OECD Economic Surveys

ICELAND



Volume 2008/3
February 2008

OECD Economic Surveys

Iceland

2008



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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.

The economic situation and policies of Iceland were reviewed by the Committee on 29 January 2008. 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 11 February 2008.

The Secretariat's draft report was prepared for the Committee by Hannes Suppanz and Andrea de Michelis under the supervision of Patrick Lenain.

The previous Survey of Iceland was issued in August 2006.

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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, 31 December 2007	312 872	Occupational distribution, 2007 (per cent)	
Net increase 1997- 2007, annual average, %	1.4	Agriculture	3.8
		Fishing and fish processing	4.7
		Other manufacturing	11.5
		Construction, total	10.1
		Trade	16.3
		Transport and communication	7.1
		Other services	59.6

PARLIAMENT AND GOVERNMENT

Present composition of Parliament	2007
Independence Party	25
The Alliance Party	18
Progressive Party	7
The Left-Green Movement	9
The Liberal Party	4

Last general election: 12th May 2007

PRODUCTION AND CAPITAL FORMATION

Gross domestic product in 2006		Gross fixed capital formation in 2006	
ISK million	1 162 930	ISK million	387 992
Per head, US dollars	54 764	Per cent of GDP	33.4

FOREIGN TRADE

Exports of goods and services in 2006, % of GDP	32.2	Imports of goods and services in 2006, % of GDP	38.4
Main exports in 2006 (% of merchandise exports)		Imports in 2006, by use (% of merchandise imports)	
Fish products	51.2	Consumer goods	20.2
Aluminium	23.5	Capital goods and transport equipment	46.2
Other manufacturing products	14.8	Industrial supplies	25.1
Agricultural products	1.8	Fuels and lubricants	8.4
Miscellaneous	8.7		

THE CURRENCY

Monetary unit: Króna		Currency units per USD, average of daily figures:	
		Year 2007	64.1
		December 2007	62.4

Executive summary

Following significant structural reforms and foreign direct investment projects, the Icelandic economy enjoyed several years of rapid expansion, which entailed major internal and external imbalances. While growth has slowed and imbalances have diminished, the adjustment process has been uneven, with wage developments, improving financial conditions and government measures rekindling demand and inflation pressures during the course of 2007. The economy is quite flexible and resilient but remains vulnerable to changes in foreign-investor sentiment, as evidenced by the recent volatility in the exchange rate and share prices. Thus, the key challenge for policy in the near term is to restore macroeconomic stability by ensuring that steady progress is made in unwinding imbalances. Additionally, steps need to be taken to strengthen the ability of both monetary and fiscal policy to moderate economic volatility and prevent the re-emergence of major imbalances with a view to sustaining Iceland's favourable growth performance. In a longer-term perspective, there will be many spending pressures and a key challenge for policymakers will be health-care reform. Although the overall fiscal position is favourable, health care (which is largely government-financed) is a major source of public spending pressures. Health outcomes are very good, but the system is costly, suggesting that there is room for enhancing cost-effectiveness. The major issues addressed in this Survey are thus:

Swiftly restoring economic balance

- *Make it perfectly clear that the Central Bank would not hesitate to tighten the monetary stance further if this is necessary to anchor inflation expectations at the official target. In order to support the credibility and the effectiveness of monetary policy, it would be helpful if members of government respected the independence of Central Bank policymaking.*
- *As long as excess demand and inflation pressures persist, avoid expansionary fiscal measures. Likewise, to the extent possible, phase in gradually new major energy-intensive investments, which, in any case, must not proceed without prior evaluation within a transparent, broad cost-benefit framework (including environmental impacts).*

Strengthening the macroeconomic policy framework

- *After inflation has stabilised, further strengthen the "frame-budgeting approach" by adopting binding nominal multi-year spending ceilings consistent with the inflation target. Introduce similar fiscal rules for local governments, including spending limits. This would increase the contribution of fiscal policy to macroeconomic stabilisation and enhance public ownership of the inflation target.*
- *Once inflation has been durably brought down to the target, refinements to the inflation-targeting framework could be considered (such as adjustments to the target variable).*
- *Reform the publicly-owned Housing Financing Fund (HFF), which not only distorts resource allocation but also undermines the effectiveness of monetary policy and contributes to economic imbalances. At a minimum, charge the HFF a fee reflecting the benefit of its government*

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guarantee. Morever, it is recommended that its social functions and wholesale market operations be split up, with targeted transfers addressing the social objectives.

Improving cost-effectiveness in the health-care sector

- *Facilitate private provision, which accounts for only one quarