 100



Source: OECD.

Table 4. **The macroeconomic impact of the construction of power plants and aluminium smelters**

Per cent deviation from baseline

	2003-06	2007-10	2003-10
GNP	4½	2	3¼
GDP	4¾	3	3¾
Average annual GDP growth	1¾	−1¼	¼
Investment	44¼	8¼	25½
Inflation	3½	−1½	1
Current account (per cent of GDP)	−6½	−3½	−5
Unemployment rate	−1	1½	¼
Exports	½	16	8¾
Memorandum items:			
Long-term impact on the level of:			
GNP			1
GDP			1¾

Source: Ministry of Finance.

As discussed above, the overheating and build-up of domestic and external imbalances during the rapid expansion of the second half of the 1990s have been swiftly corrected, and the economy seems set for a new period of growth. While recent performance bodes well for Iceland maintaining its high standard of living relative to the rest of the OECD, some weaknesses and distortions persist, which need policy attention. As discussed in the following chapter, Iceland's very high, predominantly foreign-currency-denominated, external debt, which will rise further with the expansion of power-intensive industries in coming years, involves some risks. And, although headway has been made in export diversification, it remains exposed to destabilising external shocks. Housing policy biases capital allocation away from productivity-enhancing business ventures to an important degree. The energy and agricultural sectors are still heavily distorted by government policies, and further liberalisation would lead to a significant improvement in consumer welfare. The trade-off between regional policy objectives and economic efficiency needs to be addressed. These issues and other unfinished business in the structural policy area are developed in Chapter IV.

The major challenge over the medium term will be to avoid an outcome in which investments in the energy sector and power-intensive industries lead to a new period of overheating and unsustainable external deficits. These investments will have a huge impact on the Icelandic economy (Table 4).[1] The projects are described in more detail in Chapter IV, which discusses longer-term issues related to them (such as the implications of the increased importance of aluminium exports). They comprise a new aluminium smelter in eastern Iceland, which would

commence production in 2007, as well as related hydro-power and infrastructure investments; and the enlargement of an existing smelter in the vicinity of the capital in two steps, with new production capacities available in 2005 and 2009. According to official estimates of their broader economic effects, total fixed capital formation would be boosted by half in the middle of the decade and by a quarter on average until 2010. Economic growth could reach 5 to 7 per cent in 2005-06, and the unemployment rate might drop to below 1 per cent. The current account could deteriorate by 6½ per cent of GDP during the construction period, adding 15 percentage points to the already high foreign debt, and the 4 per cent tolerance limit associated with the inflation target will probably be exceeded unless offsetting measures are undertaken. A liberal immigration policy would reduce labour-market and hence inflation pressures, but maintenance of economic stability will be above all the task of monetary and fiscal policies. The macroeconomic policy settings that could contribute to continued favourable economic performance are reviewed in the next chapter.

II. Macroeconomic policies

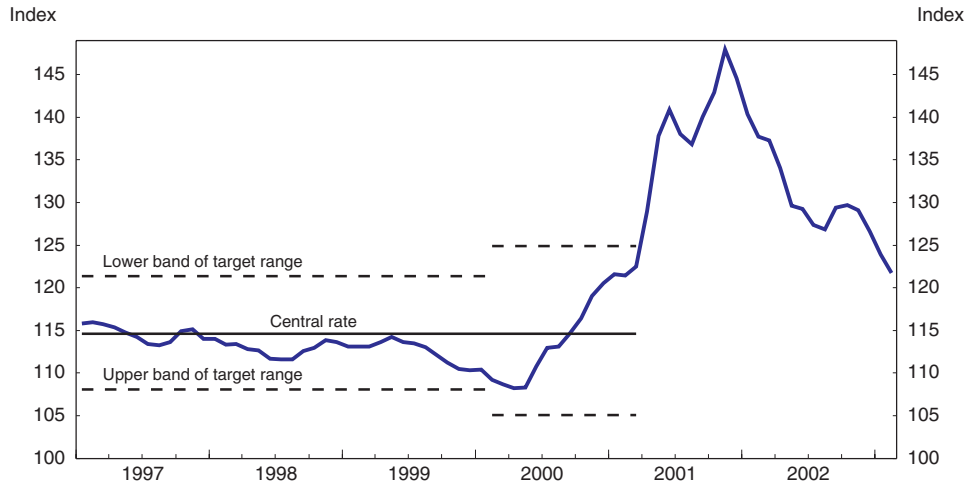
Macroeconomic management has helped overcome the domestic and external imbalances that developed during the period of overheating in the late 1990s. The floating of the currency and switch to an inflation-targeting framework in March 2001 has been successful to date. Although the exchange rate temporarily undershot its equilibrium value, the resulting redirection of activity towards exports contributed to the restoration of external balance. And, while price performance deteriorated early in the new regime, the weakening in activity generated in part through a tight monetary stance has helped to bring inflation back to its target. Given the substantial budget surpluses that were realised in the late 1990s, a government deficit has been avoided. The fact that the fiscal stance became slightly restrictive last year has helped and resulted in a more appropriate policy mix. At the current juncture, the difficult task facing policymakers is to balance a modest degree of near-term economic slack against the strong likelihood of a sharp acceleration in growth from next year onwards.

Monetary policy

A *new regime was adopted in* 2001 *to better anchor inflation and the external balance*

Since the early 1990s, monetary policy has been oriented towards maintaining low inflation, and through early 2001 the nominal anchor had been a nominal exchange rate target. Originally, the exchange rate was kept within a narrow band (2¼ per cent) around the target, but this band was widened to 6 per cent in 1995 and again to 9 per cent in February 2000. These widenings reflected, in part, the shortcomings of an exchange-rate target with the increase in capital mobility that had accompanied financial market liberalisation in the 1990s. But the widening in 2000 also stemmed from the challenges for monetary policy posed by an overheating economy with a current account deficit approaching 10 per cent of GDP. Maintenance of the exchange-rate target at that time was both incompatible with internal balance and a contributing factor in the mounting burden of foreign-currency-denominated debt. Following the widening of the target range, the nominal exchange rate depreciated nearly 10 per cent over the course of 2000 (Figure 7). Inflation rose significantly in 2000, to 5 per cent, and the economy remained overheated in early 2001.

Figure 7. **Exchange rate developments**
Monthly average of exchange rate index



Source: Central Bank of Iceland.

Against this backdrop, the government and the Central Bank announced their decision to adopt inflation targeting in March 2001. The Central Bank's objective is to target an inflation rate of 2½ per cent, as measured by the twelve-month change in the Consumer Price Index (CPI), with a tolerance band around this target (see Box 1). In conjunction with the new regime, the Central Bank was granted increased independence. These moves bring the monetary regime from a position of low independence (relative to other OECD member countries) to one more similar to those facing other central banks as well as more conducive to price stability. Box 1 provides further information on the inflation–targeting regime and a comparison with other countries' experience.

Inflation expectations drifted up in the first months of the new regime

The immediate effect of abandoning the exchange-rate target was a sharp drop in the value of the krona; the exchange rate fell 16 per cent between February and June (on a monthly average basis), then strengthened briefly. The depreciation led to an increase in inflation expectations, which averaged nearly 5 per cent over a five-year horizon in May and June 2001 (Figure 8). This level suggested that financial market participants anticipated that the upper bound of the inflation target range would be breached, on average, over this horizon. In addition to the effect of the falling value of the currency, incoming data on inflation showed an acceleration: in the six months ending in June, the CPI increased nearly 11 per cent

Box 1. Inflation targeting in Iceland: the framework and an early assessment

On 27 March 2001 the government announced that monetary policy would henceforth follow an inflation-targeting framework with a goal of price stability. Other economic targets, such as the balance on current account or full employment, are subsidiary and are to be pursued only when such goals facilitate achievement of price stability. The ultimate target for CPI growth is 2½ per cent, with a 1½ percentage point tolerance band. In order to allow for a gradual downward adjustment to the targeted inflation rate, upper branches of the tolerance band of 3½ percentage points and 2 percentage points were set for 2001 and 2002, respectively. The Central Bank began to publish a quarterly inflation forecast with an explanation of the factors influencing price developments in its *Monetary Bulletin*, with projections two years into the future. Any breach of the tolerance band around the target would trigger a special report to the government detailing the planned corrective action.

Under the new regime, the Central Bank implements monetary policy through adjustments of money-market interest rates, which impact demand through effects on the exchange rate and interest rates across the term structure. The primary instrument is the rate on 14-day repurchase agreements. In addition, a floor on overnight rates is set through the rate on credit institutions' current accounts (deposits of undisposed assets) with the Central Bank. An upper ceiling on the overnight rate is implemented through the overnight rate on loans from the Central Bank.

Figure 8 presents the twelve-month change in the Consumer Price Index along with the target and tolerance bands since 2000 and inflation expectations over the next five years as indicated by the spread between indexed and nominal yields on government bonds at that maturity. The shift to inflation targeting and greater independence for the Central Bank did not immediately confer credibility on the new regime. Instead, in contrast to experience abroad (Johnson, 2002), inflation expectations initially rose and indicated that at the outset agents were discounting further price increases outside the long-run target range (whose upper limit is 4 per cent per year), albeit within the temporary range set for the first two years of the regime. These expectations appear to have been driven largely by the weakness in the krona. They began to moderate as the current account deficit narrowed. The Central Bank maintained a restrictive level of real short-term rates during 2001 (see below), and the currency turned a corner late that year. It is also noteworthy that inflation breached the target band early in the new regime, but the consistently restrictive policy stance and the later strengthening in the exchange rate – combined with the Central Bank's firm position that the breach reflected past developments and should prove temporary – meant that the new regime's credibility was not impaired.

It is also instructive to compare Iceland's limited experience with that of other inflation targeting regimes. Twenty-two countries adopted inflation targeting between 1990 and June 2001. (Spain and Finland dropped out of the league of inflation targeters upon joining the European Monetary Union.) It is clear that Iceland

Box 1. **Inflation targeting in Iceland: the framework and an early assessment** (*cont.*)

is among the set of countries that adopted inflation targeting after already achieving reasonably low levels of inflation, and hence that the regime should be viewed as a method to institutionalise a previous move toward price stability (Table 5). It is also clear that a number of other countries have adopted inflation targeting as a means to achieve price stability after the previous regime had failed on this front. Seven of the inflation targeting countries currently appear to be in a transition phase with inflation higher than their long-run goals (Brazil, Colombia, the Czech Republic, Hungary, Mexico, Poland and South Africa). Among the remaining 12 countries, excluding Iceland, the average inflation target is 2.9 per cent and the target range is ±1.5 percentage points (Schmidt-Hebbel and Tapias, 2002); both data points are very similar to Iceland's regime, which has just a slightly lower inflation target.

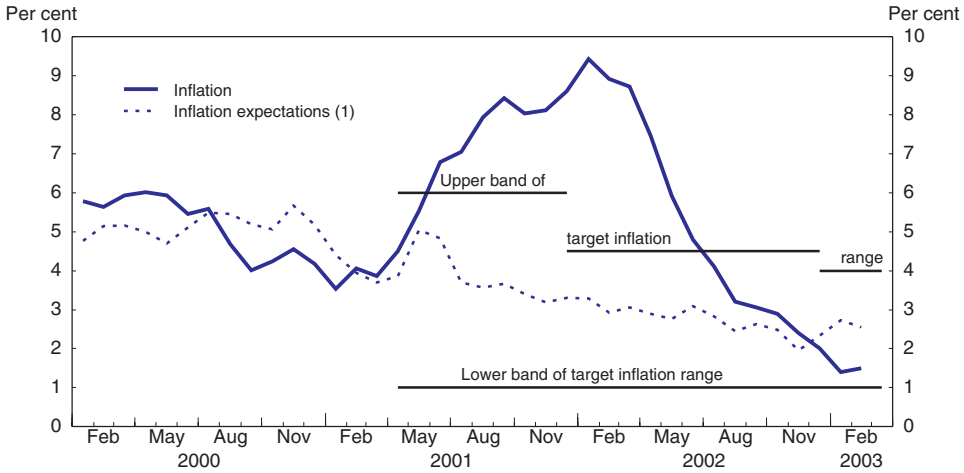
Iceland is a very small open economy and hence a useful comparison might be with New Zealand, the first country to move formally to inflation targeting. Overall, the regime in New Zealand has been a success (as is true elsewhere). In September of last year, a new target inflation range (1 to 3 per cent, *versus* the previous 0 to 3 per cent) was adopted in New Zealand, and at the same time the mid-point of the range was de-emphasised, so that inflation readings within the target range above or below the mid-point are no longer viewed as requiring policy adjustments. Iceland has a slightly broader target range with a higher mid-point (1 to 4 per cent). This may be preferable for Iceland: the recent past has demonstrated that external shocks can have significant exchange-rate effects, leading to sizeable and temporary inflation fluctuations. Moreover, the somewhat higher mid-point may be beneficial, despite the fact that deflation in Iceland is not even considered a remote possibility in the foreseeable future.

One change that may enhance transparency would be for Iceland to schedule regular policy meetings and announce decisions at such times. Currently, Iceland is the only inflation targeter that does not have such a schedule (Schmidt-Hebbel and Tapias, 2002). Regular announcements can improve communication during periods when policy changes are not occurring. After all, a decision to leave rates unchanged is driven by the outlook and has important implications for prices and activity.

at an annual rate, nearly three times the pace over the twelve months of 2000. However, the slope of the term structure, with nominal short-term rates in excess of 11 per cent in June while yields on 5-year Treasury notes were yielding a bit less than 10 per cent, indicated that market participants anticipated a downward drift in inflation and nominal interest rates and that much of the slippage relative to the inflation target was expected to be relatively short-lived.

The implementation of the new regime was accompanied by a cut in the short-term policy interest rate (the repurchase or repo rate) of ½ percentage point,

Figure 8. **Inflation and inflation expectations**



1. Inflation expectations defined as difference between nominal and indexed five-year Treasury bond yields.
Source: Central Bank of Iceland and Statistics Iceland.

Table 5. **Inflation rate at adoption of inflation-targeting framework**

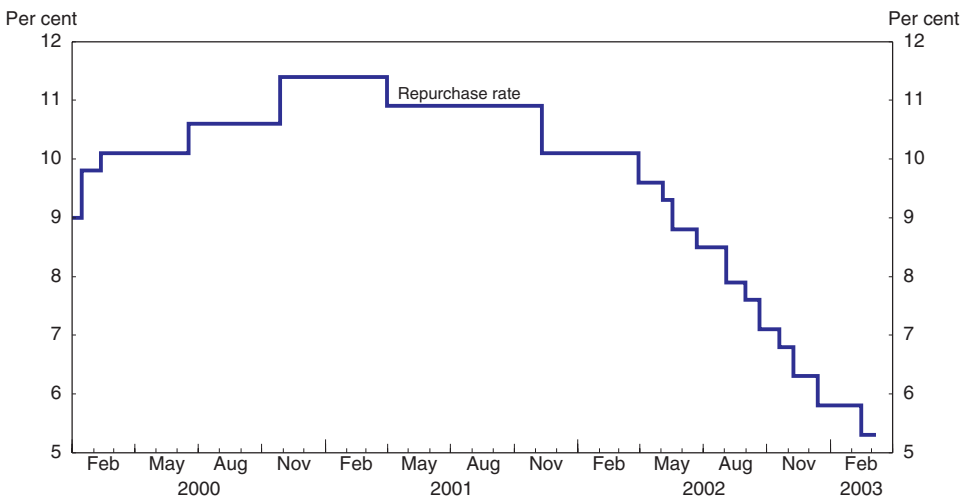
	Date of adoption	Inflation rate
New Zealand	March 1990	4.40
Chile	January 1991	29.00
Canada	February 1991	4.90
Israel	January 1992	18.50
United Kingdom	October 1992	3.60
Sweden	January 1993	1.80
Finland	February 1993	2.50
Peru	January 1994	41.54
Australia	September 1994	1.20
Spain	November 1994	4.70
Czech Republic	January 1998	10.12
Korea	January 1998	5.05
Poland	October 1998	7.03
Mexico	January 1999	17.56
Brazil	June 1999	2.30
Colombia	September 1999	9.93
Switzerland	January 2000	1.44
South Africa	February 2000	1.96
Thailand	April 2000	0.83
Iceland	**March 2001**	**4.30**
Norway	March 2001	3.10
Hungary	June 2001	10.76

Source: Schmidt-Hebbel and Tapias (2002).

to 10.9 per cent (Figure 9). This decision stemmed from the view that much of the inflation that derived from the fall in the krona over the previous year had already fed through to consumer prices, so that inflation would slow, and that economic growth would slacken. The subsequent drop in the krona and acceleration in inflation through June caused the Central Bank to hold off on further interest rate cuts, as the expectation that inflation would exceed the upper level of the target range in the latter half of 2001 was widely held and product- and labour-market slack was not yet apparent. In pursuing its inflation goals, the Central Bank can also intervene in the foreign exchange market (if this is necessary to achieve price stability or preserve financial stability). The Bank availed itself of this instrument in an attempt to avert a vicious spiral from developing. Exchange rate interventions occurred on 21 June 2001 – after which the krona appreciated for several months – and in the days between 28 September and 12 October 2001. But the krona then continued to depreciate sharply.

The fall in the value of the currency in late 2001 appears to have stemmed from increased concern over near-term inflation trends and economic weakness, and the turnaround since that time has reflected improved inflation prospects and the closing of the current account imbalance. By November, signs of a weakening in the labour market had become apparent, and the global economy was faltering, reflecting both the deepening of the contraction that had begun earlier and new weakness following the 11 September terrorist attacks in the United States. Thus,

Figure 9. **Central Bank's policy rate**



Source: Central Bank of Iceland.

the repo rate was lowered to 10.1 per cent. The krona dropped sharply, reaching a trough late in the month.

But *inflation then began to slow with economic weakness and an appreciating exchange rate*

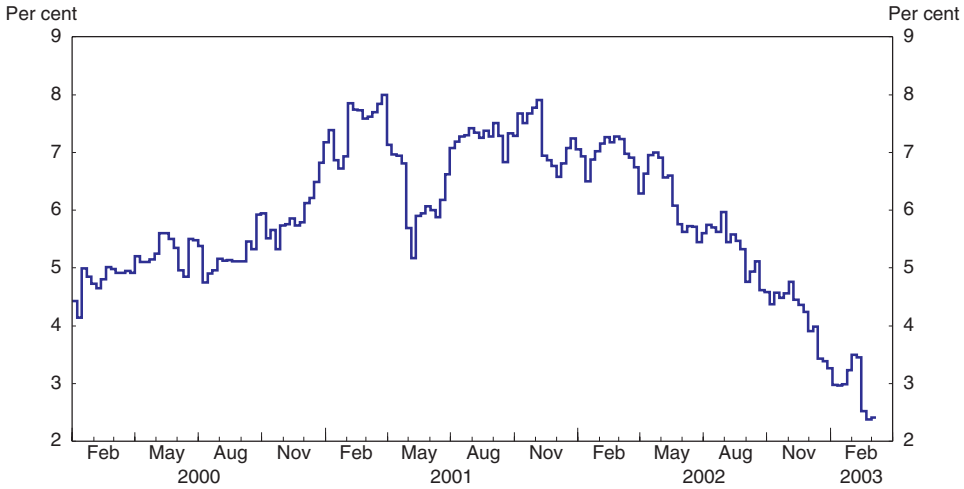
But a crisis was averted. Subsequently, incoming information began pointing towards a deceleration in inflation and a shift towards excess capacity rather than the overheating that had characterised previous years. By early 2002 it had become clear that the current account deficit had largely evaporated, and the decision by the labour unions to postpone a decision on whether to re-open wage negotiations until May contributed to further declines in inflation expectations. In February 2002, the differential between indexed and nominal securities with a 5-year horizon suggested that expected inflation was in the neighbourhood of 3 per cent. From the spring to the end of last year the Central Bank cut interest rates steadily (to 5.8 per cent at year-end), as inflation fell below the target level (with headline inflation falling to 1½ per cent by early this year). Persistently weak growth, both at home and abroad, also pointed towards further downward pressure on wage and price increases. Inflation expectations over the next five years have recently hovered at 2 per cent or slightly less.

I*nterest rates now support growth…*

The policy rate through much of 2001 was at a level that helped cool domestic demand, as is apparent from the high level of the real short-term interest rate (Figure 10). The cuts in the repo rate up to early 2002 largely followed the decline in inflation, maintaining a real short-term rate (based on the forward-looking measure from five-year government bonds) near 7 per cent. The restrictive stance was also apparent in the drop in the narrow money supply (M3) in 2001 – although M3 continued to advance at a double-digit pace, as did lending by banks and the credit system (Table 6). (It should be noted that movements in money and credit aggregates can often give a misleading impression of the monetary stance and this is particularly true in Iceland. For example, much of outstanding credit is indexed to prices or the exchange rate, and the pick-up in inflation and exchange rate depreciation in 2001 explain a good portion of the increase in credit that year). Since early 2002, policy moves have brought real interest rates down to maintain activity, and M1 has picked up. The current stance should allow growth in line with potential, as is appropriate given that the unemployment rate, output gap and current account suggest an economy roughly in macroeconomic balance.

However, policymakers must remain vigilant to the steady increase in debt levels, which only slowed during the recession and the period of restrictive interest rate levels. Foreign-currency-denominated debt has risen dramatically in the last five years – both in level terms and as a share of total debt. Household

Figure 10. **Real short-term interest rate**[1]



1. Defined as re-purchase rate minus inflation expectations from five-year treasury bonds.
Source: Central Bank of Iceland.

Table 6. **Money and credit growth**
Percentage change over previous year

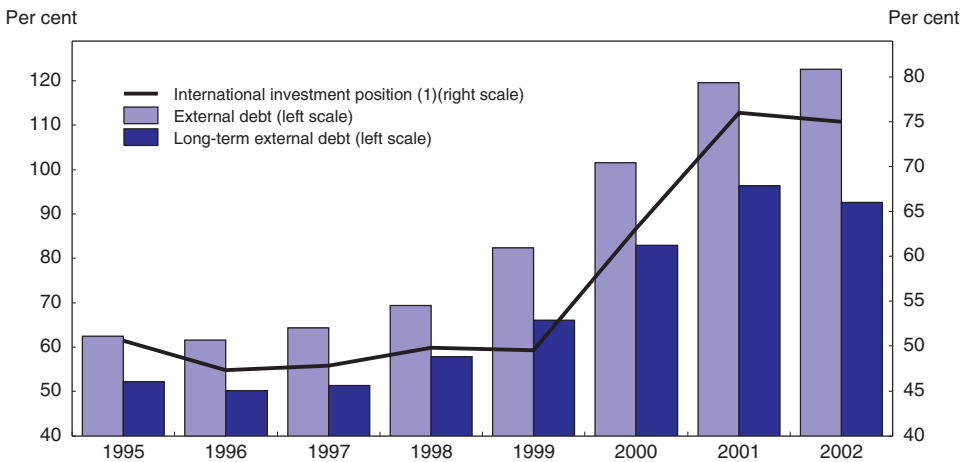
	1998	1999	2000	2001	2002		
					June	September	December
Money (M1)	20.3	19.4	4.4	–2.3	7.8	8.3	25.4
Money (M3)	15.2	16.9	11.2	14.9	14.0	14.6	15.6
Bank lending	28.0	23.9	45.1	17.8	11.9	10.8	10.8
of which: Claims on:							
Companies	31.6	24.2	58.6	15.7	3.6	6.8	2.8
Households	34.6	21.3	27.5	9.5	12.8	8.7	8.5
Government	–39.8	–31.8	–62.3	–142.1	91.8	–86.8	–665.2
Non-bank financial companies	103.9	40.2	39.6	9.5	1.6	8.9	7.8
All lending by credit system	15.1	17.1	17.6	18.8	6.0	5.8	n.a.
of which: Claims on:							
Companies	20.8	24.5	23.3	19.7	4.1	6.1	n.a.
Households	14.6	18.0	17.6	15.7	11.6	9.1	n.a.
Central government	–0.9	–9.5	–8.4	25.7	–8.8	–9.7	n.a.
Local government	19.3	13.1	15.9	24.1	9.8	6.1	n.a.
Memorandum: Nominal GDP	10.7	6.9	8.5	13.0	6.2	1.3	n.a.

Source: Central Bank of Iceland.

debt stood at 167 per cent of disposable income at the end of 2001, an increase of more than 30 percentage points from 1997. The debt/equity ratio of businesses excluding banks also rose by more than 30 percentage points over this period, to just over 225 per cent. High leverage will likely be an important factor restraining household and business spending in the near term, and loan defaults and bankruptcy rates may rise further; such indicators typically lag economic recovery, which in any event may begin in earnest only later this year. The attendant deterioration in the quality of banks' portfolios should prove manageable, unless economic weakness is more pronounced than expected, reflecting the efforts by banks to improve their capital positions over the past year (see Chapter IV).

Nevertheless, the deterioration in Iceland's external position during the boom years will continue to require prudent macroeconomic management. The closing of the current account deficit has stabilised the net international investment position at almost minus 75 per cent of GDP and the gross external debt-to-GDP ratio at 120 per cent (Figure 11). The external debt service burden equalled nearly 50 per cent of export revenue in 2001, double that of just a few years earlier. These figures will grow further with an expansion in power-intensive industry in the next several years, despite some improvement when the revenues from the recent sales of the two state-owned commercial banks are used to pay down external debt. While the projects may have sizeable benefits in terms of increased incomes, employment and regional goals (see Chapters I and IV), it is important to

Figure 11. **International investment position**
Per cent of GDP



1. The figure presents the negative of the international investment position.
Source: Central Bank of Iceland.

note that the large external debt, predominantly denominated in foreign currency, creates a risk that any weakness in the exchange rate could trigger repayment difficulties, heighten downward pressure on the krona and thus boost inflation while constricting domestic demand. This sequence was avoided in 2001 and early 2002, reflecting in part a nimble short-run policy response, which contributed to the turnaround in the exchange rate.

... but policymakers should plan to raise rates once growth accelerates

In one respect, the Central Bank faced an interesting dilemma late last year. While indications at that time were that inflation would decline and sluggish growth would continue, it was also apparent that growth and employment would be substantially stronger if the power plant and Alcoa aluminium smelter under consideration for eastern Iceland and/or expansion of the other two smelters in western Iceland were to begin in 2003 (see Chapter I). The Central Bank could have decided that the high perceived probability that such investments would proceed warranted a somewhat tighter policy stance in advance, given the lags between interest rate moves and their effect on activity. However, it was deemed more prudent to adopt a wait-and-see attitude, with policy settings based upon an assumption that such large-scale projects would not materialise combined with an expectation that any sharp changes in the outlook would require a new assessment of the appropriate level of the repo rate. As the strongest impetus from the aluminium projects would likely occur well after 2003 and monetary policy can be changed very quickly if necessary, this approach seems to have been sound.

Looking forward, monetary policymakers must now consider when the current series of expansionary moves has gone far enough. In the very near term, additional weakness in the labour market or expenditure may warrant some modest further cuts. However, the entire impact of the current policy rate – which represents a sharp drop in the real terms from levels of a year or even six months ago – has not yet been seen and the current policy stance is expected to support growth over the course of 2003 and 2004. If the currency were to strengthen in response to the expansion of power-intensive industry, inflation would probably remain subdued or even fall somewhat further through the middle of this year. However, the Alcoa project in eastern Iceland will lead to a large increase in demand and attendant tightening in the labour market in 2004 and beyond: the Ministry of Finance estimates that it could raise GDP over the 2003-06 period by 3 per cent, lowering the unemployment rate by ¾ percentage point and boosting inflation by 2 percentage points. While the increase in permanent income might justify a jump in consumption over the short run, the diversion of labour resources from other sectors will lower the marginal product of capital, which should be accompanied by some near-term reduction in investment outside the power-intensive industry. A significant tightening of monetary policy as well as a restrictive fiscal

stance are, however, needed to bring about this decrease. Such moves will also help lessen the degree to which foreign debt rises further, while helping to maintain inflation within the target range. If the demand pressures prove stronger than anticipated or, if to the contrary, current weaknesses in the economy are not offset by expansion in the electricity and aluminium sectors, the new inflation targeting framework provides the nominal anchor: policy should strive to maintain price increases in line with inflation objectives.

The fiscal stance

Central government surpluses maintained despite persistent spending overruns

The primary policy objective underlying the budget for 2001 (Tables 7 and 8) was the achievement of another sizeable fiscal surplus in order to curb domestic demand, restrain inflation and reduce the current account deficit. Substantial planned sales of government assets were to be used to repay debt and prepay future pension commitments to public employees. In the event, a budget

Table 7. **Central government expenditure**

	2001 Budget	2001 Outcome	2002 Budget	2002 Outcome	2003 Budget	2002/2001	2003/2002
	ISK billion					Per cent	
Current expenditure	92.2	91.7	100.8	107.2	114.1	16.9	6.4
of which:							
Wages	63.4	62.3	72.3	69.8	73.2	12.0	4.9
Pension fund	6.5	2.6	4.8	4.8	4.6	84.6	–4.2
Transfer payments	88.5	96.1	99.9	99.5	106.5	3.5	7.0
of which:							
Old age and disability	19.2	19.9	22.7	22.2	25.3	11.6	14.0
Health insurance	11.3	11.7	11.9	12.6	13.6	7.7	7.9
Unemployment insurance	2.3	1.6	2.3	3.1	3.2	93.8	3.2
Child benefits	4.4	4.6	4.9	4.8	5.4	4.3	12.5
Parental leave	2.4	2.9	4.5	4.6	5.3	58.6	15.2
Student loans	2.2	2.4	2.6	2.5	3.0	4.2	20.0
Agricultural support	7.0	7.3	7.0	7.1	7.3	–2.7	2.8
Equalisation	5.8	5.8	5.1	6.1	6.0	5.2	–1.6
Interest cost rebates	3.9	4.7	4.4	4.7	4.6	0.0	–2.1
Interest payments	16.2	17.9	16.4	16.6	15.5	–7.3	–6.6
Capital expenditure	22.2	23.0	22.3	21.7	24.0	–5.7	10.6
of which:							
Maintenance	5.4	5.7	5.7	5.9	6.1	3.5	3.4
Total expenditure	219.1	228.7	239.4	245.0	260.1	7.1	6.2
Per cent of GDP	30.3	30.7	30.6	31.1	31.9	–	–

Source: Ministry of Finance.

Table 8. **Central government revenue and budget balance**

	2001 Budget	2001 Outcome	2002 Budget	2002 Outcome	2003 Budget	2002/2001	2003/2002
	ISK billion					Per cent	
Tax revenue	217.1	211.7	221.3	230.2	237.0	8.7	3.0
of which:							
Personal income tax	51.3	58.7	61.1	69.5	69.1	18.4	–0.6
Corporate income tax	9.7	9.5	6.5	6.5	8.3	–31.6	27.7
Social security tax	20.2	21.9	23.4	24.0	27.7	9.6	15.4
Net wealth tax	10.7	10.6	11.3	11.1	7.9	4.7	–28.8
Value added tax	82.2	72.1	76.7	76.7	79.7	6.3	3.9
Other revenue	35.9	25.6	36.5	38.0	34.6	48.4	–9.0
of which:							
Interest income	12.4	14.7	13.4	13.4	13.5	–8.8	0.7
Asset sales	15.5	1.1	15.5	15.2	10.3	1 381.8	–32.2
Total revenue	253.1	237.4	257.9	268.2	271.6	13.0	1.3
Per cent of GDP	34.0	31.9	33.0	34.3	34.2	–	–
Budget balance	33.9	8.6	18.5	16.9	11.5	–	–
Per cent of GDP	4.6	1.2	2.4	2.1	1.4	–	–

Source: Ministry of Finance.

surplus of 1¼ per cent of GDP was achieved, nearly 3½ percentage points less than planned. About one-third of the difference can be traced to higher expenditure, despite much lower-than-envisaged accrued costs of the government-employee pension fund. Spending overruns in 2001 were most pronounced for debt service and various transfer payments (notably, on mortgage interest cost rebates, old-age and disability benefits, parental leave and health care). More than half of the deviation in expenditures from the budget can be traced to increased wages and prices associated with exchange-rate devaluation, which also affected interest expenditures and outlays in foreign currency. The most important factor on the revenue side was the shortfall of privatisation proceeds (in particular, because the sale of the government-owned telephone company could not be realised, see Chapter IV). In addition, the contraction in domestic demand entailed much lower-than-budgeted value added tax collections, more than offsetting higher-than-expected personal income tax proceeds.

The 2002 budget was prepared against the backdrop of a marked slowdown in economic growth. In these circumstances, the authorities considered it reasonable to aim for a much lower fiscal surplus than had been envisaged for the preceding fiscal year. They also felt that it was appropriate to cut taxes both to stimulate the economy and to create a more favourable tax environment in an international context. At the same time, they acknowledged that this would have to be accompanied by significant expenditure restraint if a deficit were to be avoided. Indeed,

the 2002 budget then called for a decline in spending in real terms. This was to be achieved by a strengthening of the budget implementation process, with new expenditures being met by reducing existing ones as much as possible (see next chapter). Tax changes included reductions in income and wealth taxes, partly offset by higher social security taxes (see Box 2). Since these measures are being implemented in stages over two years, tax proceeds in 2002 were expected to increase broadly in line with nominal GDP. The budget surplus was projected to be just below 2½ per cent of GDP, largely reflecting government asset sales. This objective does not seem to have been entirely achieved, but the surplus in 2002 is estimated to have easily exceeded that recorded a year earlier, despite significant deviations of spending from budgeted levels. According to preliminary estimates, expenditure growth exceeded 7 per cent, which is well above the inflation rate. Extra spending was quite generalised but particularly pronounced for wages and health insurance. It was to a large extent offset, however, by higher-than-projected revenues as a result of prudent assumptions underlying the budget. Tax collections exceeded

Box 2. Tax changes in 2002-03

The major elements of the tax changes introduced by the government with the 2002 budget in October 2001 are as follows:

- The corporate income tax rate was reduced from 30 to 18 per cent as of the beginning of 2002.
- The personal and corporate net wealth surtax of 0.25 per cent was abolished as of the end of 2002.
- The personal and corporate net wealth tax rate was reduced from 1.2 per cent to 0.6 per cent effective at the end of 2002.
- The tax-free threshold for personal net wealth taxes is raised by 20 per cent at the end of 2001 to offset the effect of the reassessment of real property values.
- The personal income tax rate was reduced by 0.33 percentage point in 2002 to offset an increase in local government income tax.
- The tax-free threshold of the personal income surtax was increased by 15 per cent on income earned in 2001 (effective in 2002).
- The taxation of rent subsidies was abolished from the beginning of 2002.
- The social security tax was increased by 0.77 percentage point (subsequently reduced to 0.5 point) from the beginning of 2003.

The effect of the tax measures is estimated to result in a gross revenue loss of some 7 billion kronur (less than 1 per cent of GDP) by 2003. The net effect on the budget is expected to be only about half as important, taking favourable dynamic effects on supply into account.

budget estimates by more than 1 per cent of GDP (implying a rise in the tax ratio), while proceeds from asset sales turned out to be close to expectations.

The 2003 budget contained few new initiatives. In keeping with their stated policy principles, the authorities intended to maintain a modest budget surplus similar to that achieved during the past two years. Despite the positive budgetary effects of the prospective economic recovery, this will be a challenging task, however. The implementation of the second round of the tax measures will lead to a marked slowdown in the growth of tax revenue, with net wealth tax collections estimated to shrink by almost one-third. Moreover, in February, the government announced a ISK 6.3 billion infrastructure investment programme in order to temporarily stimulate the economy this year and next. Although the increased cost is expected to be, to a large extent, financed by privatisation proceeds from the remaining government shares in two commercial banks, preserving a budget surplus will require exceptional expenditure restraint, the more so since some transfer payments will expand significantly as a result of prior commitments. This concerns, for instance, child benefits and the parental leave programme, which is fully implemented in 2003 with equal rights for both parents (see Box 3). At the same time, the authorities intend to maintain payments to the Government Employee Pension Fund at a high level, with a view to prefunding one-fourth of its obligations by the end of 2003. There are some expenditure items that should show a decline, however, such as interest payments. Still, experience in previous years suggests that there are substantial upside risks to the spending projections.

Modest local government deficits continue

In contrast to the central government, which has produced budget surpluses since the late 1990s, the local government sector has been in continuous deficit for more than a decade (Figure 12). The deficit has narrowed in recent years relative to GDP due to higher revenues and some restraint on capital spending, which outweighed the upward trend in the current expenditure-to-GDP ratio. As municipal finances tended to deteriorate in the second half of the 1990s despite the strong economic upturn, the government allowed local authorities to gradually raise the maximum municipal income tax rate to just over 13 per cent by 2002. In addition, appropriations to the Local Authority Equalisation Fund were raised significantly, largely to aid rural areas, more than doubling from 1998 to 2002. Spending pressures have, however, mitigated the effect of these moves on local government finances, preventing them from achieving aggregate budget balance.

While local government deficits appear to have been limited in recent years, data from 2001 onwards are still estimates and thus subject to revisions. Information available for the 15 largest municipalities shows expenditure overruns

Box 3. Parental leave

New legislation on parental leave was introduced in 1999 and has been implemented gradually from the beginning of 2001 to become fully effective from the beginning of 2003. Under the Maternity/Paternity and Parental Leave Act of May 2001, parents each have an independent right to leave of up to three months due to birth, primary adoption or permanent foster care of a child. In addition, parents have a joint right to three additional months, which may either be taken entirely by one of the parents or else divided between them. These rights lapse when the child reaches the age of 18 months (eight years in the case of adoption and foster care). The monthly benefit received during the parental leave amounts to 80 per cent of the parent's average wage (or income in the case of self-employed) in the preceding year. There are certain (wage-indexed) minimum benefits for part-time employed, people in educational programmes and non-working parents. For the latter two groups, benefits are financed by general taxation, while the employed pay a social insurance levy.

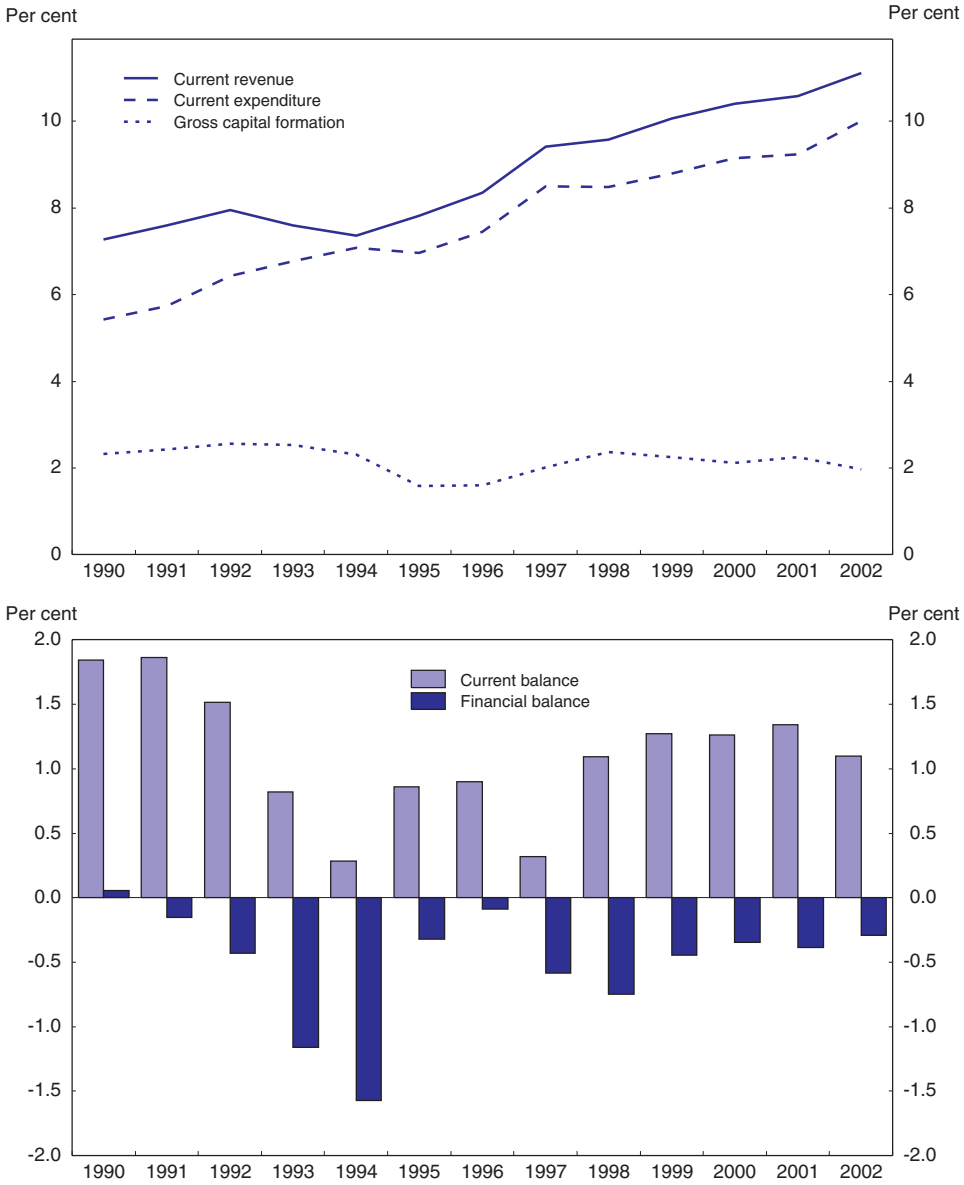
The programme's budget costs have exceeded expectations since its inception (Table 7). The estimate for 2003 (5.3 billion kronur or just under ¾ per cent of GDP) may again turn out to be on the low side. The generosity of the system (in particular, the uncapped nature of income compensation) may have been justified in its initial stage in order to provide sufficient incentives to participate (especially for fathers). However, after its full implementation, a careful evaluation of the scheme would clearly be appropriate, with a view to putting it on a sounder financial footing while preserving its desired effects. This may require higher contributions and lower and/or capped benefits.

to the extent of 16 per cent in 2001, but also much higher-than-expected revenues, suggesting that the overall fiscal position of local government may not have changed much. However, given the marked deviation from 2001 budgets, those for 2002, which called for another small aggregate deficit, might be viewed with some scepticism. Local governments have some scope for increasing taxes to compensate for continued spending overruns and avoid a renewed rise in deficits. Nonetheless, this will be difficult, given intentions at the municipal level to follow the central government's example and bring forward investments.

The general government surplus has been virtually eliminated

Given the limited changes in municipalities' fiscal position, the evolution of the general government financial balance largely reflects developments at the central government level. As noted, the substantial strengthening in central government finances during the 1990s has been eroded by the effects of the economic downturn, deviations of expenditures from budgeted levels, new outlays

Figure 12. **Local government finances**
Per cent of GDP



Source: Ministry of Finance.

and tax reductions. As a result, after reaching 2½ per cent of GDP in 1999 and 2000 (national account basis), the general government financial surplus has all but disappeared (Table 9). The fiscal stance, as measured by the change in the cyclically-adjusted general government financial balance, was expansionary in 2000 and 2001, leading to the re-emergence of a structural deficit in 2001. Since then, general government finances appear to have moved back to approximate structural balance. However, apart from the effects of the recently announced investment programme, there remains the risk of spending overruns described in the next chapter.

Government debt ratios have come down significantly since the mid-1990s, when they peaked at around 60 and 40 per cent of GDP for gross and net public debt, respectively. Again, this has largely reflected developments at the central government level, with local authorities' gross and net debt relatively stable at around 7½ and 5 per cent of GDP, respectively. The downward trend in debt ratios as a result of fiscal surpluses was interrupted in 2001, given the adverse effect of substantial currency depreciation (more than half of government debt being denominated in foreign currency). However, with the exchange rate strengthening, it has resumed since then, and gross and net general government debt are estimated to fall to 43 and 23 per cent of GDP, respectively, this year.

Table 9. **General government fiscal situation**[1]
Per cent of GDP

	1998	1999	2000	2001	2002	2003[2]
Revenues	38.9	41.7	41.4	40.1	41.8	41.9
Expenditures	38.4	39.3	39.0	39.6	41.6	41.9
Financial balance	0.5	2.4	2.5	0.5	0.2	0.0
Structural balance[2, 3]	0.1	1.8	1.2	–0.9	–0.1	–0.1
Net debt	31.8	24.2	24.1	27.4	23.5	22.7
Gross debt	49.4	44.8	42.2	46.9	44.1	43.4
Memorandum items:						
Central government						
Financial balance	1.1	2.6	2.5	0.7	0.4	–
Net debt	26.6	19.5	19.3	22.9	19.6	–
Gross debt	41.8	36.8	34.4	39.3	35.2	–
Local government						
Financial balance	–0.7	–0.4	–0.3	–0.4	–0.3	–
Net debt	5.3	4.7	4.8	4.6	–	–
Gross debt	7.6	7.7	7.6	7.5	–	–

1. National accounts basis.
2. OECD estimates.
3. Per cent of potential GDP.
Source: National Economics Institute; Ministry of Finance; OECD.

Challenges ahead

The current fiscal stance would seem to be appropriate, given the fragility of the incipient recovery. If the economic upturn were to be delayed, a temporary move into deficit would be acceptable. However, following the recent decision to bring forward public investments, the room for fiscal expansion would seem to have been exhausted and expenditure overruns must be avoided. Further ahead, the question is how fiscal and monetary policy should react to the economic effects of the major investment projects that will boost activity in the next few years. A tight fiscal stance will be required during the peak construction period, especially as regards public investment spending, in order to avoid bottlenecks and excessive labour market pressures. But monetary policy would seem to be the appropriate primary instrument to prevent the economy from overheating as it can react quickly to changing conditions.

As to the strategic orientation of fiscal policy, the authorities aim at fiscal surpluses throughout the business cycle in order to ensure a rapid reduction in public debt. While debt reduction produces benefits in terms of interest payments and thus frees up resources for other government spending, it is not obvious what the optimal public debt level might be. The government had earlier envisaged eliminating net public debt by 2004. Given the erosion of surpluses in recent years, this is now clearly out of reach, even over the medium term. But, in any case, Iceland's public debt is already fairly low by international comparison, and it would appear sufficient to ensure a continued decline in debt ratios by aiming at budget balance over the cycle. Moreover, while the government's objective to achieve budget surpluses is easily understandable to the public and may serve to enhance fiscal discipline, it is difficult to justify in terms of intergenerational balance. The Economic Institute of the University of Iceland has worked for a number of years on so-called generation accounts (see the previous *Economic Survey of Iceland*). Its latest estimates for the year 2000 confirm earlier conclusions that fiscal policy settings favour future generations. The question then arises as to what combination of revenue and spending ratios would be appropriate.

Corporate taxation has been reduced substantially over the past decade. Following the recent cuts, the corporate income tax rate is now one of the lowest in Europe; this is deemed necessary by the authorities since the Icelandic enterprise environment is hampered by its distance from foreign markets, higher transport costs and the small size of the domestic market. Personal tax rates, however, are still higher than in the late 1980s. This is because central government cuts since the mid-1990s have been partly offset by the ever-increasing taxation needs at the local level, partly linked to the take-over of the operation of primary schools but also to a general expansion of services by municipalities.

If it is agreed that further tax reductions are desirable in order to improve conditions for businesses and ultimately achieving a higher standard of living

– and the government is committed to moving in this direction – the challenge for policymakers will be to ensure an end to the upward trend of the public expenditure-to-GDP ratio. This requires enhancing both control over and effectiveness of government spending as discussed in more detail in the following chapter.

III. Controlling public spending

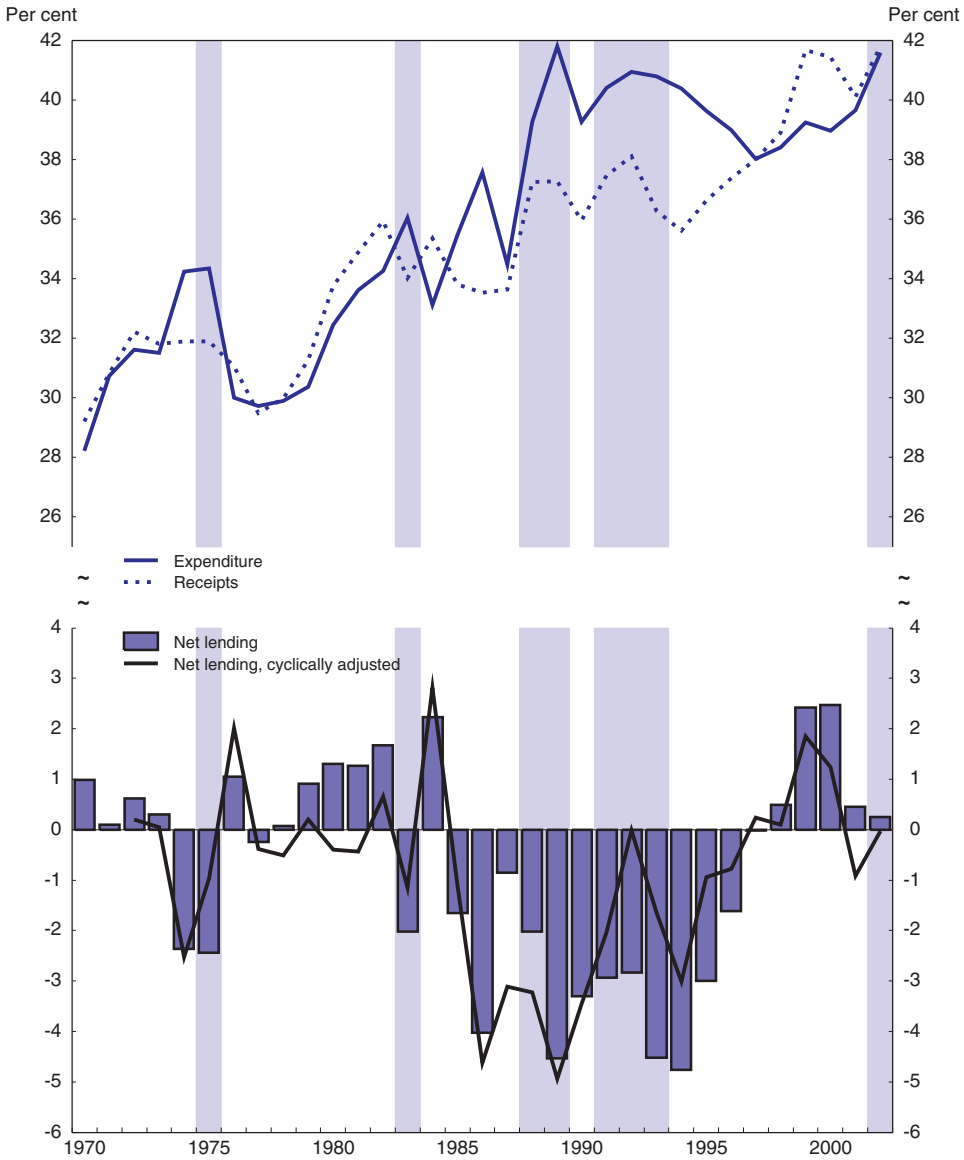
In Iceland, relatively little attention was paid to the size, scope and function of government until the late 1980s, when growth slowed and major fiscal imbalances emerged. Subsequent budget consolidation efforts and public-sector reforms temporarily reversed the upward trend in the public expenditure-to-GDP ratio. But in recent years the ratio has tended to edge up again. And while total public expenditure is not high by international comparison – around the OECD average and below the levels in Iceland's Nordic neighbours – many Member countries have been successful in reducing the size of government over the 1990s. This highlights the need for enhancing spending control through further reforms. Indeed, although the expenditure management system has undergone significant changes over the past ten years or so, much remains to be done to increase budgetary discipline and improve the system's ability to contain social-spending pressures, which will intensify as the population ages. In particular, weaknesses that need to be addressed would seem to relate to the budget process and the lack of a medium-term expenditure policy, along with insufficient performance measurement and poor accountability of public-sector managers, not least at the local-government level.

After setting out past and prospective public expenditure trends in an international context, this chapter reviews the success of various reforms that have aimed at improving spending discipline and effectiveness as well as aspects of some of the programmes that absorb a large proportion of government resources. The final section of the chapter presents conclusions and policy recommendations.

Public expenditure in perspective

Public expenditure rose gradually from below 30 per cent of GDP at the beginning of the 1970s to around 35 per cent in the mid-1980s (Figure 13). Taking account of cyclical influences, government finances were in broad balance during that period. The situation changed dramatically in the second half of the 1980s, when the expenditure ratio jumped to as high as 42 per cent and the budget moved into substantial deficit. To some extent, this reflected weak economic activity – Iceland has comparatively powerful automatic stabilisers (Nordic Council

Figure 13. **General government expenditure, receipts and balance**[1]
Per cent of GDP



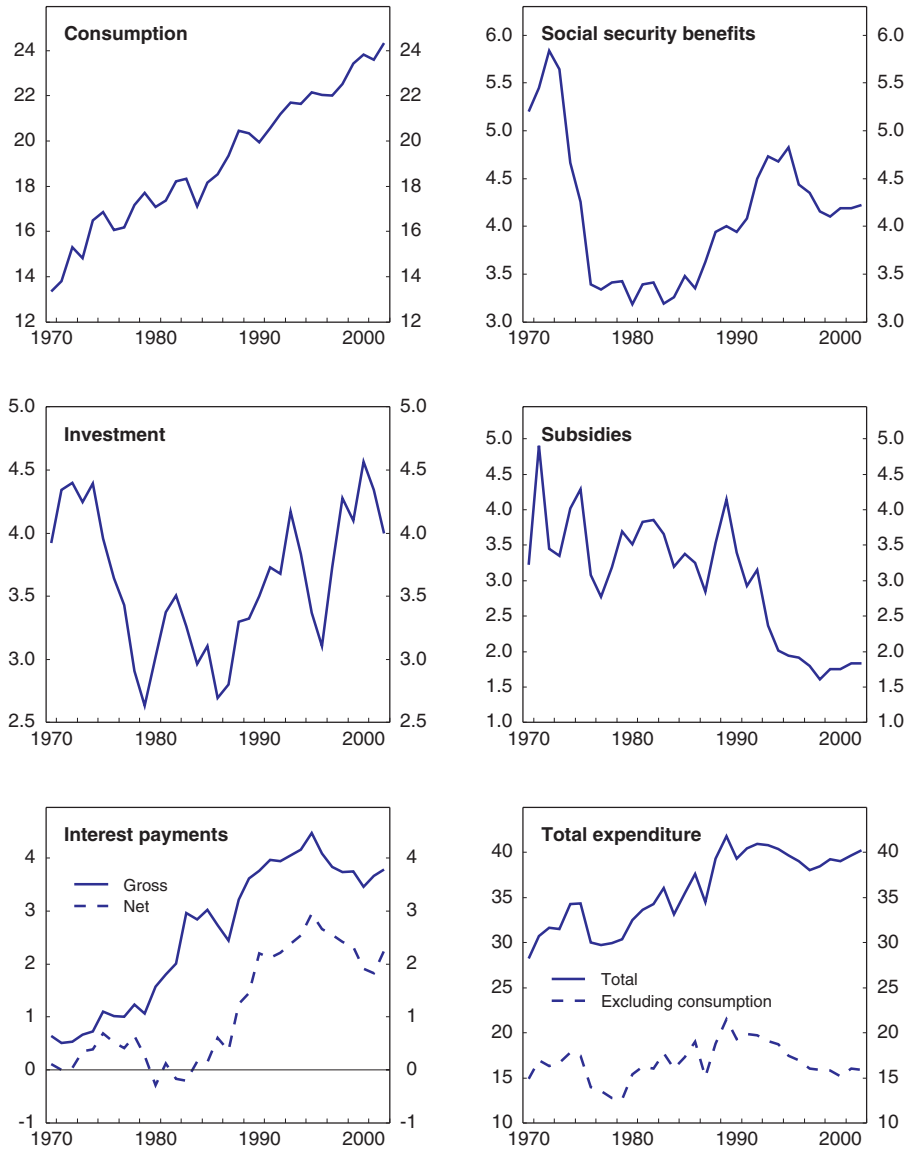
1. Shaded areas are recessions.
Source: OECD and OECD estimates.

of Ministers, 1997) – but discretionary government intervention to arrest the rise in unemployment accounted for the bulk of the deterioration in the fiscal position. Despite continued economic slack, policy makers changed course in the early 1990s, implementing expenditure cutbacks worth nearly 3 per cent of GDP. The public spending ratio reached a low of 38 per cent of GDP in 1997 when the budget deficit was eliminated. Since then, it has moved back to 42 per cent, mostly due to discretionary action. The budget has nevertheless remained in surplus given a substantial increase in the revenue ratio, a trend which has only been arrested recently.

Budget consolidation efforts in the 1990s concentrated on social security benefits and subsidies, while government spending on goods and services was less affected (Figure 14). Public consumption, in particular, continued to rise relative to GDP due to a persistently growing wage bill, largely accounting for the increase in the overall expenditure ratio over the past 30 years. As a result, consumption has approached the high levels recorded in other Nordic countries, although public employment in Iceland (as a proportion of total employment) is not especially high by international comparison (Figure 15 and Box 4). In this regard, it is worth noting that Iceland, despite being a NATO member, has no army and, therefore, no defence outlays, which absorb substantial resources elsewhere. On the other hand, the large size of the country relative to its population and cost of preserving a decentralised settlement pattern must not be overlooked. The public investment ratio has been very volatile but exceeded the international average throughout the 1990s, when capital outlays abroad tended to decline relative to GDP. High spending on goods and services is offset, however, by low transfer payments compared with other OECD countries. This, in turn, is attributable to relatively low expenditures on old-age and survivors pensions and sickness and unemployment benefits as a share of GDP (Table 10), reflecting favourable demographics and labour-market conditions but also the move to a funded occupational pension system. In contrast to income transfers, public spending on merit goods (education, health care and services for elderly, disabled and families) is above the OECD average and close to the peak levels recorded in Nordic countries.

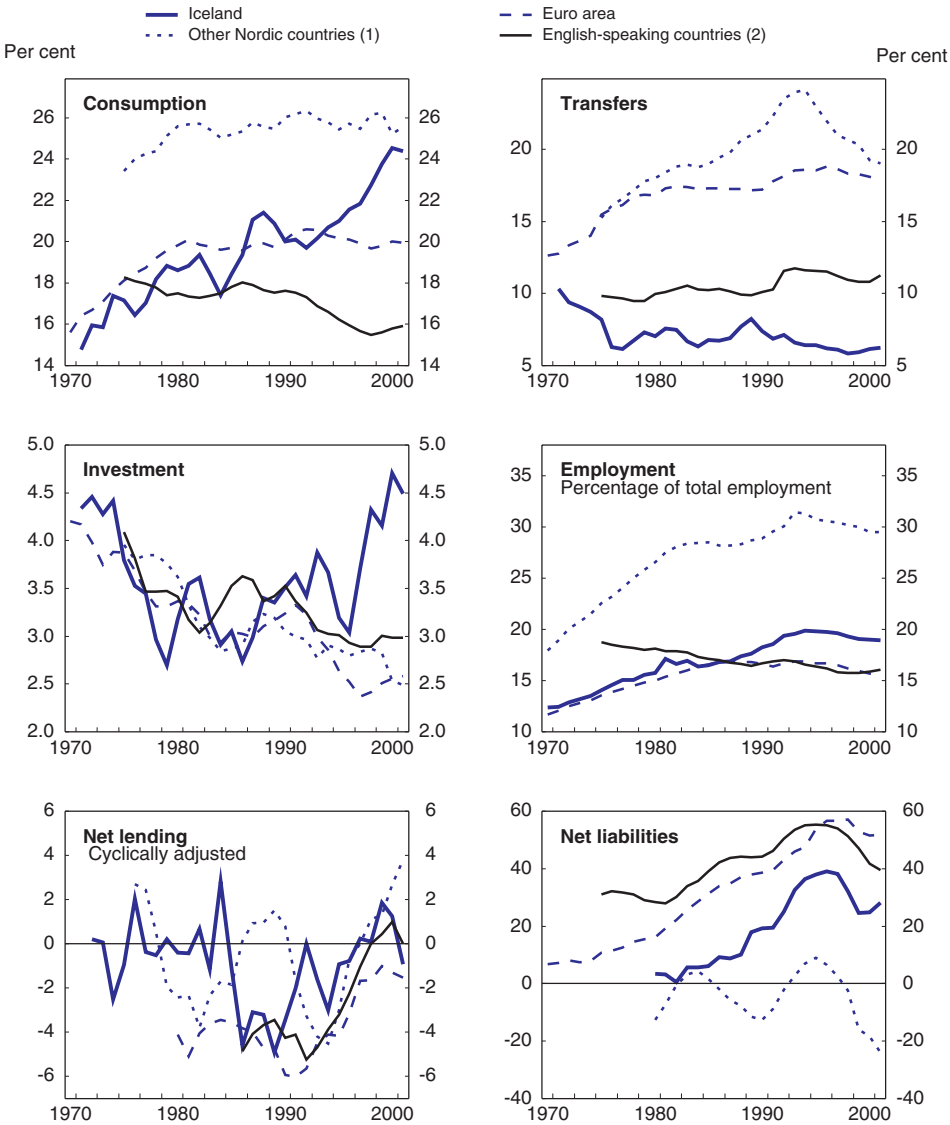
Pressures on public spending are likely to intensify in the period ahead. In the near term, major investment projects in power-intensive industries and regional development policies will involve expenditure on infrastructure. New social policy initiatives (such as compensation for paternal leave without an income limit) have proved to be very costly, as discussed in Chapter II, burdening future budgets. Changes in public-sector management (such as the move to activity-based financing, see below) should promote cost efficiency, but they may also raise the supply of public goods and services above the social optimum, if price signals are not effective. In the long run, upward pressures on social transfers are likely to gain further momentum due to population ageing. Though starting from a rather favourable position, the expected increase in the old-age dependency ratio

Figure 14. **Trends in public expenditure, 1970-2001**
Per cent of GDP



Source: OECD.

Figure 15. **General government spending by international comparison**
As a per cent of potential GDP



1. Weighted average (1995 GDP and PPPs) of Denmark, Finland, Norway and Sweden.
2. Weighted average (1995 GDP and PPPs) of Australia, Canada, New Zealand, United Kingdom and United States.
Source: OECD and OECD estimates.

Box 4. The trend increase in Iceland's share of public consumption in GDP

Even among Nordic countries, Iceland stands out as the only country to have experienced a trend rise in the ratio of public consumption to GDP over the past two decades. In 1980, government consumption spending was less than 18 per cent of GDP, similar to Finnish and Norwegian outcomes, but some 10 percentage points below those in Denmark and Sweden. However, by 2001 the situation had shifted: Iceland's ratio had jumped to over 23½ per cent, precisely the average in the other four nations (Figure 16). Indeed, Iceland has become the OECD country with the third highest level of public consumption relative to GDP, up from 11th place in 1990 and 16th position in 1980.

Looking beyond the aggregate level of such spending, it can be seen that the upward trend is attributable mainly to wage payments to civil servants, although non-wage outlays were also on a rising trajectory until 1995. Elsewhere among the Nordics, the government's wage bill was either falling in relation to GDP (Denmark, Sweden and Finland) or stable (Norway), while the non-wage component was flat, except in the case of Finland.

The ratio of the government wage bill to GDP can be seen as the product of three separate terms: the share of government employment in the total; compensation per employee relative to the economy-wide average; and the share of economy-wide compensation in overall GDP. Growing wage payments reflect a rising government employment share until 1994, rising relative compensation since 1992 (especially in 1997-98)* and, to a lesser extent, an upward shift in labour's overall income share since 1988. In the other Nordic countries, any tendency for the government's employment share to rise up to 1993-94 (as in Finland and Norway) was partly offset by a fall in relative compensation, a trend that has continued everywhere in stark contrast to Iceland.

By the end of the period the low civil service employment share in Iceland was entirely offset by higher relative compensation. Norway enjoyed low relative compensation and a low aggregate wage share, as well as modest non-wage government consumption, while Finland benefited from a low aggregate wage share and a relative compensation outcome well below Iceland's. It should be noted, however, that high relative compensation does not necessarily imply that public-sector wages are out of line with performance.

* Iceland does not provide total government employment other than on a full-time equivalent basis. Thus, in order to make the cross-country comparisons, this time series was adjusted by the ratio of economy-wide employment on a headcount basis to the same figure in full-time equivalents. This assumes that average hours per person are the same in the two sectors. This will generate misleading results when higher compensation is offered to public employees explicitly to offset longer working hours, as, for example, occurred with teachers in the late 1990s.

Table 10. **Major current government outlays: an international comparison**

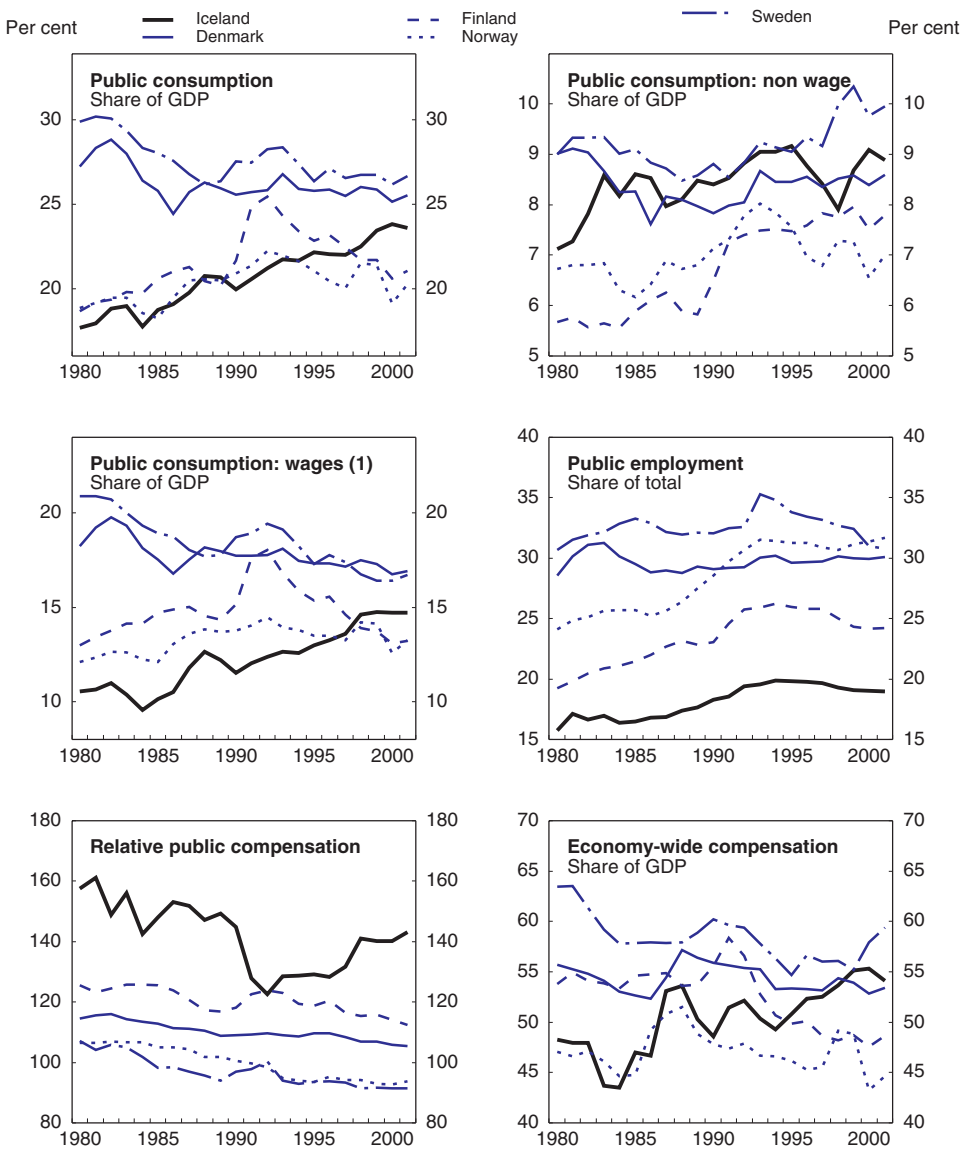
1999,[1] per cent of GDP

	Merit goods					Income transfers							
	Total	Education	Health	Services for elderly and disabled	Family services	Total	Old-age pension	Survivors pension	Disability	Sickness	Family cash benefits	Unemployment	Housing and other benefits
Iceland	**16.8**	**6.5**	**7.0**	**2.1**	**1.1**	**8.2**	**3.8**	**0.5**	**1.5**	**0.1**	**1.2**	**0.5**	**0.5**
Denmark	18.8	6.8	6.8	3.0	2.2	17.8	6.8	0.0	2.0	0.7	1.5	5.0	1.8
Finland	14.0	5.7	5.3	1.5	1.4	18.3	7.0	1.0	3.1	0.4	1.9	3.9	1.0
Norway	18.6	6.8	7.1	3.4	1.4	15.2	6.0	0.4	2.8	1.5	2.2	1.4	0.9
Sweden	18.6	6.6	6.6	3.7	1.7	18.9	7.5	0.7	2.4	1.1	1.6	3.9	1.7
Belgium	11.4	5.0	6.1	0.1	0.2	18.1	7.3	2.5	1.7	0.4	2.0	3.8	0.3
France	15.0	5.9	7.3	0.7	1.2	19.7	10.6	1.6	1.1	0.5	1.5	3.1	1.3
Germany	13.7	4.4	7.8	0.7	0.8	18.0	10.5	0.5	1.4	0.3	1.9	2.6	0.8
Italy	10.8	4.8	5.5	0.2	0.3	19.1	12.8	2.6	1.0	0.7	0.6	1.4	0.0
Netherlands	12.1	4.5	5.9	1.3	0.4	16.1	6.2	0.8	2.4	1.0	0.8	3.9	1.0
Spain	10.2	4.4	5.3	0.3	0.1	13.9	8.1	0.8	1.3	0.9	0.3	2.2	0.2
United Kingdom	11.6	4.6	5.6	0.8	0.5	17.8	9.8	1.0	2.7	0.1	1.7	0.6	1.8
Canada	12.1	5.5	6.6	. .	. .	11.2	5.0	0.5	0.9	0.1	0.8	1.4	2.6
Japan	9.8	3.6	5.6	0.3	0.3	8.4	5.7	1.1	0.5	0.1	0.2	0.7	0.2
United States	11.0	4.8	5.8	0.0	0.3	8.2	5.1	0.9	0.9	0.2	0.2	0.4	0.5
EU average[2]	12.8	4.9	6.4	0.7	0.7	17.9	9.9	1.3	1.6	0.5	1.4	2.3	0.9
Mean	12.7	5.1	5.9	1.0	0.8	16.8	8.2	1.3	1.8	0.6	1.4	2.5	0.9
OECD average[2]	11.5	4.7	6.0	0.4	0.4	12.3	7.0	1.1	1.2	0.3	0.8	1.2	0.7
Mean	11.9	5.1	5.8	0.8	0.6	14.4	6.9	1.0	1.7	0.6	1.3	1.8	0.9

1. Or 1998 when not available. Education data always concern 1998.
2. Weighted average based on 1995 GDP and purchasing power parities (PPPs), excluding Korea, Luxembourg, Mexico and the Slovak Republic.

Source: OECD, Social Expenditure Database and OECD, *Education at a Glance* – OECD *Indicators*, 2001.

Figure 16. **Public consumption share in a Nordic context**



1. The wage component of public consumption as a share of GDP can be expressed as the product of three terms: public employment in relation to total employment; relative public compensation per employed person; and economy-wide compensation as a share of GDP. These terms are given in the following charts.

Source: OECD and OECD estimates.

during the first half of the century is broadly similar to the OECD average. Current arrangements for income support for the elderly (in particular, the increase in the funded occupational pensions) suggest that public pension spending could rise by only half a percentage point of GDP during that period, although it may exceed this level temporarily. This is much less than the projected OECD average of 3 to 4 percentage points. However, the age-related rise in spending on health- and long-term care is likely to be much closer to the OECD benchmark (also 3 to 4 percentage points of GDP; see *e.g.* the OECD *Economic Outlook* 72). Given the fact that privatisation receipts will cease to be a major source of financing and the desirability of arresting the long-term rise in the tax-to-GDP ratio, there is a clear need to address the longstanding problem of expenditure creep and to strengthen public spending management further.

Assessing public expenditure policies

Iceland has only two administrative levels of government, the municipalities and the central government. At the central government level, the Prime Minister's Office co-ordinates a few high-priority activities (such as privatisation, regulatory reform and policies related to the information society), but the Ministry of Finance has in practical terms been most involved in policy co-ordination, and public-sector reforms have tended to reinforce this role. As in Sweden, each ministry has jurisdiction over a number of agencies. There are currently around 230 executive agencies (nearly one agency per 1 000 inhabitants), and almost half of them have less than 20 employees. The central government, including agencies, accounts for about half of government employment and around three-quarters of general government spending (reflecting an above-average share of transfers).

For about a decade, it has been the government's policy to make the public sector a purchaser of services on behalf of the taxpayers rather than a provider of goods and services and of employment. This has been reflected in a privatisation programme, which is now largely completed. At the same time, various initiatives have been taken to reform the public sector, which have aimed at decentralising decision-making, improving the performance of government agencies and increasing the accountability of public servants. As to expenditure policies proper, they include the introduction of "frame-budgeting" (see below), new rules on budget execution and monitoring, improved financial reporting and increased emphasis on performance management and measurement.

A comprehensive assessment of how well existing frameworks and policies have performed in ensuring or encouraging good spending outcomes is difficult both because of the scarcity of relevant indicators and the recent or ongoing nature of the implementation of some reforms, which partly explains the lack of national evaluation. The following section attempts, nonetheless, to identify areas where apparent weaknesses would seem to deserve further attention and possibly

policy measures. To this end, it reviews, in turn: the budget process; performance and human-resource management; the use of market mechanisms; problems specific to local government; and social spending, which accounts for the bulk of overall expenditure and is rising rapidly.

B*udgeting*

Over the past ten years or so, the budget process has undergone substantial changes, with a view to enhancing the control and effectiveness of public spending. "Frame-budgeting" has been applied since 1992. This system entails a "top-down" approach in preparing the budget and is meant to enhance the policy-making role of the government and increase overall fiscal discipline. Its main feature is that expenditure frames (ceilings) are set for each ministry early on in the budget formulation phase (that is, in April of the preceding year). Each minister is then responsible for allocating available funds to agencies and projects under his/her auspices, in accordance with the limits set by the frame. The so-called "frame-decision" is made by a special committee, which consists of the Prime Minister, the Minister of Finance and two other ministers (usually the leaders and vice-chairmen of the coalition partners). It is preceded by a decision on the overall fiscal target (in recent years, a budget surplus), which determines the aggregate level of expenditure on the basis of economic and budget projections prepared, and policies proposed, by the Minister of Finance. The latter also makes recommendations about the allocation of funds to new projects or increased levels of operations in the light of prioritised proposals submitted by the line ministries. After a re-evaluation of economic prospects and government revenue estimates in August, a draft budget is presented to Parliament at the beginning of October, and, following amendments, the final vote on the budget for the coming year takes place in December.

"Frame-budgeting" has been supplemented by other changes aimed at promoting the efficient use of government appropriations and containing the rise in spending. As of 1992, some flexibility was introduced regarding the treatment of year-end surpluses and deficits by defining how, and to what extent, they may be carried over into the next fiscal year. Agencies are thus in a better position to plan on a longer-term basis, instead of being compelled to spend available funds under an end-of-year deadline. Conversely, overspending can be transferred as debt to the following fiscal year with the consequent reduction in disposable funds. A new regulation issued by the Ministry of Finance in 2000 aims to tighten spending control further by making it obligatory for agencies to report to the relevant ministry whenever expenditure has exceeded the target by 4 per cent in a given period. It also clarifies under what circumstances budget overruns could be considered unavoidable.

Recognising that a longer-term orientation of fiscal policy could strengthen budget discipline, the Ministry of Finance began to produce four-year fiscal projections in the mid-1990s. These are submitted to the above-mentioned special ministerial committee before the frame-decision and published together with the budget bill in order to draw the attention of the legislature and the public to medium-term fiscal dynamics and the implication of demographic developments. As part of this exercise, a report on generational accounts was issued in 1997 to illustrate the impact of the prospective decline in the share of the working-age population on government finances, given the health- and welfare system in place. However, although the Ministry of Finance prepares such projections, budget decisions continue to be made over a one-year horizon.

Changes to financial reporting have also given a more forward-looking orientation to fiscal policy – notably the increased use of accrual accounting, which illustrates the longer-term consequences of expenditure decisions. However, efforts to enhance fiscal transparency have to be seen as a part of the broader programme of improving public-sector management. The 1997 Government Financial Reporting Act reorganised the budget, regrouping individual agencies and functions of the central government according to international accounting standards and calling for a budget presentation both on a cash and a modified accrual basis. All financial obligations entered into over the course of the year, whether or not they are paid, are registered as outlays in that year. Substantial differences between cash and accrual accounting arise, in particular, from public employee pension rights and the timing of interest payments on outstanding debt (much of which is indexed). In addition, items previously subtracted on either the revenue or expenditure side of the budget have been moved to the other side, grossing up both revenue and expenditure. Moreover, the accounts of government agencies have to be prepared in accordance with private-sector principles, with the important exception that assets are in most cases written off in the first year. This does not apply to state enterprises, however, which depreciate their capital assets in line with private-sector accounting standards.

There is no doubt that the changes to the budget process have had positive effects, contributing to the improvement in the fiscal situation over the past decade. However, as noted, after a period of austerity in the mid-1990s that eliminated the budget deficit, expenditure creep has resurfaced. This suggests that several weaknesses in the fiscal framework persist. These appear to concern both the preparation and execution of the budget, as well as the absence of a sufficiently binding medium-term orientation of the policy framework.

Although the "frame method" has improved budget planning and decision-making, its effectiveness has been undermined by the fact that expenditure targets have tended to be modified during the parliamentary phase of the budget process. Fiscal discipline has clearly tightened insofar as adjustments made to the

frames during the budget formulation phase – that is, between the "frame-decision" and the presentation of the draft budget in Parliament – have become much smaller over the past decade. However, subsequently, control over expenditure targets is eroded. It might be argued that this is legitimate because Parliament is free to make final decisions. But, in fact, the bulk of proposed changes at that stage, calling for spending increases, can be traced to the government itself *via* the budget committee's majority. In other words, the government does not stand by its frame decisions once the budget formulation process is over. In a recent report on the budget process, the National Audit Office has drawn attention to the Swedish system of having a spring fiscal bill, whereby the Swedish government submits its "frame-decision" to the Riksdag, noting that in Iceland this decision is neither made public nor discussed by Parliament. The Office recommends that the budget discussion should be initiated by a parliamentary vote on the frames, which would determine the spending ceilings for ministries, thereby limiting the scope for *ad hoc* initiatives that jeopardise spending control under the "frame-method".

Moreover, despite efforts to improve the execution of the budget, fiscal slippage has diminished but persisted, with central government expenditures exceeding budgeted levels by about 10 per cent (nearly 3 per cent of GDP) on average during the past five years (Table 11). These figures are on an accruals basis, reflecting factors such as the re-evaluation of pension liabilities or tax claims, and it could be argued that they are not a good gauge of spending management. On a cash basis, spending overruns have been less than half of those reported on an accrual basis over the last five years, but they have shown no clear signs of abating. According to the Icelandic constitution, no payment from the exchequer can take place without prior approval of Parliament. An exception to this rule has been the permission for the Minister of Finance to allow certain additional spending when budgetary appropriations have proved to be insufficient. In

Table 11. **Proposed, voted and realised government spending**

	ISK billion					Per cent	
	Budget bill	Voted budget	Outcome	Difference		Difference	
	(A)	(B)	(C)	B-A	C-B	B-A	C-B
1998	162.7	165.7	189.6	2.7	23.9	1.7	14.4
1999	179.2	182.4	199.0	3.2	16.6	1.8	9.1
2000	190.0	193.2	229.0	3.2	35.8	1.7	18.5
2001	210.0	219.2	228.7	9.2	9.5	4.4	4.3
2002	239.3	239.4	251.4[1]	0.1	12.0	0.0	5.0
2003	253.3	260.1	–	6.8	–	2.7	–

1. Estimate.
Source: Ministry of Finance.

these circumstances, it might be preferable to provide for a budget reserve like it exists in other countries with a view to enhancing fiscal transparency and accountability. Such spending has nevertheless to be sanctioned at the end of the year by a so-called "supplementary budget". In recent years, rules have been tightened to reduce the leeway of the Minister to permit spending outside the regular budget. In the 1997 Government Reporting Act, the role of the "supplementary budget" was restricted to "unforeseeable" events. However, additional expenditure on wages and health care, which has accounted for the bulk of budget overruns in recent years, has been such a regular feature that it can hardly be considered as such. In its report, the National Audit Office also noted that, despite tougher rules, managers have not been held responsible when agency spending exceeded appropriations. It is to be hoped that the recent directive concerning the execution of the budget will lead to better enforcement of spending ceilings. While additional expenditures have tended to be accommodated, the amount carried over to the following fiscal year has gradually increased since the mid-1990s. It seems that some agencies have been building up a financial buffer in order to deal with future uncertainties. This has some advantages but could be a problem to the extent it risks reducing the scope for transferring allocations between agencies or ministries. In any case, the sanctioning of extra spending through supplementary budgets should be curtailed, since it introduces a *de facto* asymmetry in the treatment of deficits and surpluses when it comes to carrying them over to the next fiscal year.

Finally, an important weakness of the budget process is that there is no medium-term expenditure policy. As noted, the Ministry of Finance has introduced a forward-looking aspect to fiscal policy, adding four-year spending projections, both in the aggregate and for each ministry, to the draft budget. These projections are based on existing policies, expected demographic developments and the general economic outlook. They are, however, illustrative and not agreed targets. They are not discussed or voted on in Parliament and hence not considered binding in any way. And, although they are submitted to the special ministerial committee responsible for the frame-decision, they are not used as a starting point for the subsequent annual budgetary exercise. Thus, while being present to some extent in the budget formulation process, they are not an integral part of the fiscal framework. To enhance spending discipline, it would be preferable if the government prepared rolling multi-year budget plans with explicit expenditure limits and presented them for discussion and vote in Parliament. Experience in other countries (notably Sweden and Finland) with departmental or aggregate expenditure ceilings suggests that they can be successful in tackling spending pressures, at least for a time.

Performance management

Development towards performance management began in 1992 when a project was launched to benchmark outputs, unit costs and service levels across

several groups of homogenous government agencies. This was followed by the conclusion of several experimental service contracts with agencies aimed at giving them clearly defined targets and responsibilities in exchange for increased managerial freedom. Since 1995 the Ministry of Finance has systematically collected and published activity indicators for most agencies with a view to developing standards by which one can measure what the government is getting for its money. In the light of experience, a more comprehensive approach to performance management was introduced in 1997. It is gradually being implemented throughout the entire central-government sector. Three-to-five-year framework agreements (called performance contracts) specify the main tasks of an agency and provide a communications framework between the agency and its supervising ministry. The role of the agency is derived from a definition of the services the state is to fund and render, as set out by law and regulations. On the basis of the contract, the agency has to develop a strategic plan for three to five years, which sets the stage for a dialogue with the ministry. This is an important part of expenditure planning and supports the "frame-budgeting" process. The strategic plan is then made operational through annual plans and target-setting, with agencies expected to report annually on results to the ministry. In this context, the Ministry of Finance has taken steps to strengthen performance measurement and reporting in the public sector (see below). Along with the decentralisation of decision-making authority to agencies, management processes within ministries have been reformed, with line managers being given more responsibility, including control over their staff.

Despite some progress, much remains to be done in the area of performance management. So far, about one-half of all government agencies are covered by framework performance contracts, and most smaller agencies are still without one. The Ministry of Education, for instance, has completed performance contracts with all its upper secondary schools, and the Ministry of Justice has done the same with all magistrates (in particular, the Commissioner of Police and Customs). But each ministry has had some scope to implement performance management with its agencies at its own pace. The strategy to date has been to do this gradually, and ministries and agencies have not been pressured to act. The first government directive with direct reference to performance management was issued only in 2001. Stating clearly that agencies are to adopt this approach and conduct their work in conformity with the guidelines put forth in 1996 should serve to speed up the implementation of the performance management approach. However, given that small agencies have not been willing or able to move in this direction, merging some of them would seem to be necessary to ensure a generalised application of performance management. In any case, consolidation should be pursued with a view to enhancing efficiency in the public sector.

A formal appraisal of the performance management initiative has not yet been carried out, although the National Audit Office has begun an evaluation of its design and implementation, which is expected to be finalised imminently. The

partial evidence that has been gathered seems to indicate mixed experiences and results. There is considerable variation in how far performance management has been actually implemented. Some agencies have not done much more than concluding a framework agreement, while others have made more progress with long-term strategic planning, annual performance targets and reviews. Many agencies have improved their management, and more of them have improved overall planning. The results vary, however, considerably between agencies and depend largely on the commitment of the ministry involved. A survey conducted by the Ministry of Finance in December 2001 found that almost 70 per cent of managers felt that the introduction of performance management in their agency had either very positive or rather positive effects. But less then half thought that the ministries had done their share to honour the government resolution that initiated performance management in the public sector, and less than one-third considered that management procedures had changed significantly following the adoption of the new approach. Among the agencies without a contract (about half), only around one-half indicated that they were interested in having one. Pending the National Audit Office's evaluation results, these findings would seem to point to the need for both improving the design and enforcing the adoption – by both ministries and agencies – of the government's performance management initiative. In this context, it also appears desirable to devote more resources to policy evaluation, both within government and at the National Audit Office.

The increased flexibility regarding inputs given to departments and agencies requires more information on the outputs they produce. But activity indicators have still not asserted themselves as an actively used tool of public-sector management. As noted, the Ministry of Finance has collected and published such indicators since the mid-1990s. The initiative was designed as a three-step programme. F*irst*, departments and agencies were to identify and define their activities. S*econd*, the cost of each activity should be determined. And, *third*, quantitative descriptions of each activity were to be developed in a uniform manner. One problem with these indicators has been that they have often been seen as another piece of unnecessary paperwork. A number of public entities, mostly hospitals, now include performance indicators in their annual reports. However, there is no general requirement for agencies to do this, and many disclose only basic financial information. The National Audit Office has found that, although the majority of government agencies now collect performance indicators on a regular basis, they have in general not been used for comparison with planned outputs or with other agencies. Few agencies take action to ensure that actual outputs match planned ones. Furthermore, as in other countries, to the extent they are produced, indicators have focused on outputs rather than outcomes. Ministries and agencies have been encouraged to review indicators and co-ordinate them with the performance goals put forth in their plans and information in the annual reports. The Ministry of Finance is working on improving performance measurement, and a pilot project has

been launched to introduce the "Balanced Scorecard" method in the public sector. One agency, the Directorate of Customs, has started to implement it (see Box 5).

Linking the budget process to performance, which was one of the objectives of public-sector reform, remains a challenge. Performance-based budgeting has been implemented in upper secondary education (and recently also colleges

Box 5. Performance management in the Directorate of Customs

The Directorate of Customs (DOC) has approximately 200 full-time employees and an annual budget of US$8.3 million. The DOC's approach to performance management can be described as top-down. Its mission, strategic plan, overall goals and guiding principles are all set at the top. Individual divisions within the DOC are responsible for developing annual plans, including functions, budgets, performance targets and indicators. They are also supposed to provide information on performance evaluation strategies and trends in past performance results. If the agency stays within its budget, surpluses are moved to the next year, and if deficits occur, next year's budget is reduced accordingly. With the DOC's new Balanced Scorecard system, rewards for divisional and individual performance, which do not exist so far, will be considered.

The implementation of performance management was triggered both by organisational changes and an initiative from the Ministry of Finance. In 1998, management was changed, and the DOC started the collection of municipal income taxes for the city of Reykjavik. In addition, the Ministry of Finance signed an agreement with the DOC to supervise tax collections in all of the country's customs districts. In 1999, the DOC signed a performance management contract with the Ministry of Finance, defining the working relationship between the Ministry and the Directorate, and the latter's mission, service functions/tasks and objectives. The contract also specifies the plans and reports the DOC is required to prepare, These include a five-year plan, which is to be reviewed every year. An annual plan is to be submitted to the Ministry for approval at the beginning of every year. The agency also has to present an annual performance report, including both financial and non-financial measures according to targets and actual results. In addition, activity indicators are to be collected and submitted to the Ministry annually.

The Ministry of Finance intended to use the DOC's performance management implementation as a pilot project. The focus was on changing the way public agencies see the relationship between inputs, processes and outputs and identifying the best performance indicators for the evaluation of outputs and outcomes. The DOC received a special grant from the Ministry to develop and implement the Balanced Scorecard system, which is to be used as a benchmark for other agencies. It is hoped that the adoption of this methodology will make agencies' mission, strategy and goals more transparent and strengthen both organisational communication and managerial accountability.

and universities). Allocation rules for funds have been at times intensively debated by the interested parties in this area and seen several modifications since they were first adopted in 1998. Even if there is some dissatisfaction with this funding system, the general feeling both at the Ministry of Education and among school managers appears to be positive. But new funding systems still have to be implemented in most other areas (feasibility studies are being carried out for the police and health care). In its report on the budget process, the National Audit Office came to the conclusion that, overall, the presentation of activity indicators with the draft budget has not yet had the desired effect of influencing the way in which funds are allocated. It opined that linking their allocation to results might provide stronger incentives to managers to consider performance indicators. But it also underlined that current indicators need to be developed further to become meaningful performance measures and be accepted as useful tools for public-sector management. Indeed, to strengthen the latter, improving the quality of reporting is a major challenge, together with linking performance with budgeting and enhancing evaluation capacities.

Human resource management

Human resource management in the public sector has undergone far-reaching changes over the past decade. The first steps were taken in the early 1990s, involving reduced *ex ante* controls and partial decentralisation of pay determination. A comprehensive new policy approach was adopted in the in the mid-1990s, emphasising devolution of authority to agencies and a more flexible and transparent pay system, and formalised by the 1996 Civil Service Act and the introduction of a new decentralised pay structure in 1997. The Act aims at aligning the management of human resources with that of other resources, and at bringing the rights and responsibilities of public employees more into line with conditions prevailing in the private sector. For example, it abolished lifetime appointments and introduced fixed-term contracts for senior civil servants. The revised pay system seeks to increase transparency by incorporating extra payments into basic wages. At the same time, it places more emphasis on staff performance, allowing managers some leeway in determining salary grades for, and providing premiums to, individual government employees. Pay scales and general wage increases are still negotiated, however, between the Ministry of Finance and the trade unions (except for higher-ranking civil servants).

The transition to the new decentralised public-sector pay system in recent years has not been without difficulties. If anything, wage pressures in the public sector intensified in the late 1990s, with the share of employee compensation in total government expenditure rising from 34 per cent in 1996 to 37 per cent in 2001 (13 and 15 per cent of GDP, respectively). The fundamental problem seems to be that managerial accountability has lagged behind

the devolution of management authority. The National Audit Office has found that many agencies have exceeded their authority to pay salary premiums. Also, instead of being purely a matter of agreement between managers and individual staff members, the introduction of merit-based pay and flexible grade levels has been seen by unions as an opportunity to increase the salary levels of all employees. The Audit Office has found some evidence that the decentralisation of pay determination has been "exploited" by unions to re-bargain deals for their members by pointing to strong increases in other sectors, a case in point being the settlements in the hospital sector. Not able or willing to resist pressure from employees and unions, many managers have yielded to demands that jeopardised their budgets (admittedly, sometimes after consulting with their ministries). In the end, additional funds have usually been provided to cover the resulting deficits. The question of how to strengthen managerial accountability has been addressed recently by the government directive aimed at tightening the budget execution, but it is too early to tell whether the situation will change significantly, and additional efforts might well be necessary.

It is worth noting, however, that wage negotiations that fix salary scales are carried out centrally (by the Ministry of Finance), with agreements at the local government level often on similar terms as their central counterparts, and that public-sector settlements have systematically exceeded budget targets. Moreover, recent developments have to be seen against the backdrop of strong demand for labour during most of the transition period to the new system; in these circumstances, wage pressures associated with skill shortages in some areas have tended to spill over to other sectors. They also illustrate the difficulty of permanently reducing civil servants' relative pay. As discussed in the previous *Survey*, recent trends represent to some degree a reversal of the cuts that occurred during the budget consolidation programme in the early 1990s. But there has been a strong rise in the relative compensation of civil servants over the past decade as a whole. As a result, public-employee compensation now exceeds that in the private sector by a large margin. While this partially reflects skill differentials, the gap exceeds that existing on average in the OECD and in other Nordic countries (see Figure 16). The conclusion of multi-year pay agreements and easing of labour-market conditions should facilitate containing wage pressures in the near term. Nonetheless, it would be advisable to introduce measures to limit future potential wage bill overruns. The wage bargaining process should be strengthened, for example, by ensuring that the Ministry of Finance's wage bargainers are given clearer instructions. Moving to multi-year budgeting may be helpful in this respect. In this context, further performance management initiatives under consideration, in particular a rewards system, need to be implemented in a way that avoids increases in total spending.

Use of market mechanisms

In parallel with reducing its presence in the enterprise sector, the government has gradually increased its use of contracted services from the private sector. Early efforts had been concentrated in outsourcing ancillary services such as catering and maintenance. In recent years, increased emphasis has been placed on service contracts with private companies and non-profit organisations to run specific government activities (health centres, nursing homes, high schools, medical research). At the local government level, too, a few authorities have contracted out services in addition to privatising municipally owned enterprises. At the same time, some municipalities have signed service contracts with the central government (see below). Experience with outsourcing has been mixed. While there is some evidence that cost savings have been realised, evaluations have also revealed significant shortcomings. For instance, a National Audit Office report on the purchase of consultancy services by government agencies has found that the latter lacked clear rules and guidelines and that the tasks of consultants were poorly defined. It was also common that offers were not obtained from competing consultancy firms, and only half the agencies studied had written contracts with the consultants working for them. Price competition and competency evaluations were almost never employed, in spite of legal provisions and other instructions for purchases of goods and services by the government. While international experience shows that it is very difficult to achieve cost-effective contracting out (see, for example, the 2002 *Economic Survey of Denmark*), it is worth making the effort, and in Iceland more could and should be done to reap the potential benefits of outsourcing.

The government has also initiated a policy to increase private participation in public services through public/private partnerships (PPPs). Since 1997, three major PPPs of different size and structure have been finalised. These projects are: a tunnel – a typical concession project that is financed with user tolls; the building and operation of a municipal technical school, financed by the state; and the design, building and operation of a nursing home for elderly people. In general, these projects have been successfully executed and proved to be a cost-effective method of delivering public services. The authorities therefore intend to encourage increased use of PPP projects in the future. In doing so, they should consider international experience suggesting that this approach is no panacea (for a discussion of both potential drawbacks and advantages, see the 2002 *Economic Survey of the United Kingdom*).

The government reformed its procurement methods in the mid-1990s, expanding the use of tendering for legal, accounting, engineering and architectural services in line with practices existing in the construction area. A private finance initiative was launched in 1999, extending tenders for construction to include also design, funding and operations. The 2001 Public Procurement Act, which is based on the principles set forth in various EU directives, called for the purchase of

goods and services above a certain threshold to be tendered out under competitive bidding. The same applies to building projects above a certain size. Under European Economic Area (EEA) rules, these tenders are now open to foreign companies. The Ministry of Finance estimates that in some cases tendered offers have generated 15 to 20 per cent cost reductions. A National Audit Office study of the effectiveness of the system of framework agreements introduced by the State Procurement Agency showed that it offers advantages, both in terms of time saved and favourable prices. However, the Audit Office also found that many vendors did not supply the Agency with the required information. Considering that the dissemination of information on purchasing activity and follow-up measures were inadequate, the Audit Office recommended that governmental agencies should be encouraged to formulate a procurement policy and be better informed as to their obligations concerning purchases.

Local governments levy various user charges, *e.g.* for water, sewerage, electricity, geothermal energy, harbours, public transport services, some school activities and home help. In some instances, the user fees cover only part of the service cost borne by the local authority, notably in public transport and in the case of kindergartens where charges cover about one-third of costs. By contrast, geothermal district heating systems, which are in most cases organised as municipal corporations, levy charges that cover both capital and operational costs. The same applies to a few electricity works owned by local authorities. A comparison with other Nordic countries shows that in Iceland fees are a much less important source of local government revenue. User charges are even less widespread at the central government level (see below). While there are arguments that full cost recovery should not be aimed at in all cases, the absence of user charges is a lost opportunity to restrain demand and, hence, public expenditure, but also for those benefiting to contribute to paying for what they get.

Local government

The specific structure and increasing responsibilities of local authorities both have effects on public spending outcomes. Local government is in the midst of an amalgamation process that is expected to continue over the next few years. There are now 105 municipalities as compared to 229 in 1950 and 196 in 1994, when the pace of mergers accelerated. Nonetheless, their size remains heavily disparate: about 40 per cent of the municipalities still have fewer than 200 inhabitants, while, on the other hand, Reykjavik, the capital, accounts for two-fifths of Iceland's population. Local government consolidation has facilitated to some extent the transfer of responsibilities from the central to the municipal level, the major example of which was primary and lower-secondary education (in August 1996). Until the early 1990s, the trend had been to shift tasks to the central government to ease the service burden of financially strapped municipalities. In

addition to education (up to the age of sixteen), local government is now responsible for social services (including those for the elderly and housing for low-income earners, but excluding employment services) and some infrastructure (including harbours and environmental matters).

Within their areas of responsibility, local authorities have the right to decide on expenditure priorities and the execution of projects. With the transfer of compulsory schooling to the municipalities, education is now the largest component of local government spending, accounting for over one-third of total outlays, followed by social services (one-fifth). To finance their activities, municipalities have limited (independent) taxation powers but considerable discretion to charge fees for services they provide, and they do not require the authorisation of the central government to raise loans. Nonetheless, taxes represent the bulk of their revenue. Equalisation payments contribute on average less than one-tenth, although this share can reach one-half for very small municipalities. When municipalities became responsible for compulsory education, local tax rates and payments from the Local Government Equalisation Fund were raised accordingly. However, more generally, there has been a trend away from earmarked transfers towards general grants within the equalisation system (Table 12). This is desirable, since earmarked grants often result in distorted or excessive spending, although they may be justified to the extent that there are positive externalities of local spending. Central government involvement in the finances of municipalities is minor, although the Ministry of Social Affairs exercises general

Table 12. **Local Government Equalisation Fund**

	1998		2001	
	ISK million	Per cent	ISK million	Per cent
Earmarked grants:				
General primary school grants	1 847	38.7	2 402	27.7
Grants to specific teaching	540	11.3	887	10.2
Specific investment grants	641	13.4	608	7.0
Other school subsidies	377	7.9	505	5.8
Sub-total	3 405	71.4	4 402	50.8
Block grants:				
General service equalisation	566	11.8	1 497	17.2
Real estate contribution	–	–	1 325	15.3
Tax revenue equalisation	413	8.7	660	7.6
Grants to compensate for population reduction	108	2.3	394	4.5
Rent rebate contribution	280	5.9	390	4.5
Sub-total	1 367	28.6	4 266	49.2
Total	4 772	100.0	8 668	100.0

Source: Association of Local Authorities in Iceland.

supervision over local authorities. If a municipality is unable to pay its debts, it can be put under the direct administration of the Ministry. In order to improve policy co-ordination, the Association of Local Authorities and the central government have signed a co-operation agreement that calls for regular consultative meetings.

Municipalities as a whole have been less successful in consolidating their finances than the central government (see Chapter II), and the renewed rise in public expenditure relative to GDP in recent years partly reflects developments at the local government level. The transfer of government functions to municipalities has played a role. It can also be argued that spending pressures are strong in areas of local government responsibility and that their acquired competence for compulsory education (and thus teachers' salaries) has added to these pressures. However, while there is evidence that some functions are better run at the local level, it appears that municipalities have even greater difficulties in containing costs than central government, as it is harder for them to resist claims for more public services and higher pay for employees. In addition, increased revenues through taxes or transfers from the central government may have reduced incentives for local authorities to curb spending. Moreover, reforms have been more limited at the local government level. For instance, although some municipalities have begun to implement performance management, most of them have not gone as far as the ministries and their agencies (where progress has also been uneven and slow).

An acceleration of the amalgamation process could help, as the small size of many municipalities prevents the adoption of innovations in public management. Indeed, Reykjavik has implemented many initiatives along the lines of the central government reforms described above. The small size of municipalities also limits the capacity of local government to take over tasks devolved from the centre. Many local authorities outside the capital region are even unable to perform all their current responsibilities in a satisfactory way, as they are too small to be effective managers of many categories of expenditure. Local government reorganisation has been a recurring theme in Iceland for a long time. Ten years ago, a government committee made wide-ranging recommendations for reform, including the reduction in the number of municipalities to at most 43, the transfer of functions between government levels and improvements in central-local relations. Although the proposal was rejected by referendum, amalgamation gathered momentum; but the number of municipalities is still considerably above the targeted level. Mergers can be imposed when the population of a municipality falls below 50 inhabitants, and this threshold could be raised. But in the absence of forced unification, which is excluded by the government, the only option to speed up the process would seem to be the use of financial incentives through the Equalisation Fund.

Despite the negative result of the 1993 referendum, devolution has also made some progress through legislated transfers of responsibilities (in particular, compulsory education) along with tax resources and service contracts with the cen-

tral government. Under a Local Government Pilot Programme, local authorities may opt to run certain functions of central government during a trial period. This applies chiefly to the provision of health services, where one or more municipalities undertake to run such services within their area. Selected municipalities have been allowed to carry out various experiments in administration, with increased freedom from some regulations (such as building control). A study on pilot contracts done by a private consultancy firm on behalf of the government and concerned municipalities has concluded that outcomes have in general been favourable. The National Audit Office has been more critical. It found no evidence that costs had decreased but noted that deficient monitoring and information made it difficult to evaluate whether the aims of the contracts to produce savings and improve service had been attained. These experiments have not led to further devolution initiatives. Indeed, the transfer of compulsory schools to the municipalities has been more complicated than anticipated, and so local authorities seem to be careful in not taking on other new responsibilities at the same time.

It is clear that mechanisms for steering public finances need to be developed as the local government's share of total spending grows (it has risen from less than one-fifth to more than one-fourth over the past decade). As noted, there is an agreement between the central government and the Association of Local Authorities that aims at co-ordinating policies in order to better attain national economic objectives. But this provides for consultations rather than binding targets. Furthermore, the link between macroeconomic policies and budget discussions would be strengthened by expanding the coverage of fiscal projections to both levels of government, including local authorities. Finally, there seems to be scope for reinforcing the government's supervision of local finances. As noted, municipalities can be put under direct administration, but this has rarely happened. Moreover, except for the city of Reykjavik, auditing for local authorities is carried out by private consultancies. Although municipalities are content with this arrangement, the National Audit Office has found it to be not always satisfactory.

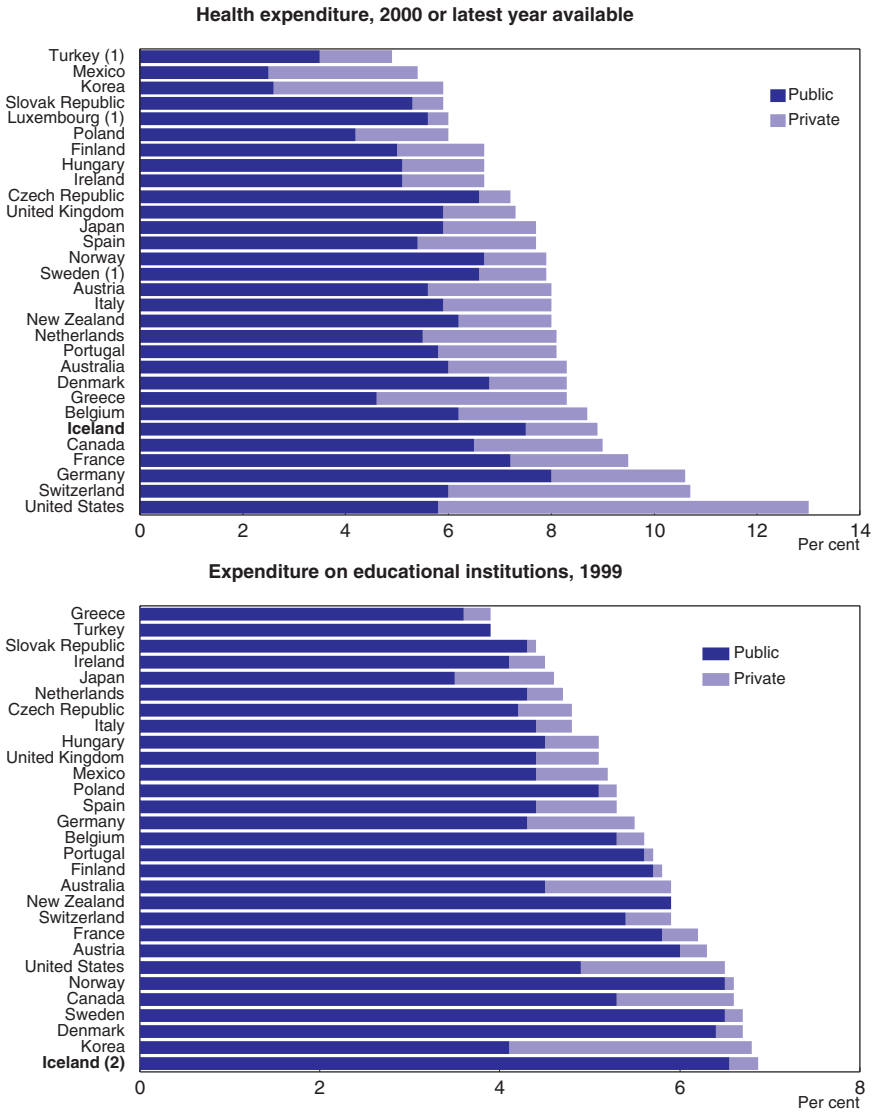
Social spending

Health care and education are among the main tasks of government. Together with social support, spending on these activities accounts for more than three-fifths of the state's fiscal budget, and a similar proportion of local government outlays is devoted to them. This highlights the importance of expenditure management in these sectors, the more so since they also are those facing the strongest spending pressures.

Health care

Iceland's spending on health care reached 9 per cent of GDP in 2000 as compared with an unweighted OECD average of 8 per cent (Figure 17). Up to

Figure 17. **Health and education expenditures in OECD countries**
As per cent of GDP



1. 1998 for Sweden and Turkey; 1999 for Luxembourg.
2. 1998.

Source: OECD *Health Data*, 2002 and OECD, *Education at a Glance*, 2002.

the 1980s, it was lower than abroad, but it has increasingly exceeded the OECD benchmark since then. Over the past 30 years, it has increased by 4 percentage points of GDP, while the rise in the OECD area has been just over 2½ points. In terms of per-capita expenditures on health care (measured in GDP purchasing power parities), Iceland ranked fourth in 2000, after the United States, Switzerland and Germany. The average annual increase in per capita spending on health care has exceeded the OECD mark by 1½ percentage points over the past 30 years, despite a sharp temporary slowdown during the budget consolidation period in the first half of the 1990s.

Heavy expenditure has probably contributed to an above-average level of care and better health outcomes than generally elsewhere (Table 13). Coverage and quality of clinical care is high, as indicated, for example by the very low rates of maternal and perinatal mortality. Life expectancy, both at birth and at age 65, is among the longest in OECD area. However, health status in Iceland has become less exceptional over time, as other countries are catching up. This is mainly attributable to slower progress or even deterioration in the health status of women and older people in general. To some extent, this can be traced to the effect of increased tobacco consumption among women on mortality rates. But, even adjusting for life-style effects, the rapid expansion of expenditure can be questioned, as it has not been matched by much of an improvement in health outcomes.

The health system is characterised by the dominance of the public sector. At 84½ per cent, the public share of total health expenditure is among the highest in the OECD area. All residents are covered by public insurance. All hospitals are publicly owned, and primary care is mainly provided by a network of public health

Table 13. **Selected health indicators**
1998 or latest available

	Iceland	EU	Minimum among EU countries	Maximum among EU countries
Life expectancy (years)	**79.2**	77.8	75.4	79.3
Men	**77.0**	74.4	71.7	76.7
Women	**81.5**	81.0	78.6	82.8
Maternal mortality	**0.0**	7.1	0.7	10.8
SDR for cardiovascular diseases per 100 000 population	**284**	280	176	385
SDR for cancer per 100 000 population	**185**	191	160	226
SDR for external causes per 100 000 population	**59**	42	28	73
New cases of tuberculosis per 100 000 population	**6.2**	13.7	5.3	51.4
New cases of AIDS per 100 000 population	**0.7**	3.5	0.3	10.6
Regular daily smokers, ≥ 5 years (per cent)	**25**	29	18	37
Registered alcohol consumption in litres per person	**4.3**	9.4	4.9	11.8

Note: SDR: standardised death rate; AIDS: acquired immuno deficiency syndrome.
Source: Ministry of Health and Social Security.

centres. The private sector consists of dentists, specialists and a few general practitioners and nurses. The state thus employs most medical personnel. The number of health care professionals per capita is high, with Iceland ranking second (after Finland) for both nurses and practising pharmacists, for example, among OECD countries. Financing of health care is based on taxes, and services have no significant user charges except for specialist care, day surgery, some pharmaceuticals and dentistry. User charges are reimbursed, however, when they exceed a certain amount by calendar year (somewhat over $200 for people aged 18 to 70, $70 for children, and around $50 for the elderly, disabled and long-term unemployed). Nursing homes and old-age homes, which are run by municipalities or voluntary organisations, are partly financed by user charges, but the major part of funding is provided by the government (through health insurance or the public pension scheme).

Given the persistent spending pressures and the apparent declining returns in terms of marginal population health, the government has initiated some reform measures. The last few years have seen both cutbacks and attempts to increase the cost-effectiveness of the health care system. This has mainly concerned the hospital sector. The most important development has been the administrative merger of the three Reykjavik hospitals into one. In rural areas, health centres have been merged with local hospitals. One recent change was the merger of all health centres and hospitals in eastern Iceland under one board and director. In addition, the small rural hospitals have increased their collaboration with larger ones. At the same time, there are also attempts to decentralise health care, such as the above-mentioned experiments to transfer the responsibility for health services to municipalities.

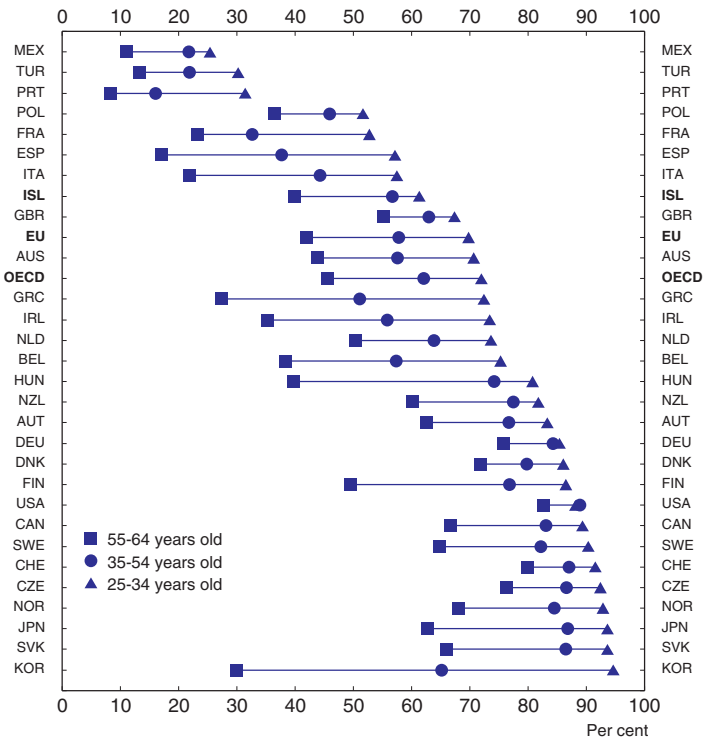
An important source of cost pressures has been pharmaceutical expenditure, with Iceland showing the highest growth in per capita spending over the past 30 years among the OECD countries for which data are available. Nevertheless, the deregulation of the pharmacy sector in 1996 has led to increased competition, as manifest in lower prices for medicines through discounts granted from the maximum permissible price. Additional cost savings for the government have resulted from a reduction in subsidies on, and wholesale and retail margins for, medicines. The authorities have also moved to tighten drug approval rules. As to health-care procurement more generally, a recent report by the National Audit Office recommended that the authorities should adopt a more strategic approach to the purchase of medical services from doctors with private practices and obtain better information on the various costs involved. The government has taken steps in this direction. However, thought has to be given to developing a more substantial reform package in the health-care area, while recognising the complexity of improving efficiency without sacrificing equity. In this respect, Iceland could learn from the lessons of attempts at health reform in other OECD countries (as summarised in the context of the OECD Health Project).

Education

Expenditure on educational institutions approached 7 per cent of GDP in 1998 (the most recent data available), the highest ratio among OECD countries (Figure 17). This is a marked change from 1990, when it still was below the OECD average. Over that period, it increased by two percentage points, more than double the corresponding rise in the OECD area. Education in Iceland has traditionally been organised within the public sector, and there are very few private institutions, which almost all receive public funding. Public spending accounts for about 95 per cent of total educational expenditure, little changed from 1990. Hence, the recent boost to education spending largely reflects a government effort. It is probably too early to expect it to be reflected in better performance. According to the most recent available statistics, around 40 per cent of the working-age population has still not more than lower secondary education (Figure 18). Even among young people educational attainment is well below the OECD average and considerably below the levels recorded in other Nordic countries. The PISA study reveals, however, some improvement in educational outcomes by international comparison. At the same time as Icelandic students have continued to score above average in reading literacy, they now seem to be moving up toward average performance in mathematical and scientific literacy, areas where their achievements used to be rather poor.

Following the spurt in education expenditure, which has catapulted Iceland from the group of low-spenders to that of high-spenders in this area, it would appear that the focus should now be on getting better value for money. The recent conclusion of performance-related contracts with all higher-education institutions should be helpful in this respect, although care must be taken that activity-based financing does not lead to the provision of public services beyond the social optimum. But there would seem to be scope for enhancing cost-efficiency in other areas. For instance, the ratio of students to teaching staff, which is a key determinant of compensation spending, continues to be very low, except at the upper secondary level. It should be possible to achieve better balance between students and teachers, and thus cost savings, without jeopardising the quality of education. In any case, it may be better policy to devote the limited resources available for education to employing more capable teachers rather than keeping class sizes low (Woessmann and West, 2002). Moreover, public education is free of charge, even at higher levels (except for modest enrolment fees). University students have also in most cases access to loans from the Icelandic Student Loan Fund. Given the largely private nature of returns to post-compulsory education, increased student fees would be justified, the more so since access could be ensured by expanding the Loan Fund as well as making reimbursement contingent on income. Tuition fees would encourage students to finish their studies in good time. Indeed, the high subsidy element in

Figure 18. **Educational attainment of the working-age population**
Population with at least an upper-secondary qualification, 2001[1]



1. Per cent of each age group; 2000 for Austria, Belgium, Denmark, Hungary, the Netherlands and Norway.
Source: OECD, Labour Market Statistics database.

public tertiary education by international comparison seems to be the major factor behind the relatively long duration of university studies.

Conclusions and policy recommendations

In summary, although overall public spending is not high compared with Iceland's Nordic neighbours, other OECD countries have made more progress in reining it in. As well, there seems to be room for enhancing its efficiency. As noted, budget consolidation efforts and public-sector reforms temporarily reversed the upward trend in the public expenditure-to-GDP ratio in the mid-1990s, but since then the ratio has tended to edge up again, and budget balance has been maintained only through a rise in the tax-to-GDP ratio. Recurrent overruns of budget

Box 6. Recommendations concerning public-spending management

- Strengthen "frame-budgeting" by making sure that it is not neglected in the late phase of the budget process (*e.g.* through an early parliamentary vote on the frames).
- Tighten budget execution and limit the use of supplementary budgets in order to reduce persistent – even if diminishing – fiscal slippage.
- Reinforce the medium-term orientation of expenditure policy by introducing rolling multi-year budget plans with explicit spending limits.
- Accelerate the implementation of performance management, setting deadlines and eventually reducing the number of small agencies.
- Improve the quality and encourage the use of performance indicators.
- Move further toward performance-based budgeting, making it both more widespread and integrating it in budget formulation from the very beginning.
- Strengthen human resource management by enhancing accountability and taking measures to limit wage overruns.
- Make greater use of market mechanisms and price signals, such as outsourcing and user fees (in particular in the area of tertiary education).
- Provide incentives for further local government consolidation to allow both the transfer of more responsibilities and better control and effectiveness of spending (through more widespread adoption of reforms).
- Make the co-operation between central and local government more effective through binding annual agreements to ensure the achievement of national spending objectives.
- On the basis of lessons learned abroad, develop a more substantial reform package for the health care sector, recognising the complexity of improving efficiency while maintaining equity.
- Following the significant expansion of education spending, focus on quality and cost efficiency, by increasing class size somewhat and introducing tuition fees in tertiary education, where returns are mostly private, both to reduce the duration of studies and as a source of financing.

spending point to the need for further modifying the fiscal framework. In particular, it would seem to be desirable to strengthen the strategic focus of fiscal policy. As discussed in the previous chapter, the government's objective to achieve budget surpluses is easily understandable to the public but not necessarily justifiable in terms of achieving intergenerational balance. Fiscal policy should rather aim at reducing marginal tax rates, both for supply-side considerations and because extra revenues due to conservative budget estimates and fiscal drag have encouraged overspending. A stronger medium-term orientation of policies is required,

with a process that clearly defines political priorities and the means to achieve them, and relies on multi-year spending targets rather than *ad hoc* decisions. There is also room for enhancing near-term spending discipline. Although the introduction of "frame-budgeting" has improved planning and decision-making, its effectiveness has been undermined by the fact that expenditure targets have tended to be modified in the parliamentary phase of the budget process. Moreover, fiscal slippage has continued, with overspending (typically in the areas of compensation and health care) systematically sanctioned by supplementary budgets.

With respect to the efficiency of public spending, much remains to be done in the area of performance management. Most ministries have still to adopt performance-based budgeting. Moreover, managerial accountability has lagged the devolution of management authority to government agencies. This has contributed to large wage increases following the introduction of a new decentralised public-sector pay system. The devolution of responsibilities to local authorities has also not been without problems, since they seem to have had greater difficulties in containing costs than the central government, as it is harder for them to resist claims for more public services and higher pay. And they have been even slower than the central government in introducing performance management and other reforms. This is in part due to their often microscopic size, highlighting the need for further amalgamation. Finally, there is scope for greater reliance on market mechanisms and signals, such as outsourcing, user charges and client choice, in order to improve allocative efficiency. Box 6 sets out some recommendations as to what could be the most promising avenues of further reform in the area of public-spending management.

IV. Structural policy developments

The 2001-02 recession was widely expected to lead to some deterioration in the stability of the financial sector, reflecting both normal cyclical forces and the rapid expansion in foreign-currency-denominated debt through 2000. However, the 2001 depreciation in the krona and weakening in business activity did not bring with them a pronounced reversal in the health of the financial system. In part, this stems from the fact that the krona recovered before defaults on foreign-currency debt began to accumulate. However, good policies also played a role, as financial supervision has been strengthened since 2000, and banks have taken action to improve their capital positions. More broadly, the long trend away from government interference in the sector since the early 1990s has led to a more stable environment. The sale last year of nearly all of the state's shares in two commercial banks ended the last major direct government ownership in the industry. However, government programmes continue to distort financial decisions, particularly the support of housing through the Housing Financing Fund, the tax system and social policies. Policies should be changed to remove the advantages held by residential investment, thereby placing business investment on a more equal footing.

While privatisation of the commercial banks was successful last year, the government was forced to abandon its efforts to privatise Iceland Telecom by the depressed global market for telecommunications, though it remains committed to its sale over the medium term. A more difficult task will be deregulation and privatisation in the energy sector. Iceland has substantial energy resources in the form of hydroelectric and geothermal energy potential. The current regime is heavily regulated and does not distinguish between natural monopoly and competitive areas. Proposals for deregulation have taken into account calls for a separation of such activities and the need for incentives for efficient production and use. Nonetheless, deregulation has proceeded slowly, and the expansion of power-intensive industry (a topic of macroeconomic importance – see Chapter I) will likely complicate matters further. The current system provides subsidies through government backing of the National Power Company's debt and does not adequately account for the environmental costs of power generation. It also blocks foreign equity investment in power generation (which could result in a better diversification of the risks associated with large projects across interested parties).

The proposals for building a power plant and smelter in eastern Iceland are in part related to regional development goals: the population has become increasingly concentrated in the capital region, and the government hopes to increase the attractiveness of other areas. A range of other policies, including support to agriculture, also have important regional motivations. Agricultural distortions remain very large in Iceland, with producer support at the upper range of OECD experience and consumer prices for agricultural products substantially above world levels. Lower support would raise consumer welfare and contribute to better land management. It is also notable that agricultural policies contrast so sharply with the liberal and largely effective management of Iceland's fish resources. Finally, despite its small isolated population, Iceland does have a role to play in limiting its emissions of greenhouse gases and conventional pollutants, with care taken to ensure that improvements be made at minimum cost. Table 14 provides a summary and assessment of previous and new structural policy recommendations.

Financial markets

The transition to a fully privatised banking system is now complete…

Iceland's financial markets have undergone a revolution over the past decade, as emphasised in previous *Surveys*. Until very recently, state-owned commercial banks dominated the market, but the government sold nearly its entire 70 per cent stake in two of the largest commercial banks, Landsbanki and Bunadarbanki, in late 2002, effectively ending its participation in commercial banking. This change should help spur increased efficiency: the government-owned banks have experienced persistently higher costs and lower returns on equity than the privately-held Islandsbanki, and competitive pressures should lead to some improvement. The entry of Kaupthing, an investment bank, into commercial banking activities at the beginning of 2002 has provided a further degree of competition. This has been needed, as the small size of the market guarantees some limitation on the number of banks with the potential to operate at minimum efficient scale. Indeed, competition concerns had prevented the government's plans in 2000 to merge its two commercial banks prior to their eventual privatisation.

The rapid expansion of credit through the business cycle peak in 2000 was accompanied by an improvement in the financial strength of the banking sector, but it also led to some decline in capital adequacy and concerns that a slowing in activity and/or a correction in the exchange rate could lead to a deterioration in the financial system. In particular, both the June 2001 Financial Stability Assessment of the International Monetary Fund (IMF) and credit rating agencies had voiced concerns regarding the sufficiency of bank capital, given the rapid increase in debt levels, especially foreign-currency-denominated debt. Non-performing loans and appropriated assets at the three major commercial banks edged up last year (relative to the stock of loans, Figure 19, Upper panel), but remain below the

Table 14. **Summary of structural policy recommendations**

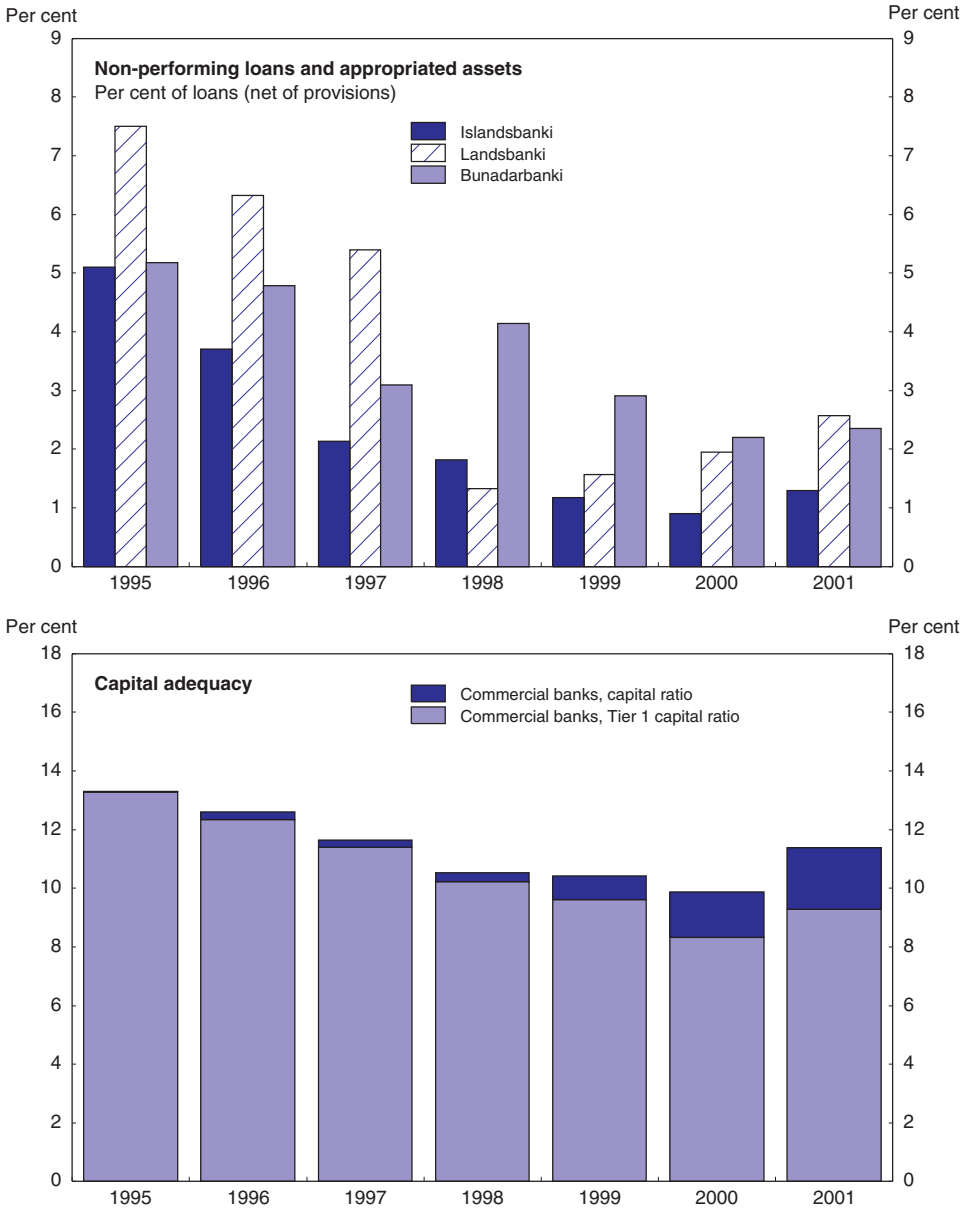
Recommendation	Action	Assessment
Financial markets		
Speed up privatisation of the two commercial banks that the government owns.	Nearly all shares sold in 2002.	The programme is effectively complete.
Consider a minimum capital ratio of 10 per cent.	Government is considering a range of changes in response to IMF's Financial Stability Assessment, although not this specific action.	Given the historical volatility of Iceland's economy and the high exposure to currency risk, a prudent approach seems warranted.
Speed up consolidation of savings banks.	New law in 2001 allowed transition to corporate form.	None have incorporated; the incentives appear insufficient.
Public employee pensions		
Move to a fully funded system as quickly as feasible.	Government has placed these liabilities on its balance sheet.	Despite progress, a large part of the government pension scheme remains unfunded.
Housing sector		
Transition away from government backing of bonds issued by the Housing Financing Fund.	No action.	Distorts choice between housing and other assets.
Eliminate tax benefit associated with mortgage interest and replace with general means-tested credit.	No action.	Distorts choice between housing and other assets.
Eliminate rebate of value-added tax on wage cost of new house construction.	No action.	Distorts choice between housing and other assets.
Labour market		
Shorten the time period unemployment benefits are paid.	No action.	Payments are unusually long-lived.
Move away from two-stage centralised bargaining process.	No action.	Government plays a role in private-sector pay negotiations that results in excessive fiscal concessions.
Education		
Increase focus on foreign languages, sciences and mathematics.	Funding and teacher qualifications have been boosted.	Test scores have risen some, but it is too early to declare victory.
Boost fees for tertiary education.	No action.	While most of the returns are private, fees are minimal, contributing to long completion times.
Telecommunications		
Privatise Iceland Telecom.	Attempted, but global telecoms bust thwarted efforts.	Renewed efforts should soon be made.

Table 14. **Summary of structural policy recommendations** (*cont.*)

Recommendation	Action	Assessment
Energy		
Implement electricity deregulation plan.	Proposals have been delayed.	Necessary to improve efficiency and comply with EEA agreement.
Eliminate government backing of National Power Company debt.	No action.	Increased debt associated with major projects will make privatisation more difficult.
Taxation		
Reduce corporate tax rates.	Reduced from 30 per cent to 18 per cent in 2001.	Increases efficient allocation of capital and incentives for saving.
Abolish net wealth tax.	Lowered from 1.2 per cent to 0.6 per cent.	Increases efficient allocation of capital and incentives for saving.
Index basic tax credit for individuals.	No action.	Would stop automatic rise in effective tax rates.
Agriculture		
Reduce price supports.	Some progress, but abandoning administration of milk prices delayed.	Delay prevents an improvement in consumer welfare.
Open agriculture to foreign competition.	No action.	Unusually protective quotas and tariffs boost domestic prices.
Eliminate lower VAT rate on food in conjunction with other reforms to liberalise the agricultural sector.	No action.	Unnecessary once distortions boosting food prices are eliminated.
Fisheries		
Expand use of automatic catch rules.	Limits on annual changes in TAC for cod.	Slows recovery to maximum economic stock.
Eliminate small-boat exemption.	Small boats brought within the TAC.	Effort-based system is inefficient.
Abolish seamen's tax credit.	None.	This distortion is no longer justified.
Environment		
Introduce diesel fuel taxation on vehicles.	None.	Current distance-based system has poor incentives to reduce emissions.
Use more cost-benefit analysis.	None.	Would improve policy effectiveness and coherence.

Source: OECD.

Figure 19. **Financial stability indicators at the major commercial banks**



Source: Central Bank of Iceland.

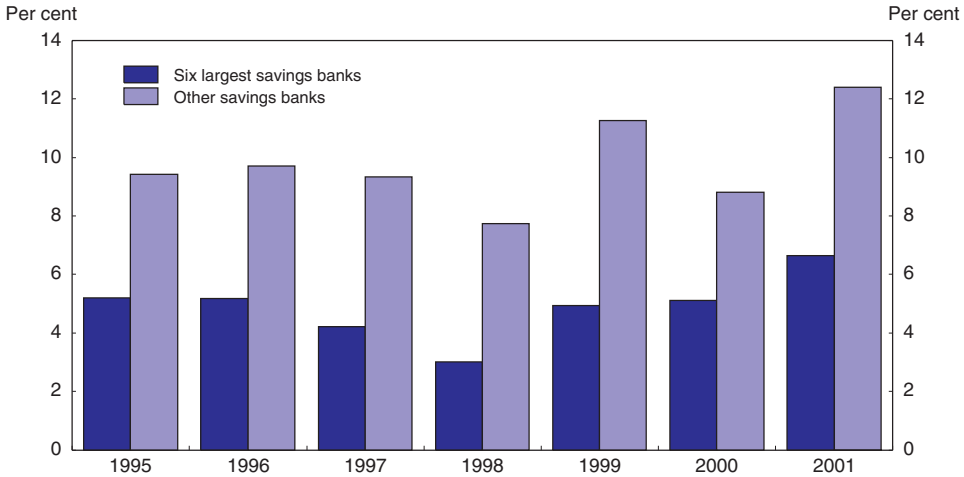
levels seen several years ago. While each institution has shared in the improvement in loan quality, the two previously government-owned institutions have had lower-quality portfolios. Capital adequacy has also been lower at these institutions, although its decline through 2000 was more pronounced at Islandsbanki. Capital adequacy then rose in 2001, despite the weakening in the economy (Figure 19, Lower panel). This should help cushion the effects on banks' willingness to lend from any further deterioration in loan performance – which seems likely, given the lags between economic activity and defaults and the continued rise in unemployment.

Savings banks have generally performed less satisfactorily. These institutions are mostly very small, serve particular regions and suffer from unclear ownership. In 2001, a new law was introduced to facilitate a move by these banks to become limited liability corporations and potentially to spur rationalisation. The law also specifies that at incorporation the total share capital received by guarantee capital owners (members) should correspond to their original guarantee capital holding, revalued on the basis of changes in the consumer price index and adjusted with regard to a dividend formula. The portion of the share capital which is not allocated to guarantee capital owners becomes the property of a self-governing foundation. Allocations may only be made from the assets of the foundation to cultural or charitable pursuits in the operating region of the savings bank in question at the time of incorporation. This reduces the benefits to capital owners from the incorporation. To date, no institutions have changed to corporate form. In any case, rationalisation would be useful. Savings banks have much lower loan quality, and quality has failed to improve over the past half-decade, in contrast to developments at commercial banks (Figure 20). The portfolios of the smallest have performed particularly poorly. This situation may not be too pressing from a systemic risk perspective, as loans and advances from savings banks comprise only one-seventhof the total (and the smallest account only for about 3 per cent), but greater efficiency would reduce waste and improve resource allocation while lowering risk in the system. Despite the change in the law in 2001, unclear ownership has probably hindered improvement, and slow progress in consolidation suggests more efforts should be made to spur the merging of institutions.

… and financial supervision has been strengthened

The overall improvement in the financial strength of the banking sector discussed above has reflected, in part, further improvements in financial supervision. The Financial Supervisory Authority (FSA) was created at the beginning of 1999 as an integrated oversight body with responsibilities for credit institutions, securities firms, unit trusts, stock exchanges, central securities depositories, pension funds, insurance companies and insurance brokers licensed to operate in Iceland. A number of potential weaknesses in the financial system and its

Figure 20. **Non-performing loans and appropriated assets at savings banks**
Per cent of loans net of provisions

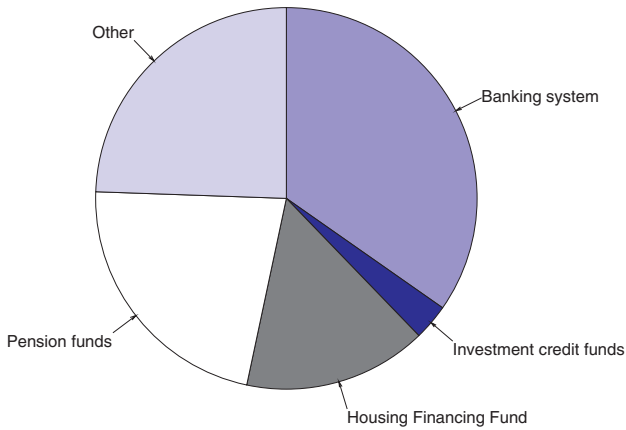


Source: Central Bank of Iceland.

supervision were apparent in 2000, and the FSA and other bodies have reacted. In particular, the resources for monitoring of institutions by the FSA needed to be strengthened and the IMF's Financial System Stability Assessment found that the FSA should be granted greater authority with respect to the licensing of financial institutions and to framing rules and regulations. In response, the budget of the FSA was raised 44 per cent between 2000 and 2002, and staffing levels were increased. Moreover, the creation of the Financial Stability Department at the Central Bank further improved oversight, and the parliament granted the FSA greater authority in late 2002. The FSA can now require higher levels of capital for institutions it deems particularly risky. However, demands on FSA resources have also grown with the expansion of the financial sector and privatisation.

The credit system is dominated by three sets of institutions – banks, pension funds and the Housing Financing Fund (Figure 21). Given the weakening in capital adequacy at banks through 2000 noted above and their dominant position in the credit market, stability concerns have been concentrated on the level of capital at the banks and the adequacy of their rules for asset classification and loan-loss provisioning. In response, the FSA has tightened its criterion for classifying loans as non-performing from six to three months in arrears and has increased on- and off-site supervision efforts. While the improvement in capital adequacy has been a positive development, the vulnerability of the financial system remains high, especially to a sharp drop in the exchange value of the krona. The

Figure 21. **The credit system**
Shares in lending and securities excluding foreign lending, 30 September 2002



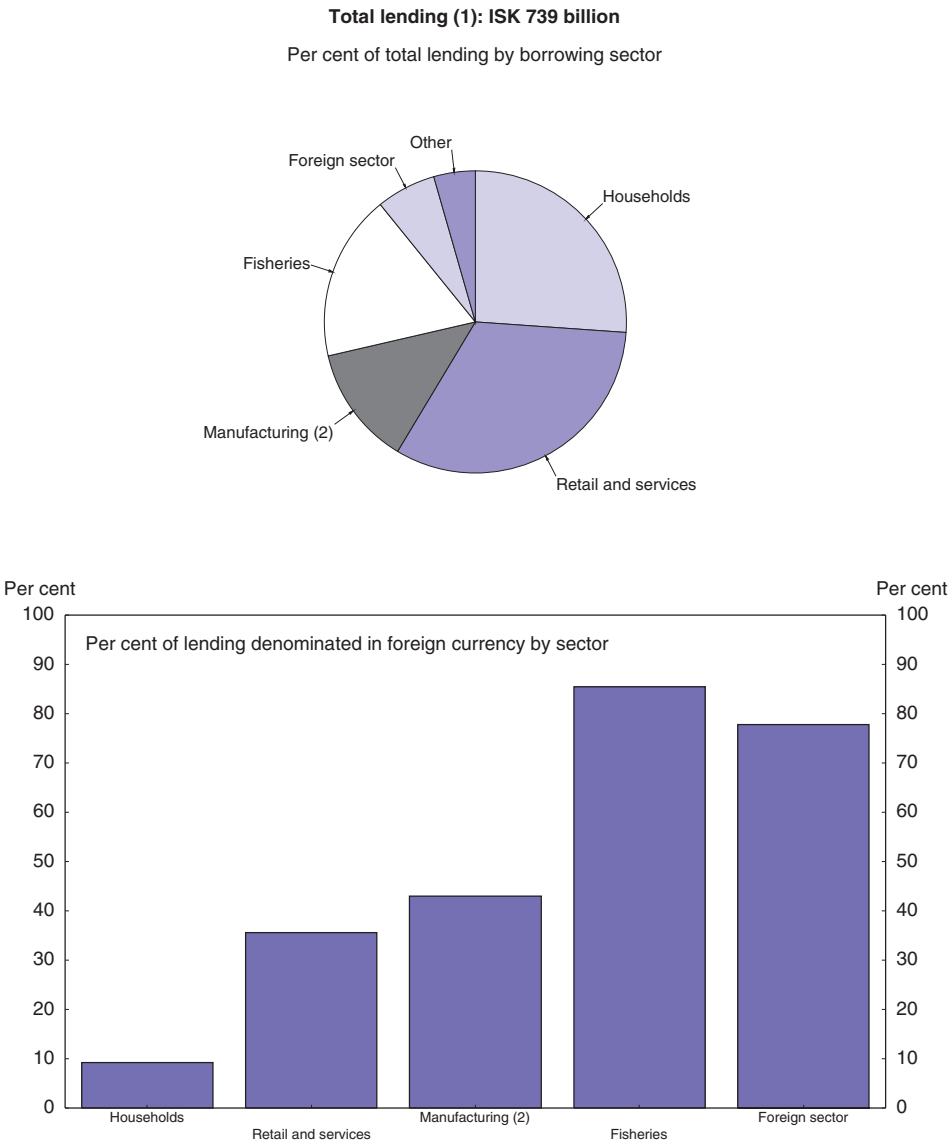
Source: Central Bank of Iceland.

share of foreign-currency-denominated loans in total outstanding loans from credit institutions fell modestly in 2002, but remains above the level that prevailed in the late 1990s. Of particular concern may be the share of such debt held by households and businesses with little in the way of foreign-currency-denominated income, such as the retail sector (Figure 22). It seems likely that the pre-2001 monetary policy regime, with its commitment to a relatively stable value of the krona, contributed to excessive foreign-currency-denominated borrowing, reflecting a view that the government was providing an implicit guarantee on such loans. The vulnerability to depreciation will likely take time to decline, and hence tight supervision and efforts to encourage strong capital positions at banks should be maintained. For example, a recent study summarises a range of risks related to macroeconomic stability and other factors in Iceland and suggests that capital adequacy ratios should at a minimum exceed 10 per cent, and that it may be prudent for banks to be even better capitalised (Magnusson and Andonov, 2002). Recent capital levels have reached this prudent benchmark. With that said, the value of the krona may remain stable or even strengthen if large power-intensive investment projects proceed over the next few years and the economy grows quickly, as discussed in Chapter I and later in this chapter.

But government policies regarding the housing market distort the financial system…

Policies that support the housing sector and tilt incentives toward home-ownership are substantial, as in some other OECD countries. Local authorities are

Figure 22. **Stock of total and foreign-currency-denominated lending across sectors**
September 2002



1. Deposit money banks, adjusted for FBA and Commercial Loan Fund.
2. Transportation, electricity and construction sectors included.
Source: Central Bank of Iceland.

responsible for meeting the housing needs of their inhabitants who require assistance. Housing committees in each area are in charge of the management and co-ordination of housing measures by the local authorities. The central government's primary direct role is mediated through the Housing Financing Fund under the supervision of the Ministry of Social Affairs. The Fund was established in 1999 and took over all the assets and liabilities of its predecessor, the State Housing Board. Its activities fall into two broad categories. The first concerns the provision of loans to individuals for buying, building or repairing their homes (and to professional builders involved in construction of single-family homes). These loans are financed through "housing bonds" and may amount to 70 per cent of the cost of the home for first-time homebuyers (and up to 65 per cent otherwise). In the second category, the Fund provides loans to households with low income or net worth to finance the purchase of housing; to local authorities, companies and non-governmental organisations to purchase or build dwellings for rent; to households that are experiencing payment difficulties; and to individuals and families who need specially-furnished housing or need to make specific alterations to their housing due to the disability of one or more family members. These loans may amount to up to 90 per cent of the cost price of the housing (except for those granted with respect to payment difficulties, which may amount to the total outstanding). Loans in this category are financed through the issue and sale of "housing authority bonds". Both types of bonds are guaranteed by the state. It is apparent that this guarantee carries substantial value on the market, as their yields have exceeded yields on long-term government securities by only about 25 basis points, and this differential largely reflects features of the bonds rather than a risk premium. In contrast, yields on bank bonds, typically of much shorter duration, have been 50 basis points or substantially more above those for government bonds with similar maturity, despite the fact that the government owned two of the three largest commercial banks until the end of last year. For example, the implicit subsidy in 2001 could easily have been in the neighbourhood of ½ per cent of GDP.[2]

Tax policy further distorts incentives for housing construction and the choice between owning and renting a home. The government pays the interest on a housing loan up to a maximum payment of 258 459 kronur, or about $3 000, per year for a married couple with no income. In addition to the maximum payment, an upper limit on the interest rate of the loan, 7 per cent, is also applied. These ceilings imply that the government pays all of the interest on a mortgage equivalent to nearly 1.2 times annual average earnings for borrowers with no income or wealth. The benefit is reduced as income or net worth increases: for a couple with zero net worth, the government ceases to subsidise mortgage interest when total household income is 25 per cent higher than average compensation per employee (*i.e.* about $4 000 per month). Although the benefit appears as a government expenditure in the budget, it is paid as a credit against income tax (with any excess over tax due paid in cash). In 2001, it cost 4.2 billion kronur. In addition, further tax

relief to housing is provided through the rebate of 60 per cent of the normal value added tax on the wage cost of new residential construction. OECD estimates suggest this second tax subsidy cost 2.2 billion kronur in 2001.[3] In total, these two tax benefits amount to about 0.9 per cent of GDP. In part as a result of these subsidies, home ownership is high, at over 80 per cent of households. The rental market focuses on low-income families. About a quarter of the stock of rental housing is owned by local authorities and is allocated by social welfare agencies to their most needy clients. Rent allowances to needy families in privately-owned units is provided to 30 per cent of renters, but equalled only 0.1 per cent of GDP in 2001.

… and policy changes could allow goals to be reached more efficiently

Adding the value of tax concessions, government guarantees to housing and housing authority bonds and assistance to low-income households suggests that the value of government housing assistance is in the neighbourhood of 1¾ per cent of GDP. While much of this assistance is means-tested and hence may meet distributional objectives, a substantial fraction goes to better-off citizens through the government guarantees. Moreover, the distortions that accompany these tax breaks and interference in the allocation of capital create a bias against other forms of investment (by businesses) that would raise productivity and living standards. They may also contribute to greater foreign indebtedness, one of Iceland's particular vulnerabilities. Therefore, reform in this area should be seriously considered. This would improve efficiency by lowering distortions between the decision to own or rent and to engage in residential *versus* other types of investment. Similar gains to efficiency could be reaped *via* a reconsideration of the state's support of the Housing Financing Fund. The resulting savings to the government could be used for other priorities, such as lower marginal tax rates, an expanded general tax credit for lower income households or expenditure needs.

Privatisation and deregulation in telecommunications and energy

Global weakness in the telecommunications business has delayed privatisation

The government has pursued a long and successful privatisation programme, and now the major remaining state-owned assets include Iceland Telecom and the National Power Company. It had been hoped that Iceland Telecom would be privatised progressively in 2001 and 2002. Following earlier discussions, the government had set out a three-stage plan. In the first stage, a limited number of shares were to be sold to the general public. Following this, a core investor was to be sought with the aim of strengthening the Icelandic telecommunications market, reinforcing the company and increasing its value in subsequent sales. The investor was to be chosen through a competitive process, *e.g.* through a limited tendering procedure following pre-selection. Several foreign telephone companies had shown an interest in acquiring Iceland Telecom. In the final stage, a substantial share in the

company was to be offered for sale on overseas markets as well as the Icelandic market, possibly starting in 2002. The arrangement and timing of the third stage was to take account of prevailing conditions on the stock market at such time.

The initial stage was set for 19-21 September 2001. At that time, a total of 14 per cent of the shares in the company was offered to the public and to employees. According to the terms decided, employees were invited to purchase approximately 1 per cent of the total shares in the Company and the public approximately 13 per cent. In the event, only 5 per cent of shares were subscribed, and following the government's decision to allow investors to back out of their offers, only 2¼ per cent of shares in the company were purchased. The government proceeded with the search for a strategic investor and narrowed this search to TeleDanmark in December 2001. However, an agreement on terms could not be reached, and the process was abandoned in February 2002. It is now apparent that the bursting of the global bubble in the market value of telecommunications firms, in conjunction with reduced profitability in that sector following the strong expansion in capacity over the late 1990s, resulted in particularly poor timing for the sale of Iceland Telecom. There have also been some who have argued that the government expected too high a price for the company. The government should proceed with privatisation in the not-too-distant future, since the likely efficiency benefits remain to be exploited. The efforts of the Post and Telecom Administration to ensure competitive pricing will be important in determining that such gains accrue to consumers, particularly since there is only one other competing in telecommunications services.

Deregulation of the electricity sector is a major undertaking…

While the privatisation of Iceland Telecom has been delayed, restructuring of the electricity sector in Iceland will prove more challenging, and only the planning stage has begun. Currently, the electricity market is dominated by undertakings primarily controlled by the state or local authorities, and power-intensive firms with long-term contracts account for the majority of demand. The latter feature will only grow with the additional large-scale projects now underway or under consideration, discussed below. Total generation in 2000 was 7.7 terawatt hours (TWh), of which the state-controlled National Power Company (NPC) accounted for nearly 86 per cent and the locally controlled Reykjavik Energy company accounted for about 6 per cent. Nearly 83 per cent of generation was from hydro-powered plants, with the remainder almost entirely from geothermal plants; the share of geothermal in overall generation nearly tripled between 1991 and 2000 (from 6.0 per cent to 17.2 per cent). Current generation is less than 20 per cent of estimates of potential for economical and environmentally feasible levels of 25 to 30 TWh per year from hydropower and an additional 15 TWh from geothermal sources, spurring the strong interest in expansion of power-intensive industry.

The NPC operates the central transmission grid and delivers electricity to all distributors on the net at the same tariff. Distribution is handled by 12 utilities with exclusive rights to distribute and sell in defined areas, with identical tariffs in each area. A separate entity, the State Electric Company, has the duty to distribute to areas without a local authority, and private parties are allowed to distribute but none do. Several problems with the current system have been inducements for reform. For example, the NPC's tariffs lump together fees for production and transmission; a number of distributing companies have claimed they can produce electricity more cheaply than the cost of purchasing from the NPC; and the system does not distinguish between natural monopoly activities such as transmission and system operation and competitive areas such as generation and distribution. In addition, reform is needed to comply with Directive 96/92/EC as part of the European Economic Area (EEA) agreement.

As a result, the parliament has been considering legislation to restructure the industry, although progress has been slow – with the proposals before it in the 2001-02 session postponed until this year. Restructuring would open generation and sale to competition by removing exclusive rights, privileges and obligations of current government enterprises and equalising taxation of parties performing similar functions. For example, such reforms might eliminate the advantage of government guarantees of NPC debt as well as NPC's duty to produce enough electricity to meet all demand. Proposals suggest that large purchasers of electricity should be able to choose their supplier this year, with a complete opening by 2005, but this seems unlikely given the slow pace of legislative progress thus far. A separate undertaking with independent management would perform transmission and system operation. The operator would be required to ensure equal access to the grid and have the sole right to build new lines. Separately managed parties would undertake distribution, with concessions for specific regions (although joint ownership of the system operator and distributors may be allowed). Tariffs for monopoly areas would be determined through an income framework set by a regulatory body (the National Energy Authority). Proposals have called for upper and lower profitability limits: a lower limit of 2 per cent return on equity and an upper limit of double the rate of interest on state bonds. Regulators would have the right to demand rationalisation if their evaluation of cost levels deems them unacceptable.

… and efficiency gains should be pursued

In very broad terms, the government's plans are a step forward and are consistent with the recommendations in the previous *Survey*: in particular, natural monopoly and competitive areas would be separated, competition for retail customers would be introduced and government-owned enterprises in the sector would eventually be privatised. But a number of issues remain outstanding. An

important concern is regional: costs for transmission and distribution are not uniform; they are lower in Reykjavik than in outlying areas, reflecting relative population densities. The current system – with uniform tariffs for power from the central grid across regions – does not provide incentives for efficient use. It appears likely that deregulation will preserve regional cross-subsidisation. It would be more efficient if such subsidies were not tied explicitly to electricity use, so that incentives were preserved on the margin, but the use of lump-sum transfers may be infeasible from a political perspective. As costs also vary through time, prices should as well – with long-term contracts allowing for smoothing by customers if desired. Broader development issues will also be relevant. Expansion of large-scale power-intensive industry has been and will continue to be of macroeconomic importance in Iceland. To date, such expansions have occurred through long-term power contracts with the NPC, with the cost of such investments initially financed through government-guaranteed debt issues and the tariff structure in the contracts benefiting from the NPC's tax-exempt status. It appears that the NPC will not be privatised for some time. Nonetheless, moves toward a private market would assist in facilitating foreign equity investments in power generation associated with large projects, thereby insulating Iceland from some of the risk. Finally, rate-of-return regulation could be improved. Because of the tendency of such systems to provide inadequate cost discipline, the proposals have included a requirement that a certain rate of productivity improvement be incorporated into the base price each year. While this is a positive feature, a price-cap mechanism with required productivity improvement could spur greater efficiency gains, but care would need to be taken to ensure adequate performance through a broadening of efficiency criteria to include customer service and reliability measures, which might otherwise be neglected (Joskow, 1997).

Expansion of power-intensive industry

Expansion in the aluminium sector would substantially increase export earnings

Significant expansion of aluminium production in Iceland is planned. This calls for heavy investment over several years, leading to notable macroeconomic consequences through at least the middle of this decade (as discussed in Chapter I) and requiring adjustments in monetary and fiscal policies to facilitate macroeconomic balance (as discussed in Chapter II). To consider the broader economic effects, it is useful to consider the current status of the aluminium industry and the effects of different planned or proposed projects. Iceland currently has two aluminium smelters located in the southwestern part of the country. The Alcan site has a current production capacity of 170 000 tonnes per year, with an operating license for 200 000 tonnes. The Nordic Aluminium smelter has a current production capacity of 90 000 tonnes per year and an operating license for double that amount. These are very large by Icelandic standards: the two smelters con-

sume approximately 50 per cent of annual electricity production (with other power-intensive industry accounting for an additional 15 per cent).

Expansion plans over the next decade have focussed on three possible projects. The largest is a greenfield industrial project by Alcoa in Reydarfjördur in eastern Iceland with a production capacity of 322 000 tonnes per year. The plant would require more than 4 TWh of electricity per year (or more than 50 per cent of current production); the NPC would build a hydro-powered plant in the region to supply the required energy. The state and local authorities would build local infrastructure, including harbour facilities. At present, the only remaining hurdle is final government approval, which will likely occur in February. Construction of the hydropower plant would begin this year, while much of the smelter construction would follow. Aluminium production is expected to start in 2007. There are also plans to expand the Nordic Aluminium and Alcan smelters in stages by as much as 210 000 and 290 000 tonnes per year, respectively, by 2013, though only about 40 per cent of this expansion (at Nordic Aluminium) is slated for commissioning by 2008. If these expansions were fully implemented, the electricity requirements at the two smelters would triple from current levels. In conjunction with the smelter in eastern Iceland, this would result in aluminium production increasing four-fold from current levels (260 000 tonnes), to over 1 million tonnes per year, with aluminium smelters then accounting for as much as 80 per cent of electricity demand in Iceland. Both these projects are in the planning stages and have not yet received private party or government approval.

As emphasised in the discussion of the outlook in Chapter I, the activity associated with any of these projects would be a plus for growth and affect monetary policy and the fiscal position in the medium term. However, the large potential increase in the importance of aluminium in exports could lead to new challenges. Aluminium accounted for nearly 19 per cent of merchandise export revenue in 2000; if all the projects were to proceed, that share could rise to nearly half. On the one hand, such an expansion would increase diversification, as marine products accounted for about two-thirds of merchandise export revenue in 2000. However, this diversification would be towards a single product subject to large price swings. This could contribute to volatility in the terms of trade, with corresponding difficulties in managing the current account and achieving internal balance. However, such concerns are less pressing than a simple consideration of the export implications might indicate. The majority of the income associated with the aluminium exports accrues to the foreign owners of the capital, and the terms-of-trade shocks have no direct effect on domestic consumers and probably only small effects on the value of the krona. The additional domestic value-added associated with the projects in the long run, primarily from electricity generation and spillovers on local activity, will be affected by fluctuations in the aluminium price (in particular, the price of electricity paid by the smelters is typically linked to aluminium prices) to a much lesser extent than trade flows. Based on earlier

estimates on the long-run impact of a different project, the three proposals would together raise GDP between 2½ and 6 per cent and GNP between 1¼ per cent and 3 per cent.

The projects have broad economic policy consequences

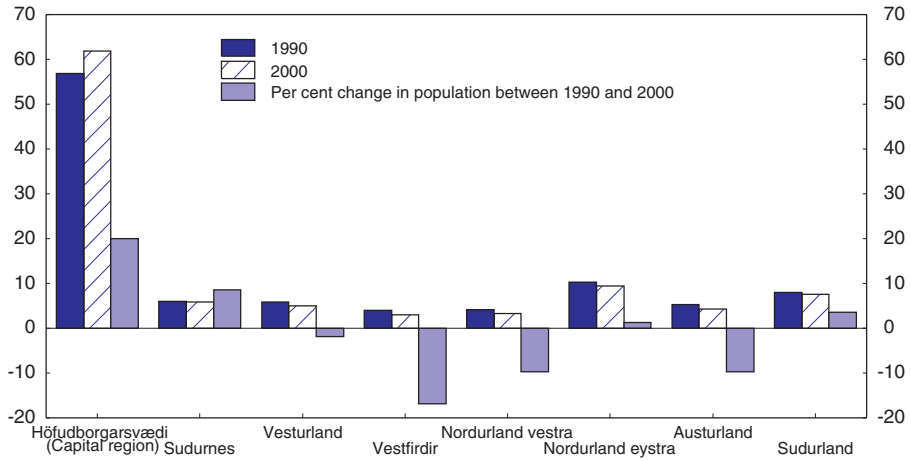
These power-intensive energy projects affects broader aspects of public policy, particularly as regards the electricity sector and regional development. The NPC clearly benefits from the government backing of its debt and favourable tax treatment, and the current system of assessing these mega projects is not completely transparent. For example, the NPC commissioned a study of the financial return of the hydro-power project in eastern Iceland (associated with the Alcoa project) (Landsvirkun, 2001): under reasonable assumptions, the real return is expected to lie in the neighbourhood of 6 per cent per year. This lies above the likely financing cost of the project, reflecting in part government backing, but not by a large margin. And the project would double the company's capital base – with all the increase tied to a single project. Any efforts to deregulate and eventually privatise the NPC could be complicated by such concentrated risks. With respect to regional issues (discussed more broadly below), the Alcoa project is linked with hopes for preserving regional populations. Between 1990 and 2000, the population in the eastern region (Austerland) fell 10 per cent, to 11 930 persons or 4.2 per cent of the national total. The region is heavily dependent on the fishing industry. The lack of diversified employment and educational opportunities has contributed to the out-migration of young people. The smelter would help increase demand for skilled labour, with a projected level of employment near 500 persons. Their presence would no doubt have favourable multiplier effects on services in the area. However, it is likely that the total boost would do no more than stabilise the size of the local population.

Regional development

The population has become more concentrated in the capital region

While the share of Iceland's population in Reykjavik has been remarkably stable since 1950 (at about 40 per cent), the population in the areas immediately surrounding the capital has grown by one-third since 1990, lifting the proportion of the population in the capital region to about 62 per cent in 2000. Of the eight major regions, only the capital region and a bordering region, the Sudurnes, experienced any significant increase in population over the last decade (Figure 23). Increased concentration has been driven by several factors. Perhaps most importantly, the decline in employment in traditional industries – fish and fish processing and agriculture – was particularly sharp (dropping from 15 per cent of the total in 1996 to 12½ per cent in 2000), while employment increases in other industries, especially services (including trade and financial services) and manufacturing

Figure 23. **Population in major regions**
Per cent of total



Source: Statistical Yearbook of Iceland, 2001.

excluding fish processing, were rapid. Traditional industries have historically not been centred in the capital region, accounting for only 2 per cent of employment in 2000 *versus* nearly 30 per cent elsewhere. The impact of the changes in the industrial mix of employment was amplified by the tightening of the labour market in the latter half of the 1990s, which brought the unemployment rate in the capital region from a level above the national average to one about equal to it by 2000. Other factors have also contributed to migration toward the capital. Educational and cultural activities cannot be sustained at a comparable level in less densely-populated regions, which has led to an especially pronounced out-migration of the young.

The growth of the capital region has had important economic consequences. The most direct has been on the residential property market: between 1997 and early 2001, real property prices in the capital region rose about 30 per cent, contributing to strength in residential construction and indirectly to other household demand – although prices have retreated somewhat with the recent economic downturn. Public infrastructure and service provision has also been affected. Migration to the capital region has increased the need for schools and other public services (and left such institutions elsewhere with excess capacity). This has necessitated increased expenditure around Reykjavik and has meant that the fixed costs of many municipal services in small and shrinking communities have needed to be spread across a thinner population base. Consequently, local government finances have been strained (see Chapters II and III). As discussed in

the section below on sustainable development, population growth in the capital region has also contributed to increased traffic congestion and some deterioration in air quality.

A *range of government policies are aimed at preserving regional balance*

The depopulation of rural areas has been followed by efforts to stem migration to the capital area and make other areas more attractive – a goal common to a number of other OECD countries. A range of such policies have already been mentioned: *i*) part of the rationale for an aluminium smelter and hydropower plant in the Austurland is to diversify the economic base of that region and increase its population; *ii*) policies to boost the income of farmers have maintained employment in this industry and hence rural population (see below); and *iii*) maintaining uniform tariffs for electricity from the central grid across areas with different costs has been driven by regional concerns. In addition, construction of a large tunnel in the Austurland linking two communities (specifically, in the East Fjords, between Fáskrúdsfjördur and Reydarfjördur) has been driven by regional development concerns (although it will also potentially aid in transportation needs associated with the power plant and aluminium smelter in the area). The difficult situation in municipal finances and the failure of the above patchwork of policies to lessen the drift toward the capital region has led to calls for further changes.

One issue has been the amalgamation of small municipalities. Current law allows the central government to require municipalities with fewer than 50 inhabitants to merge with a neighbour, and there have been proposals to increase the minimum size of municipalities, perhaps significantly (to over 2 000 persons, for example; based on year 2000 populations, this would lower the number of municipalities from over 100 to perhaps 70 or less). In addition, the municipal equalisation fund has been designed to spur amalgamation: the fund pays the costs associated with such mergers, discriminates somewhat against communities with fewer than 300 inhabitants and subsidises municipal debts after amalgamation. Stronger efforts may be necessary if the government is to meets its target of shrinking the number of municipalities to 43. The presumption is that larger municipalities could provide a wider range of services and do so more efficiently, raising the attractiveness of regions outside the capital. However, such amalgamations could also increase the distances from services for many residents and lower a sense of local control, reducing the attractiveness of rural regions.

Efforts to maintain regional populations will remain a priority as long as public opinion is supportive. But these could be improved by ensuring that marginal incentives for efficient production and consumption decisions are unaffected. Indirect policies that distort price signals – important with respect to regional goals in agriculture, regulation of savings banks, electricity prices and elsewhere – both hide the true costs of preserving regional balance and lower welfare

(through distorted relative prices for food, for example). More broadly, decisions on which types of efforts are worthwhile would be aided by increasing transparency and providing a clearer accounting of costs. For example, the hydro electric project could earn an excess financial return to Iceland or a return below market rates (Landsvirkun, 2001; Siglaugsson, 2001), but the importance of regional or even environmental effects of these projects has not been quantitatively assessed.

Agriculture and fishing

Support for agriculture remains very high and lowers consumer welfare

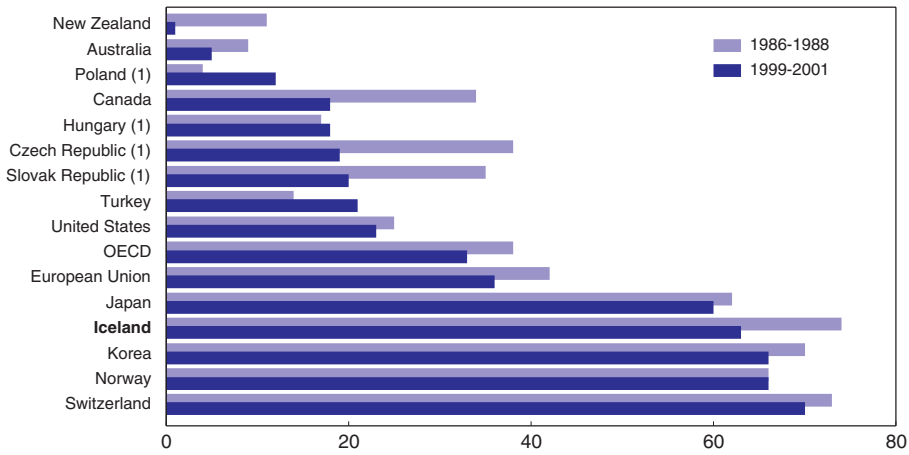
Agricultural policies have continued to distort market-based signals significantly. Much of this has reflected the importance of legislated objectives other than market efficiency that underlie policy: in particular, *self-sufficiency* for agricultural products, *maximum utilisation of domestic inputs*, promotion of *parity between producers* in each sector with regard to prices and markets, and *integration of environmental issues* with agriculture. In addition, the government views agriculture as vital to promoting a robust rural economy, and significant support for agriculture is a further manifestation of the priority accorded this goal in a variety of policy decisions.

The degree of support afforded Iceland's farmers lies at the upper end of the range across OECD countries. Total support (as measured by the OECD's producer support estimate), at over 60 per cent of the value of agricultural production, is roughly double the OECD average (Figure 24) and near the high levels in Japan, Korea, Norway and Switzerland. Similarly, policies substantially raise the cost of agricultural products to Icelandic consumers: the OECD's consumer support estimate in 2001 equalled nearly –40 per cent of the value of agricultural production, indicating a large implicit tax on consumers to support farming (at a level one-and-a-half times the OECD average and again at the upper end of the range shared by the set of countries previously mentioned). The effects of this tax for different major commodities can be seen in Table 15, which reports the ratio of consumer prices for various products in Iceland to world market prices (along with the OECD average). Over the 1999-2001 period, consumer prices in most cases were nearly double market prices. Two notable exceptions were sheepmeat, where prices were near market levels, and poultry and eggs, where prices were several times market levels. High domestic prices are maintained by a programme of administered prices for milk and a combination of low minimum access quotas and high tariff rates (with some other import restrictions) for other products.

While progress has been made, there remains substantial room for improvement

Despite the high level of market-distorting measures, there have been moves toward agriculture liberalisation over the past decade, as emphasised in previous *Surveys*. In particular, price regulation has declined significantly (with the

Figure 24. **Support to agriculture producers**
Percentage PSE



1. 1. Figures refer to 1991-1993 instead of 1986-1988.
Source: OECD, *Agriculture Policies in OECD Countries.*

Table 15. **Consumer price for agriculture commodities relative to world market prices**

	1986-88	1999-2001	2001	1999-2001 OECD
	Iceland			
Milk	5.66	2.24	1.76	1.92
Beef and veal	2.21	1.91	1.99	1.35
Sheepmeat	3.81	1.04	1.13	1.44
Wool	1.20	2.50	2.18	1.02
Pigmeat	2.95	1.89	1.18	1.29
Poultry	7.55	6.68	5.36	1.18
Eggs	5.02	3.90	3.14	1.10
Other products	3.82	1.89	1.68	1.40
All products	3.82	1.89	1.68	1.43

Source: OECD, *Agriculture Policies in* OECD *Countries*, 2002.

dairy industry now the last major exception), and production quotas for sheepmeat have been abandoned. A crude measure of this progress is apparent in the decline in the level of consumer prices relative to market levels since 1986-88 reported in Table 15. Nonetheless, significant further progress could be made. For example, the administered price for milk was scheduled for dismantling in June 2001, but this was postponed until July 2004. Further backsliding should be

avoided. More broadly, most minimum access tariff quotas have been filled; some combination of a more rapid lifting of quotas and lower tariffs for imports above quota levels would provide clear benefits to consumers. In general, tariff rates in Iceland are much higher than is typical for OECD countries, with over three-fifths of the 3 152 tariff lines in the OECD's Agricultural Market Access Database being over 100 per cent. Moreover, the environmental impact of agricultural support can be negative. Historically, high levels of support to sheep producers have contributed to soil erosion through grazing in sensitive areas. However, with the subsidy agreement effective in 2000, a link was created between sustainable land use and subsidies for sheep farming. A reduction in agricultural support would raise consumer welfare and should be pursued.

Revenues from fishing have been strong, but some structural improvements should be considered

The fish catch over the first 11 months of 2002, at nearly 2 million tonnes, was about 7 per cent above 2001 levels. The growth in the fish catch, combined with strong prices, contributed to export gains and the closing of the current account deficit last year, a discussed in Chapter I. With the rise in last year's catch, export volumes and values have continued to increase relative to year-earlier levels, the latter significantly. The rate of increase since 2000 is not likely to be repeated in the near term, in particular because the total allowable catch is not likely to increase much, if at all. With regard to cod, landings in recent years have been 27 to 39 per cent of the fishable stock, far above the 25 per cent prescribed in the catch rule, reflecting overestimates of the stock in earlier years. Stocks of major species such as cod, haddock and saithe have been at very low levels, and the Marine Research Institute continues to recommend that catch levels be consistent with stock growth and reduced mortality. In addition to issues related to catch rules and a tax on the resource rent (both of which are discussed in the following section), limited catches of minke whales and analysis of the interaction of whale numbers and cod stocks would facilitate better management. Also, the tax credit given to seamen for days spent at sea (which currently costs a bit less than 0.2 per cent of GDP) should be abolished; it was created in the 1960s to attract labour to the industry at a time when labour needs were higher and recruitment a problem, conditions that are no longer present.

Three aspects of sustainable development

There is growing concern that long-run sustainable development may be compromised unless measures are taken to achieve balance between global economic, environmental and social outcomes. This section looks at three issues at the interface of the environmental and the economic dimensions of sustainable development that are of particular importance for Iceland, drawing out the social

implications when relevant. In each case, indicators are presented to measure progress and the evolution of potential problems, and an assessment is made of government policies that affect the issue. The section also considers whether institutional arrangements are in place to integrate policy-making across the different elements of sustainable development (see Box 7). The section considers Icelandic policies in the realm of *climate change*, then *air pollution*, and, finally, developments in ensuring *sustainable use of natural resources*, focussing on fish stocks.

Climate change

Main issues

Iceland occupies an unusual position in the OECD due to the importance of its renewable energy resources, resulting in a comparatively low greenhouse gas (GHG) emission intensity despite its highly energy-intensive economy. Past

Box 7. **The integration of environmental concerns into government policy***

In 2002, the government adopted a second National Strategy for Sustainable Development, entitled "Welfare for the Future", which provides a strategy framework till 2020. The strategy was developed by an inter-ministerial committee in consultation with other relevant government bodies and wider society. The strategy sets 17 overarching goals in a wide range of areas, and proposes policies and projects to meet them as well as a set of indicators to measure progress. International commitments are another important strand for national policy. As a member of the European Economic Area, Iceland is committed to transposing most EC directives in the environmental domain into national legislation, including the requirement to conduct environmental impact assessments.

Integration and implementation of policy is less well established. In several cases the absence of basic information on the nature and scale of perceived problems limits an effective policy response. There is also a lack of attention paid to the efficiency of measures needed for robust policy co-ordination and implementation. In particular, the absence of formal cost-benefit analysis in environmental impact assessments of proposed projects hinders effective decision-making (OECD, 2001b). Furthermore, differences in priorities among ministries and across levels of government can make integration difficult without a sounder basis to assess policy options. For example, policies promoting regional development sometimes raise serious concerns about their associated environmental impacts.

* The sections of this report dealing with climate change, air pollution, and the sustainable use of natural resources are inputs into the Organisation's follow up on Sustainable Development as mandated by the Ministerial Council decision in May 2001.

policy promoting renewable sources of energy and recognition of the particular problems large projects pose for a small economy has afforded Iceland Kyoto Protocol targets that will allow GHG emissions to grow substantially over the next decade, which in turn will allow extensive development of the power-intensive sector. In this context, the main issues are ensuring that climate change policies are efficient, while minimising adverse impacts of the expansion of power generation on the natural environment.

Performance

GHG emissions in Iceland are very low (Table 16), reflecting an abundance of renewable energy sources (hydroelectric and geothermal), which account for two-thirds of primary energy supply. As a result of the promotion of renewable energy since the 1970s, renewable energy currently accounts for over 99 per cent of electricity production. Thus, even though electricity use per unit of GDP increased at a faster rate in the 1990s than in any other OECD country (because of the expansion of the aluminium smelting sector), this had only a minor impact on GHG emission trends.[4] The major sources of GHG emissions are transportation, industry and the fishing fleet, each accounting for around one-third of the total. Emissions by the transportation sector grew strongly during the 1990s (Figure 25), accounting for the majority of GHG emission growth, but decreasing fuel intensity has led to a comparatively clear decoupling from the increase in the number of vehicles (Table 17).

Policy

Iceland gained two important benefits from the Kyoto Protocol negotiations. F*irstly*, in recognition of the already high share of renewable energy in total primary energy supply, the target for the first abatement period allows an increase in GHG emissions of 10 per cent from the 1990 level, in contrast to the 5 per cent cuts for Annex 1 countries as a whole. S*econdly*, an agreement concluded in 2001 as part of the Kyoto Protocol allows carbon dioxide emissions from large projects in small economies to be reported separately from national totals if they fulfil several conditions (UNFCCC, 2001).[5] This provision is capped at 1.6 million tonnes, which is one-half of Iceland's national target. The basis of this decision was the so-called "single-projects" clause in the final act of the Kyoto conference. As Icelandic emissions are very small, a single industrial investment could lead to emissions significantly above the target set in Annex B to the Kyoto Protocol. Iceland successfully argued that its use of renewable energy could result in a global gain in GHG abatement, despite a local increase in emissions. Official projections show that current Icelandic policy should be able to meet both these targets relatively comfortably (Figure 26).

Table 16. **Main indicators: climate change**

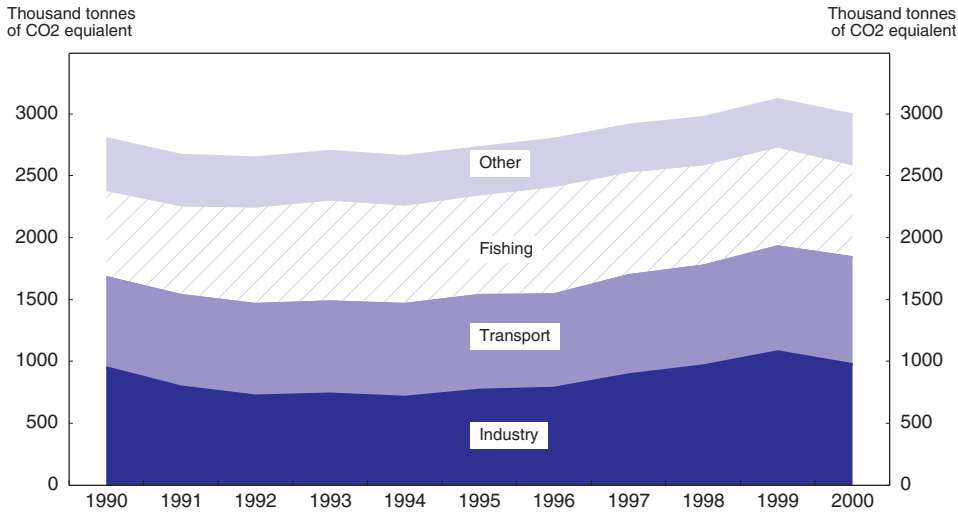
Indicators of greenhouse gas (GHG) emission intensity, grams of CO_2 equivalent per $PPP of GDP in 1995 prices

	Total GHG emissions	CO_2 emissions, electricity	CO_2 emissions, transport	Other GHG emissions	Total GHG emissions	CO_2 emissions, electricity	CO_2 emissions, transport	Other GHG emissions
	Level, 1999				Average annual percentage change 1990-99			
Australia	1 053	370	155	528	–2.07	–0.21	–1.93	–3.24
Austria	419	72	91	256	–1.87	–2.75	–0.52	–2.06
Belgium	617	97	101	419	–1.36	–2.12	0.16	–1.52
Canada	893	151	193	549	–0.98	–0.12	–0.36	–1.41
Czech Republic	1 058	457	88	513	–3.05	2.55	5.53	–6.93
Denmark	549	194	94	261	–1.64	–1.43	–1.49	–1.85
Finland	652	181	105	366	–1.88	–0.02	–1.29	–2.83
France	416	32	103	280	–1.69	–2.04	0.16	–2.26
Germany	536	169	96	271	–4.00	–3.86	–0.57	–5.05
Greece	813	275	130	408	–0.24	0.07	0.74	–0.73
Hungary	786	250	84	453	–2.33	1.44	0.38	–3.74
Iceland	**395**	**4**	**88**	**303**	**–1.28**	**0.00**	**–2.31**	**0.81**
Ireland	694	165	103	426	–4.27	–2.41	0.79	–5.75
Italy	439	105	92	242	–1.05	–0.82	0.37	–1.64
Japan	432	130	82	221	–0.30	–0.03	1.24	–0.99
Luxembourg	344	6	242	97	–11.46	–30.20	–0.45	–18.81
Netherlands	573	138	82	352	–2.38	–1.03	–0.94	–3.15
New Zealand	1 096	92	175	828	–2.28	4.58	0.65	–3.32
Norway	487	4	113	369	–2.54	1.31	–1.53	–2.87
Poland	1 195	481	90	624	–4.96	–6.63	0.50	–4.12
Portugal	540	149	106	285	0.41	2.58	3.37	–1.39
Slovakia	957	200	76	680	–4.47	–1.21	3.13	–5.78
Spain	537	127	130	280	0.41	1.12	1.28	–0.26
Sweden	358	41	112	204	–1.55	0.07	–0.65	–2.30
Switzerland	276	3	79	195	–0.62	–1.96	–0.28	–0.73
United Kingdom	526	132	108	287	–3.66	–5.30	–1.38	–3.61
United States	792	278	196	318	–1.89	–0.60	–1.18	–3.28
OECD total	649	196	140	312	–1.80	–0.98	–0.38	–2.83
EU	506	120	103	283	–2.36	–2.60	–0.16	–2.95

Source: Greenhouse gas emissions: national submissions to the UNFCCC and national publications. Carbon dioxide emissions for electricity and transport: IEA (2001). GDP: OECD, SNA database.

As Iceland has already virtually only renewable energy sources for electricity generation, limiting GHG emission growth to meet the national Kyoto target relies largely on reducing emissions of perfluorocarbons (PFCs) in aluminium production through the requirement of using best-available technology and GHGs in transport and fisheries. Due to concerns about the impact on its profitability, the Icelandic authorities have avoided targeting the fishing fleet directly. Thus, measures to arrest GHG emission growth have been ensuring that subsidised electricity prices in harbours are competitive with on-board generators, promoting energy

Figure 25. **Composition of GHG emissions**



Source: UNFCCC.

efficiency through the renewal of the fishing fleet, and reducing the use of hydrofluorocarbons (HFCs) as cooling agents. In the realm of transport, the government is considering changing taxation to favour diesel vehicles further and supporting the commercial development of hydrogen fuel cells (see Box 8). One anomaly of taxation policy in Iceland is that no duty is levied on diesel fuel. Diesel vehicle owners either pay a tax based on the distance driven or can opt for a standard weight-related charge, which becomes economical as from around 40 000 kilometres per year (OECD, 2001b).[6] Such a tax structure presents limited incentive for fuel economy and raises some concerns about emissions of conventional air pollutants (see below).

Given its reluctance to limit fossil fuel use, the government is promoting domestic carbon sinks as a means to reach the "national" Kyoto target,[7] which is also potentially advantageous in arresting soil erosion. During the 1990s, around four thousand hectares of land were reclaimed annually in carbon sequestration projects.[8] In 2000, annual sequestration was estimated to be 130 000 tonnes, *i.e.* just under 5 per cent of gross GHG emissions. At present, costs to the government are around $12 per tonne of carbon sequestered.[9] While the costs of carbon sequestration can be small, experience elsewhere shows the scope for extending sequestration at low cost is limited (Kolshus, 2001). There are considerable differences in carbon sequestration rates in Iceland, suggesting that costs may also vary considerably.[10] Furthermore, afforestation is not a permanent means of carbon abatement, as once a forest matures no further carbon sequestration occurs.

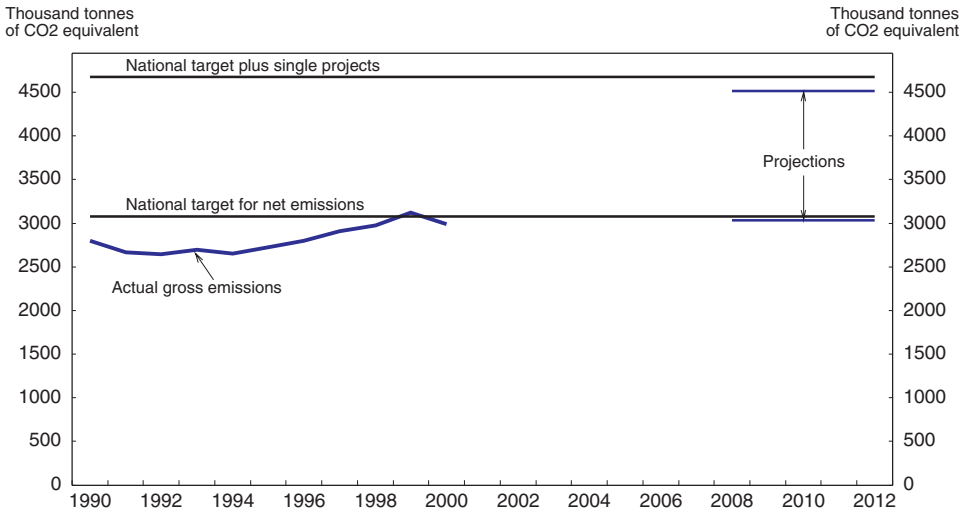
Table 17. **GHG emissions and sectoral indicators**

	Total GHG emissions		CO_2 emissions per kWh electricity	Manufacturing CO_2 emissions per unit of industrial production	Residential CO_2 emissions per unit of private consumption	Road transport CO_2 emissions per vehicle	Electricity use per unit of GDP	Industrial output per unit of GDP
	Level in million tonnes CO_2 equivalent 1999	Annual average percentage change						
		1990-99[1, 2]				1990-98	1990-99	
Australia	489	1.6	0.4	−0.5	−2.0	−1.7	−0.6	−1.9
Austria	80	0.3	−2.5	−3.1	−4.6	−1.8	−0.2	1.1
Belgium	151	0.6	−2.0	−1.0	−1.3	0.0	−0.1	−0.3
Canada	699	1.6	0.4	−3.1	−3.4	1.4	−0.6	1.0
Czech Republic	138	−3.4	1.9	−12.6	−11.4	−1.4	0.6	1.7
Denmark	73	0.6	−3.7	−3.6	−5.5	0.5	2.4	0.8
Finland	76	−0.1	−1.0	−5.4	−7.7	−0.6	1.0	2.9
France	549	−0.1	−2.8	−1.5	−1.2	0.1	0.8	−0.2
Germany	994	−2.3	−2.2	−2.7	−5.0	−2.6	−1.7	−0.9
Greece	124	1.9	−1.7	−1.6	8.0	−1.1	1.8	−1.4
Hungary	84	−2.0	−1.2	−13.5	10.0	−2.0	2.7	6.2
Iceland	**3**	**1.1**	..	..	**−8.5**	**−1.6**	**2.9**	..
Ireland	65	2.2	−0.6	−11.2	−5.6	3.5	−1.8	5.6
Italy	540	0.4	−1.6	−1.8	0.4	0.4	0.8	−0.4
Japan	1 328	1.0	−1.1	0.7	−2.3	0.1	1.1	−1.9
Luxembourg	6	−6.4	−21.5	−13.8	−1.2	1.0	−11.1	−3.3
Netherlands	218	0.4	−0.3	−2.4	−4.1	−0.2	−0.7	−0.8
New Zealand	76	0.5	5.6	0.3	−3.4	−0.6	−0.9	−1.0
Norway	56	0.9	4.8	−2.0	−7.8	0.9	−3.4	−1.5
Poland	400	−1.5	−3.7	−6.3	15.6	−1.7	−3.0	3.8
Portugal	86	3.1	0.6	1.2	1.9	−0.4	2.0	−1.2
Slovakia	53	−3.6	−2.0	−6.3	−0.4	0.6	0.9	−2.4
Spain	371	2.9	0.1	−1.5	1.9	−0.2	1.0	−0.4
Sweden	71	0.0	1.0	−4.0	−4.1	0.4	−0.9	1.5
Switzerland	53	0.0	−3.8	0.1	−2.5	−0.7	1.9	1.0
United Kingdom	647	−1.5	−4.7	−1.7	−0.7	−0.2	−0.7	−1.6
United States	6 830	1.2	0.2	−5.3	−2.3	1.1	−0.8	1.2
Total of above OECD countries	14 257	0.5	−0.7	−3.1	−1.6	0.1	−0.3	0.1
OECD excluding United States	**7 428**	**0.0**	**−1.8**	**−2.0**	**−1.1**	**−0.6**	**0.0**	**−0.6**
EU countries	4 048	−0.4	−2.4	−2.2	−2.0	−0.6	−0.2	−0.5

1. 1995-99 for Czech Republic; 1991-99 for Germany; 1992-99 for Hungary and Slovakia; no data for Iceland.
2. 1991-98 for Czech Republic; 1995-99 for Slovakia.

Source: UNFCCC; IEA; OECD.

Figure 26. **Icelandic greenhouse gas emissions and targets**



Source: UNFCCC, national authorities.

Box 8. Hydrogen fuel cells

The Icelandic New Energy Company, with the involvement of the Icelandic government and major international energy and vehicle producers, is piloting a special experiment in Iceland to use hydrogen fuel cells. The primary advantage of hydrogen fuel is that energy generation is virtually emission free, leading to abatement of GHGs and conventional pollutants. The trials require large-scale investment in vehicles and the supporting infrastructure. In the trial, three buses using diesel fuel will be replaced with vehicles powered by hydrogen fuel cells. The intention is to expand the trial to automobiles and eventually fishing vessels. They will be the first application of sufficient size to test the reliability of hydrogen as an alternative to fossil fuels for transportation. While the results will be of interest to other countries, creating hydrogen fuel is particularly energy demanding, requiring relatively cheap renewable energy inputs to make it a realistic option for climate change strategies (Eliasson and Bossel, 2002).

The major challenge facing the authorities is integrating the economic and environment consequences of the large increases in aluminium production. The smelter projects currently envisaged will require a significant increase in hydroelectric electricity generation. The Alcoa project will affect 82 000 hectares of

unspoilt central highlands. Initially, the planning authorities rejected the project on the grounds of the environmental damage, but the Ministry for the Environment overturned this ruling with several modifications imposed to reduce the environmental impact.[11] One of the contributory factors leading to the reversal was the policy objective of attempting to slow the population movement from rural areas to the capital region. However, as described above, the impact of the aluminium smelter on regional settlement may be limited, and the economic viability of the project is also subject to some controversy. The Planning Agency is also expected to rule on another aluminium-related dam that will affect the Thjorsarver wetlands, which are recognised as of international importance. In addition, expanded aluminium smelting raises concerns about emissions of conventional air pollutants (see below).

Conclusions

As a result of the special treatment Iceland has received in the Kyoto Protocol negotiations, meeting emission targets should not present particular difficulties. Nonetheless, policies should ensure that the necessary abatement efforts are as efficient as possible. By virtue of Iceland's island status, the taxing of the carbon content of all fossil fuels is possible and could help Iceland meet its commitments. Thus, diesel vehicle taxation should change to allow the introduction of an excise tax based on carbon content of fuels and other externalities. However the tax should not be above the marginal cost of capturing carbon in forests in order to ensure efficiency. The Icelandic authorities should also promote at the international level the introduction of a carbon tax on fuels used at sea, given that part of the fishing fleet can refuel abroad. While carbon sequestration is an attractive means of climate change mitigation at present, care is needed to ensure that resources are directed to the most promising areas and that wider impacts on the environment are also considered. Tendering for carbon sequestration may prove attractive in ensuring that resources are used cost effectively and may prevent the costs of sequestration rising excessively. The proposed energy-intensive investments that take advantage of the single-projects exemption have generated considerable controversy. In order to assess whether these projects are in the best interests of the country, the government should require the undertaking of transparent cost-benefit analyses, taking into account the environmental impact. If such calculations show that they are not viable on economic and environmental grounds, it is unlikely that they can be justified on social or regional grounds, given that the associated employment creation will be modest.

Air pollution

Main issues

Air pollutants can potentially harm both human health and the environment. While air pollution is a smaller problem than in many other countries, emissions and concentrations of some air pollutants have increased in the past

decade, though declines have occurred in some cases. Given the risk of air pollution deposition at sea affecting fish stocks and thereby fish exports, and the importance of eco-tourism, the main issues facing Iceland are identifying the causes of air pollution and ensuring that it is kept within reasonable limits and at reasonable cost.

Performance

In relation to GDP, emissions of sulphur and nitrogen dioxide are significantly higher in Iceland than in most OECD countries (Table 18). Furthermore, due to the rapid expansion of energy-intensive industries, these emissions have been growing quite rapidly, in contrast to the downward trends in most Member countries, with much weaker decoupling of emissions from GDP growth than on average for the OECD area. Particulate matter is also a growing concern in the Reykjavik area. In the late 1990s, concentrations of particulate matter recorded occasional readings above EU limit values. One surprise of recent measurements was the presence of relatively high concentrations of tropospheric (ground level) ozone in the capital region (Figure 27), with a concentration above EU daily limit values experienced in 1999 for the first time. The cause for this has yet to be determined, though rising transport-related emissions of ozone precursors may be one factor.

Policy

Iceland is committed to reducing air pollutants as part of the European Economic Area, UNECE, Nordic Council and OSPAR agreements.[12] The transboundary nature of many air pollutants and the limited extent of Icelandic emissions mean that the benefits of domestic abatement may be small. This arises as air transport of domestic emissions shifts deposition away from Iceland, but – unlike many other countries – without posing problems for neighbouring countries. In consequence, Iceland has selectively ratified agreements in the past, concentrating on air pollutants that were perceived as posing a greater threat, principally heavy metals and persistent organic pollutants (POPs).

For the Icelandic authorities, the importance attached to heavy metals and POPs[13] lies in the potential damage to exports if bio-accumulation in sea animals rises (Ministry of the Environment, 2001). However, concentrations of these pollutants in fish and shellfish are currently below WHO dietary guidelines (Yngvadóttir *et al.*, 2002). In the case of heavy metals, the introduction of a higher tax on leaded petrol in the 1990s led to the disappearance of this fuel in Iceland, and consequently emissions have collapsed. In accordance with international agreements, the strategy addressing POPs has outlawed the import and use of certain chemicals or charged a substance-specific fee to cover the costs of dealing with the resulting hazardous waste. A prohibition of open-pit burning of waste will also reduce emissions of one class of POPs (dioxins). However, the major expansion of

Table 18. **Main indicators: air pollution**

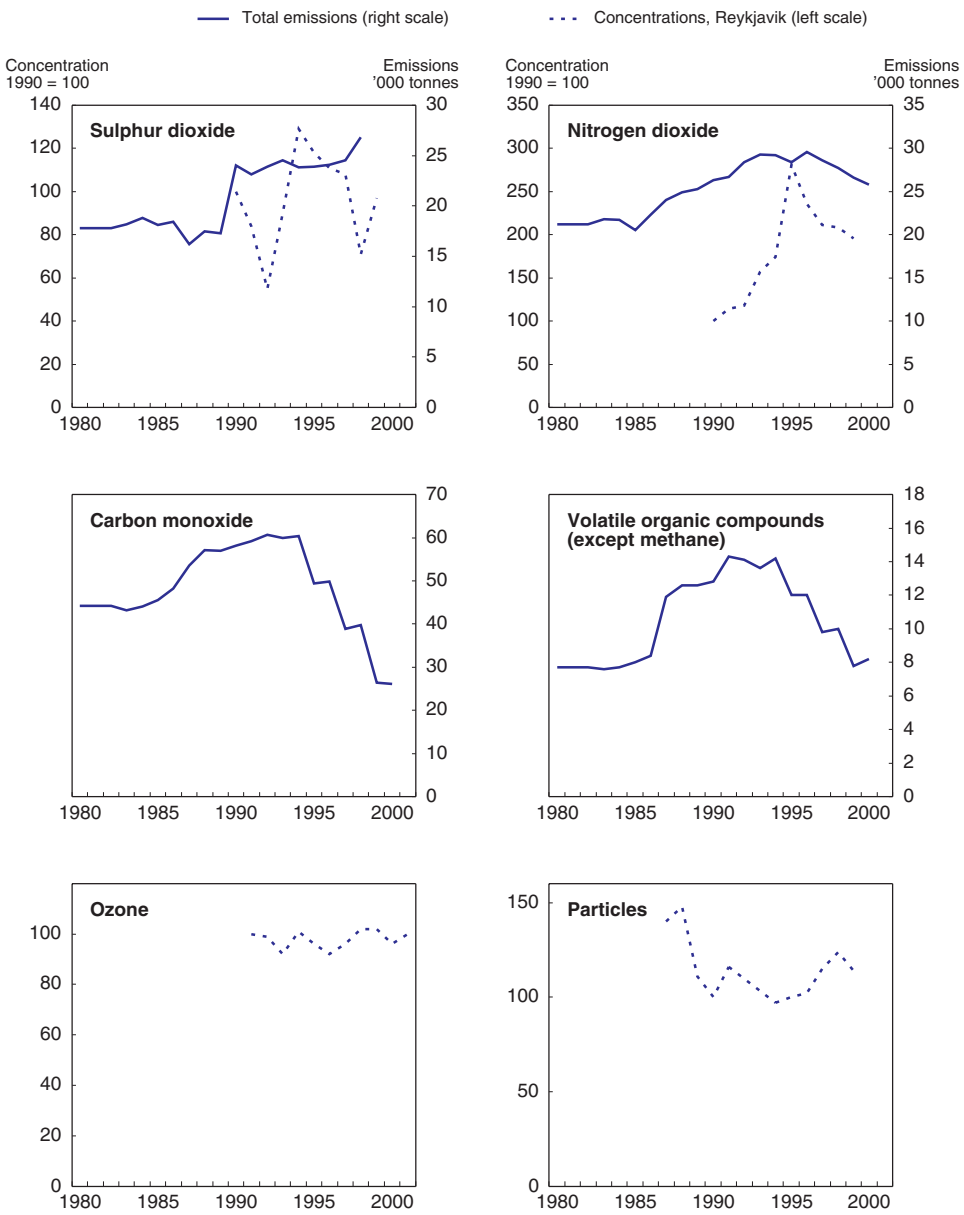
	Change in emissions per unit of GDP, 1990-99[1]			Level of emissions, 1999[2]			Improvement in productive efficiency, 1990-99	
	Sulphur dioxide	Nitrogen dioxide	VOCs	Sulphur dioxide	Nitrogen dioxide	VOCs	Sulphur dioxide per unit of electricity output	Nitrogen dioxide per vehicle
	Per cent per year			Grams per dollar of GDP				
Australia	3.1	–1.9	–2.9	3.9	5.5	4.1	n.a.	n.a.
Austria	–10.2	–3.5	–6.5	0.2	0.9	1.2	–77.2	–32.5
Belgium	–9.2	–3.6	–4.8	0.8	1.2	1.1	–64.4	–22.6
Canada	–5.3	–2.8	–2.9	3.2	2.6	3.5	n.a.	n.a.
Czech Republic	–19.1	–6.6	–5.7	2.1	3.0	1.9	n.a.	n.a.
Denmark	–14.2	–4.9	–5.2	0.4	1.6	1.0	–79.8	–38.9
Finland	–13.0	–3.8	–4.1	0.7	2.1	1.4	–65.3	–28.7
France	–8.3	–3.8	–5.1	0.5	1.2	1.4	–52.0	–37.8
Germany	–20.1	–7.1	–8.8	0.4	0.9	0.9	–85.2	–43.7
Greece	–1.4	–0.3	–0.2	3.6	2.5	2.6	–4.6	–22.3
Hungary	–6.1	–1.1	–3.8	5.5	2.1	1.4	n.a.	n.a.
Iceland	**–1.1**	**–1.7**	**–4.9**	**3.7**	**3.9**	**1.4**	**n.a.**	**n.a.**
Ireland	–8.1	–6.3	–7.9	1.7	1.3	1.0	–35.8	–19.0
Italy	–7.6	–4.3	–4.4	0.8	1.2	1.4	–52.8	–31.3
Japan	–1.7	–1.3	–2.4	0.3	0.5	0.6	n.a.	n.a.
Korea	–8.9	–3.3	–9.7	1.6	1.9	0.2	n.a.	n.a.
Luxembourg	–18.7	–9.1	–7.9	0.2	0.9	0.9	n.a.	n.a.
Mexico	–0.4	–0.9	–9.3	1.6	1.6	1.4	n.a.	n.a.
Netherlands	–10.1	–6.5	–8.8	0.3	1.1	0.7	–50.2	–
New Zealand	–0.4	–0.5	–1.6	0.7	3.0	2.6	n.a.	n.a.
Norway	–9.7	–2.8	–1.8	0.2	2.0	3.0	n.a.	n.a.
Poland	–10.0	–6.6	–4.8	5.1	2.8	2.2	n.a.	n.a.
Portugal	–2.1	–0.9	0.1	2.4	2.3	3.1	–17.7	–18.3[3]
Slovakia	–13.7	–7.4	–5.6	3.3	2.4	2.0	n.a.	n.a.
Spain	–5.8	–2.1	–3.5	2.2	1.7	3.6	–39.4	–14.4
Sweden	–8.3	–4.3	–3.9	0.3	1.3	2.1	–26.0	–
Switzerland	–6.0	–5.4	–6.3	0.1	0.5	0.9	n.a.	n.a.
Turkey	3.2	1.0	0.0	3.4	2.3	1.6	n.a.	n.a.
United Kingdom	–13.9	–7.9	–6.6	1.0	1.3	1.4	–72.8	–51.0
United States	–5.5	–2.5	–4.7	2.0	2.7	1.9	n.a.	n.a.
European Union	–11.1	–5.0	–5.3	0.8	1.2	1.5	–	–
OECD Europe	–10.1	–4.8	–5.0	1.2	1.4	1.5	–	–
OECD	–6.7	–2.9	–4.4	1.5	1.9	1.6	–	–

Note: For the OECD average data for countries with missing data for either 1990 or 1999, data for the latest year has been substituted. Estimated data for 1999 represents about 5 per cent of the area total. GDP is measured in 1995 prices. Cross-country aggregations use 1995 purchasing power parity exchange rates.

1. Australia: 1995-99 for sulphur dioxide; New Zealand: 1990-98; Mexico: 1994-98 for sulphur dioxide and VOCs and 1990-98 for nitrogen dioxide; Slovakia: 1990-98 for sulphur dioxide and nitrogen dioxide and 1990-97 for VOCs.
2. 1998 for Mexico, New Zealand and sulphur dioxide and nitrogen dioxide in Slovakia; 1997 for VOCs in Slovakia.
3. Between 1990 and 1997 for Portugal.

Source: Cooperative Programme for Monitoring and Evaluating of Long-Range Transmission of Air Pollutants in Europe (EMEP); World Health Organisation; OECD (2002a).

Figure 27. **Air pollution emissions and concentrations**

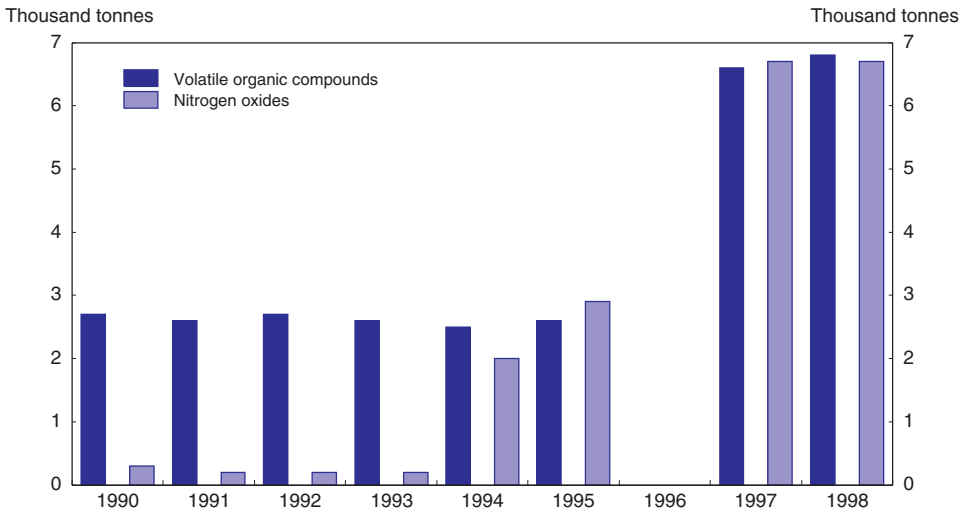


Source: EMEP; OECD, *Environmental data*, 2002; The Icelandic Meteorological Office.

aluminium production will increase emissions, including carcinogenic polyaromatic hydrocarbons. In the Reydarfjördur (Alcoa) project there will also be an element of air pollution deposition to sea at high concentrations, though this is considerably less than the previous project planned for this location (Guerreiro, Laupsa and Knudsen, 2001). The Aarhus Protocol[14] requires the application of best available technology for all new plants from 2002, though this requirement has been in place in Iceland since 1998, and for existing plants by 2006. Though this best available technology requirement means that industrial plants will be much less polluting, reducing POP emissions will also require action leading to reductions from mobile sources, principally from diesel engines but also fishing vessels.

Air pollution is a growing concern in the capital region, especially of particulate matter and ground level ozone. While annual average particulate concentrations have declined in recent years, moderate winter weather conditions can lead to heightened concentrations due to road abrasion from studded winter tyres on roads with limited snow cover. Current standards for diesel vehicles (in line with EEA requirements) impose less stringent particulate matter emission requirements than for petrol engines. While the sources of ground level ozone are unknown at present, the emissions of ozone precursors from mobile sources grew during the 1990s (Figure 28). As with particulate matter, current standards for diesel engines set less demanding emissions requirements of ozone precursors than for petrol engines.

Figure 28. **Ozone precursor emissions from transport**



Source: EMEP.

Conclusions

While emissions and concentrations of some air pollutants have risen, the impact on health and the environment is likely to have been small so far. The Icelandic authorities should identify sources of air pollution, examine its impact on health and the environment and act to minimise externalities in line with cost-benefit analysis. A tax on traditional studded tyres to accelerate the diffusion of newer less abrasive winter tyres is a measure that could reduce particulate matter concentrations. To address both particulate matter pollution and ground level ozone the government should better align vehicle taxes to emission characteristics. The use of diesel vehicles with efficient particle filters should also be encouraged. However, given that peak concentrations are relatively rare, policies to mitigate particulate matter pollution and tropospheric ozone should be implemented only to the extent that a cost-benefit analysis reveals that they are warranted. Considering the large increases envisaged in aluminium production and consequent emissions of POPs, the authorities should ensure that this externality is also taken into account in the cost-benefit analysis recommended in the previous section for new and expanded aluminium smelters. Since most current diesel engines, both land- and sea-based, are also a source of POP emissions. If research proves the need for more demanding reductions than already contained in international agreements, the diesel fuel tax (proposed above) should reflect this externality. Given the difficulties faced in applying such a tax for fishing vessels, policy should be adapted to promote the diffusion of less polluting engines.

Sustainable use of natural resources

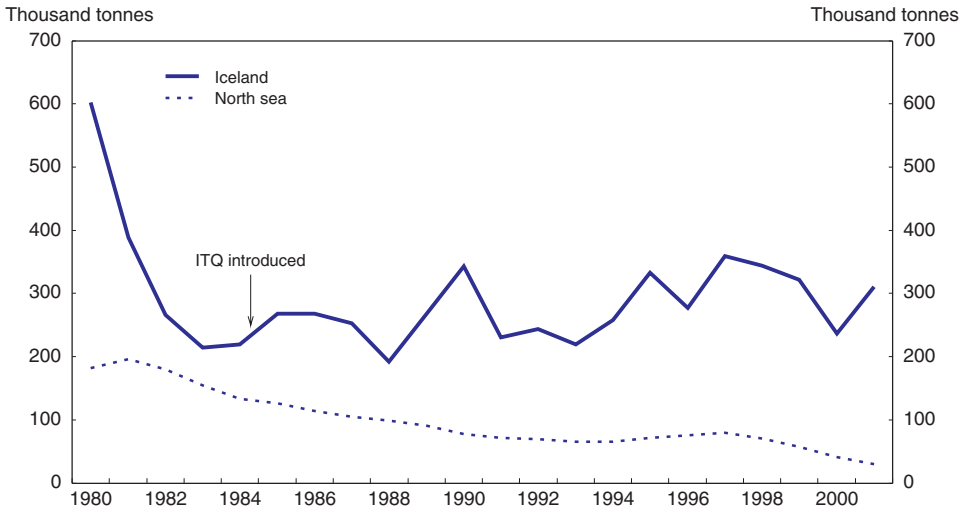
Main issues

Fish are one of Iceland's most important natural resources, and the fishing industry is one of the largest sectors of the economy. Iceland has pioneered a rights-based management system for fisheries in an effort to preserve this vital natural resource from the problem of the commons. The main issue facing the nation is improving the operation of the fisheries management system without undermining support for what has proved to be an effective means of husbanding fish stocks.[15]

Performance

In recent years, cod stocks in Icelandic waters have maintained their size in contrast to other fishing areas (Figure 29). However, while total landings of cod are significantly lower than before, the total fish catch has increased over the 1990s, thanks to an increase in the landings of other species, such as capelin and blue whiting. Since 1990 an ongoing market-based rationalisation of the fishing fleet has seen employment and the number of vessels fall. These developments occurred even

Figure 29. **Cod spawning stocks in the north east Atlantic**



Source: ICES.

though government transfers to the fishing industry are the lowest amongst OECD countries with marine fishing fleets (Table 19). Larger vessels are accounting for an increasing proportion of the fleet, which has led to a rise in gross tonnage. The profitability of the fishing sector remains volatile in comparison with other sectors of the economy (Figure 30).

Policy

Iceland manages its fishing through science-based estimates of the catch consistent with a sustainable yield. An Individual Transferable Quota (ITQ) system, as embodied in the 1990 Fisheries Management Act, is now firmly at the heart of fisheries management policy, though some technical restrictions exist, such as closing fishing areas to protect juvenile fish. Although fishing resources are recognised as a national asset, the ITQ system has allocated shares of the sustainable yield to each boat-owner on the base of historical catches, creating a *de facto* if not a *de jure* property right. These shares are transferable, and there has been extensive quota trading, allowing more efficient fishing operators to acquire a larger share of the catch (Arnason, 2002).

Since the passage of the Fisheries Management Act there have been some minor changes concerning access, but no change with respect to limits on the concentration of quota holdings. Following a constitutional court ruling in 1998, the government was forced to reassess access to fishing.[16] Amendments

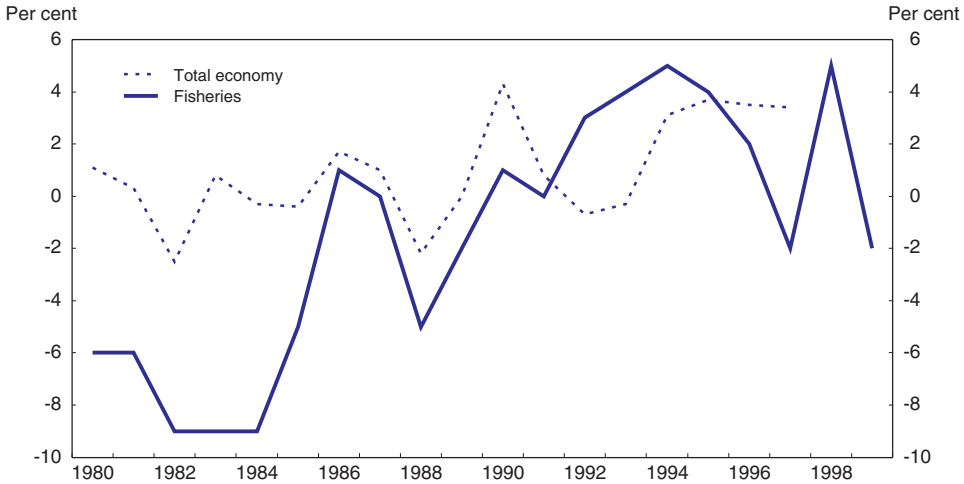
Table 19. **Main indicators: natural resources**

	Fish catch	Fishing fleet			Transfers to the fishing industry
	Per cent change	Per cent change			Per cent of landed value
		Tonnage	Employment	Number of vessels	
	1990-97	1985-97			1999
Australia	–2.8	78.1	11.6	–81.4	–
Austria	–4.7	–	–	–	–
Belgium	–25.6	1.6	–33.8	–31.2	–
Canada	–38.5	–	–17.2	–31.6	42.1
Czech Republic	–	–	–	–	–
Denmark	22.9	–29.9	–22.0	–46.1	7.4
Finland	22.5	140.4	–27.0	–	136.8
France	–5.2	4.2	–	–39.2	7.2
Germany	–18.5	–86.0	82.0	58.6	31.0
Greece	46.4	–38.7	41.7	238.1	47.3
Hungary	–35.3	–	–	–	–
Iceland	**46.5**	**62.7**	**–5.1**	**8.5**	**4.4**
Ireland	35.9	–	–	–65.7	51.3
Italy	6.9	–12.3	–	–2.6	17.8
Japan	–35.4	–42.1	–35.6	–12.6	23.7
Korea	–8.7	15.6	–30.6	4.3	12.8
Luxembourg	–	–	–	–	–
Mexico	10.5	–	29.5	102.5	–
Netherlands	8.4	20.0	12.8	–0.9	–
New Zealand	79.7	–	–45.7	–18.3	–
Norway	83.9	–3.8	–22.5	–42.6	14.3
Poland	–17.4	–	–47.5	–	–
Portugal	–29.1	–39.3	–	–32.7	8.8
Slovak Republic	–	–	–	–	–
Spain	3.1	–18.7	–	–2.6	13.8
Sweden	40.0	–	–	–	23.9
Switzerland	–28.8	–	–	–	–
Turkey	30.0	21.4	159.2	–	–
United Kingdom	25.5	–19.7	6.5	–	8.0
United States	–7.2	–	–76.9	–	30.8

Source: FAO, OECD and World Bank.

in 1999 now allow any potential Icelandic vessel the right to hold a quota, irrespective of the history of the fishing vessel. Thus, while this change may potentially allow the fishing fleet to expand, the overall catch remains constrained. An initial concession in the design of the ITQ system that could potentially inhibit the emergence of greater efficiency was imposing limits on the concentration of ITQ holdings. Fearing an excessive concentration of ITQs, legislators allowed municipal authorities the right of first purchase to prevent the migration of the quota

Figure 30. **Fishing sector profitability**
Profit as a percentage of revenues



Source: National Economic Institute.

from the locality and imposed limits on the holdings of individual companies.[17, 18] Subsequent developments tended to show insignificant concentration at the regional level and hence limited social consequences. There has, however, been some concentration of quotas in the largest firms due to mergers, though still well within the limits established in law (Runolfsson and Arnason, 1999).

A major challenge for fishing policy is the setting of, and adherence to, the total allowable catch (TAC). As with any rights-based system, the setting of an appropriate TAC is crucial not just in protecting fish stocks but also in restoring stocks to a level that maximises long-run returns. The Ministry of Fisheries has tended to set TACs above the level advised by the Marine Research Institute (MRI) in recent years. Scientific advice suggests that a cod TAC of 25 per cent of the estimated fishable stock would lead to a marked increase in the availability of fish. Such a rule was implemented between 1995 and 1999 on an automatic basis. However, in 2000, a 30 000 tonne limit on the inter-annual change in this TAC was introduced, when the MRI revised its estimates of fish stocks sharply downwards (OECD, 2001a).[19] Over the following two years, estimates of the 2003 spawning stock fell by 40 per cent and predicted cod landings by 30 per cent (Marine Research Institute, 2000 and 2002), presumably largely because of the failure to cut back as sharply as the MRI recommended though such estimates are uncertain. The government has now set the TAC for 2002/03 in line with the recommendations of the Marine Research Institute. If catches are held to this limit, and this

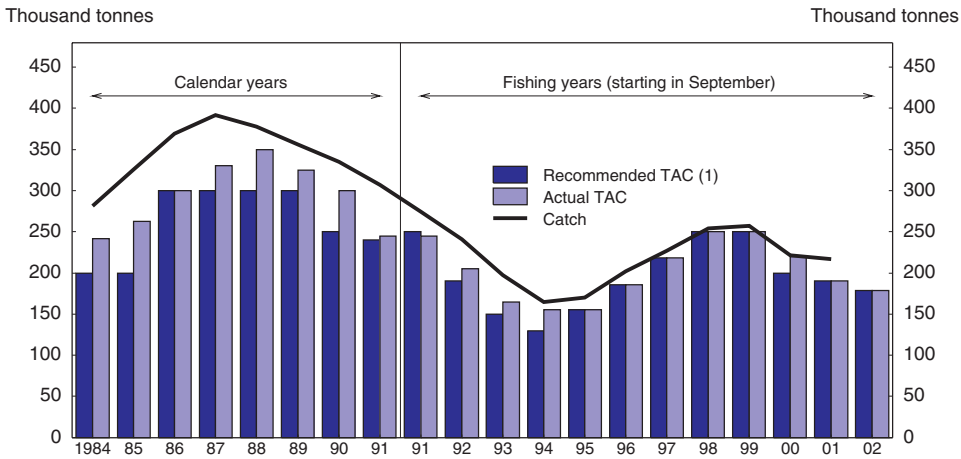
was not the case in 2001, then stocks should start to climb by 10 per cent annually in the next few years. However, by 2005, stocks will still be only 60 per cent of the economically optimal level of 1.5 million tonnes. Such a large difference between projected and optimal stocks suggests that the TAC-setting mechanism may need to be reconsidered.

Adhering to the TAC limit is complicated by special concessions granted to small boats. Originally, small boats were exempted from the ITQ system and TAC limits. This exemption from the ITQ system led to an expansion of small boat numbers, which tended to fish for cod, the most valuable stock, and contributed to landings somewhat above the cod TAC limit (Eggertsson, 2002) (Figure 31). Similar excesses of catches over MRI advice exist for some other species as well. Changes introduced in 1991 for cod and in 2001 for other species have constrained fishing by all small boats, though by inefficient effort-based restrictions.[20] Despite these improvements, maintaining effort-based restrictions allows actual catches to exceed levels deemed optimal by the MRI experts.

With the success of fisheries management policy, discontent over the initial free distribution of the initial quotas has arisen. Partly in response to this, the Icelandic parliament agreed in 2002 to introduce a fishing fee from 2004.[21] The fishing fee will be set initially at 6 per cent, rising gradually to 9.5 per cent by 2009, of the landed value of the catch, excluding wages (that themselves are related to catch value) and major running costs. The fishing fee will help cover the operating

Figure 31. **Cod TACs and actual catches**

Calendar years until 1991, fishing years starting in September from 1991



1. According to a catch rule as from 1996.
Source: Marine Research Institute; Statistics Iceland.

costs of implementing fisheries management policy that amount to 3 per cent of gross catch values.[22] There are a number of other attractive attributes to taxing the resource rent (Matthiasson, 2000). For example, as the fishing fee is inversely related to input costs, it could potentially reduce profit risk. In addition, such a tax will be less distortionary than other taxes. Furthermore, revenue from the fishing fee could be used to compensate regions that have suffered as a result of the ongoing rationalisation of the fishing industry, substituting for the various market-specific interventions discussed earlier in this chapter.

Conclusions

In comparison with many other OECD countries, Iceland has made marked progress in changing fishing policy to protect its vital fish stocks while simultaneously attaining greater efficiency in the fishing industry. The recent modifications to the system to encompass formerly exempt fishers in the TAC are welcome. However, the effort-based system of dealing with small boats should be abolished, and such boats should be treated the same as their larger counterparts in the ITQ system. The TAC concentration limits should also be relaxed with a view to their elimination, with potential concentration problems dealt with in the context of competition policy. In the recent past the total allowable catch has been set at a level that makes little progress towards longer-term goals for stocks because of large downward revisions in stock estimates and larger uncertainties in stock estimates than anticipated. With stocks of cod now considerably below their economically optimal level, there is a case for reconsidering the current TAC rule and making it more conservative, thereby allowing a more rapid build-up of cod stocks. Indeed, given the interdependencies amongst stocks, extending the use of automatic rules is warranted. These automatic rules should be species specific, targeting transition to the optimal economic stock. The introduction of a fishing fee could have some positive impacts, but revenues should not be used to sustain inefficient fishing.

Notes

1. An evaluation published in the Central Bank Monetary Bulletin 2003/1 broadly confirms the Ministry of Finance's estimates summarised in Table 4.
2. In 2001, outstanding housing bonds increased by 38.5 billion kronur to 225.3 billion kronur. Assuming this reflected new issues of 25-year bonds at a yield of 5¼ per cent, the face value (on a zero-coupon basis) of these 25-year bonds equalled 138.4 billion kronur. Issuance of that amount of bonds at a yield of 5¾ per cent, which is likely the minimum that would occur without government guarantees, would have yielded only 34 billion kronur. This difference, 4.5 billion kronur, equals 0.6 per cent of GDP and is a lower bound for the value of the subsidy. While the Housing Financing Fund must pay a nominal fee for government guarantees and asset-backed securities such as bonds supported by mortgages should yield less than unbacked securities, the low differential suggests that the Fund retains a market advantage.
3. Residential investment amounted to 30½ billion kronur in 2001. Assuming that labour costs amounted to 50 per cent of the total and the VAT rebate was 60 per cent of the standard rate of 24.5 per cent implies the subsidy is ½ times 30½ billion kronur times 24.5 per cent times 60 per cent, or 2.2 billion kronur.
4. Aluminium smelting offers Iceland a way to export its renewable energy resources.
5. The exemption applies to carbon dioxide emitted from industrial processes using best available technology only. In addition, for a country to be eligible its emissions must be less than 0.05 per cent of the total for Annex 1 countries and electricity from renewable energy. While electricity is generated by renewable sources, 1.5 tonnes of carbon are emitted as carbon-based anodes burn up in the production of 1 tonne of aluminium. The production of aluminium also leads to the emission of other greenhouse gases, perfluorocarbons, which do not fall under the provision and are included in the national total.
6. The tax for heavier vehicles is also less than the damage they do to road surfaces (OECD, 2001a).
7. At the Conference of Parties at Marrakech (COP 7) agreement was reached over accounting for land use change and forestry.
8. Severe soil erosion currently affects about 6 per cent of the land area in Iceland. Land reclamation policy targets areas where erosion is removing vegetation cover. However, care is needed to prevent the land reclamation and afforestation disrupting sites that are important for rare bird species (Icelandic Society for the Protection of Birds, 2001). In addition, by contributing to over-grazing current agricultural support runs counter to land reclamation efforts (OECD, 2001b).
9. Private costs incurred in these carbon sequestration projects are not included in the estimate.

10. Arnalds, Gudbergsson and Gudmundsson (2000) report annual carbon sequestration rates ranging from 0.01 to 0.60 tonnes of carbon per hectare, depending on area, soil type and method of sequestration used.
11. Details can be found at: *www.karahnjukar.is*
12. The UNECE (United Nations Economic Council for Europe) is the secretariat for the Convention on Long-Range Transboundary Air Pollution. The OSPAR Convention for the Protection of the Marine Environment replaced the Oslo and Paris Conventions, which regulated dumping at sea and sea pollution from land-based sources.
13. Although POPs include a wide range of chemicals, most concern centres around industrial PCBs, polychlorinated dioxins or furans (unwanted by-products of various industrial processes), and pesticides such as DDT, chlordane and heptachlor.
14. The 1998 Aarhus Protocol of the UNECE Convention on Long-Range Transboundary Air Pollution establishes obligations concerning the use of persistent organic pollutants.
15. See OECD (1999 and 2001a) for a fuller description of fisheries management policy and performance.
16. Previously, in order to obtain a fishing license for a new vessel an existing vessel had to be taken out of service. The constitutional court initially ruled that this requirement was counter to the "right to work". A fisher subsequently landed fish without a quota, leading to a second ruling that upheld the government's position that a quota was a necessary pre-requisite to engage in fishing (Palsson, 1999).
17. The Regional Development Institute can allocate a small share of the total allowable catch to fishing villages that are dependent on fishing, but have lost quotas.
18. No single company is allowed to control more than 12 per cent of the total national quota. Currently, one transportation and investment company holds 11.4 per cent.
19. The downward revision in stocks was due to two factors. Firstly, model estimates failed to take into account a recent warming of sea-water temperatures, leading to an unusual distribution of fish stocks. Secondly, the very success of the ITQ system in increasing fishing efficiency has resulted in the models over-predicting fish stocks by basing estimates on actual fish catches.
20. The Fisheries Management Act does not set individual quotas for small boats but allows a number of pursuit days that are estimated to be needed to harvest a set portion of the TAC. Small boats with the right to this type of fishing are allowed to trade this right.
21. An alternative means of efficiently extracting the resource rent would have been to auction the fishing quotas. Implementing such a change in the regulatory system now might, on equity grounds, have to involve paying some compensation to the existing quota holders.
22. At present, other fees cover only half of fisheries management costs incurred by the government.

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Annex I

Calendar of main economic events

2001

March

The Central Bank sold dollars for 6.8 billion kronur between 23 and 27 March; the pressures on the currency reflected uncertainty regarding the Central Bank's meeting on 27 March. On that date, the Central Bank and Prime Minister announced an agreement that increased the independence of the Central Bank and shifted the policy regime to inflation targeting. At the same time, the Central Bank lowered the repo rate by 50 basis points to 10.9 per cent.

May

The Central Bank published its first inflation forecast on 4 May; inflation in 2001 was expected to reach 5¾ per cent, just below the upper range of the inflation target's band.

June

The Central Bank intervened in the currency market on 21 June, selling dollars for 2.5 billion kronur; the currency had depreciated sharply the previous day, and the intervention yielded some appreciation.

September

On 28 September and subsequent days, the Central Bank intervened in the currency market, selling dollars for 10 billion kronur; while the intervention boosted the currency temporarily, the krona dropped back to its lows in the following weeks.

October

The budget for 2002 was presented; it forecast a surplus of 18.6 billion kronur. In part, the surplus target was intended to contribute to a moderation in inflation and narrowing of the current account deficit.

November

The Central Bank cut the repo rate by 80 basis points to 10.1 per cent on 8 November.

December

The 2002 budget was passed by the Althingi. The surplus was virtually unchanged from the budget proposal. Higher expenditures on wages, health care and interest rebates were offset by cuts in investment and other areas.

2002

January

A commercial banking license was issued to Kaupthing on 11 January.

February

On 15 February, Fitch announced its AA- credit rating on obligations in foreign currency for the Republic of Iceland. It affirmed its ratings of AAA for long-term debt and F1+ for short-term debt. The outlook on long-term ratings was changed from stable to negative.

March

The government announced that it was temporarily abandoning its efforts to privatise Iceland Telecom on 13 March.

On 26 March, the Central Bank announced it would lower the repo rate 50 basis points, to 9.6 per cent, effective 1 April.

April

Moody's Investors Service announced on 16 April that the narrowing in macro imbalances had helped to sustain the stable outlook on Iceland's Aa3 foreign-currency borrowings and Aaa ratings for issuing government bonds in local currency.

The Central Bank lowered the repo rate 30 basis points on 30 April, to 9.3 per cent effective 1 May.

May

The Central bank cut the repo rate 50 basis points, to 8.8 per cent, on 21 May.

June

The government sold a large portion of its share in Landsbanki, reducing its stake from 68 per cent to 48 per cent of the bank.

On 18 June, the Central bank reduced the repo rate by 30 basis points, to 8.5 per cent, effective 25 June.

July

The government announced its plans to sell stakes of 25 per cent or more from its holdings of Landsbanki and Bunadarbanki.

August

The Central Bank announced it would lower the repo rate 50 basis points effective 6 August; the rate was cut again on 30 August, to 7.6 per cent, effective 1 September.

September

The Central Bank cut the repo rate to 7.1 per cent, effective 21 September.

October

The Central Bank cut the repo rate to 6.8 per cent, effective 21 October.

The budget for 2003 was presented; it forecast a surplus of 10.7 billion kronur. The lower surplus than in the previous year mainly reflected an expectation that asset sales would yield less revenue in 2003.

The government announced an agreement to sell a 45.8 per cent stake in Landsbanki, reducing its holdings in the bank to 2.5 per cent. Proceeds from the sale equal about 1½ per cent of expected 2003 GDP, and most of this would be used to reduce foreign debt.

Moody's Investors Service upgraded its foreign-currency country rating for bonds and bank deposits to its highest rating, Aaa.

November

The Central Bank lowered the repo rate to 6.3 per cent, effective 12 November.

Standard and Poor's Ratings Services revised its outlook on the Republic of Iceland from negative to stable, and affirmed its foreign-currency issuer rating of A+/A-1+ and its local currency issuer rating of AA+/A-1+.

The government announced a preliminary agreement to sell a 45.8 per cent stake in Bunadarbanki, reducing its holdings in the bank to 9 per cent. Proceeds from the sale equal about 1½ per cent of expected 2003 GDP, and most of this would be used to reduce foreign debt.

December

The 2003 budget was passed by the Althingi. The forecast for the budget surplus was raised to 11.5 billion kronur as upward revisions to revenue estimates outweighed additional expenditure in a number of areas.

The Central Bank lowered the repo rate to 5.8 per cent, effective 18 December.

2003

January

Alcoa announced its intention to go ahead with the construction of a new aluminium smelter at Reydarfjördur in the east of Iceland.

February

The Central Bank lowered the repo rate to 5.3 per cent, effective 18 February.

March

The parliament passed legislation that allows Alcoa to build an aluminium smelter in the eastern part of the country.

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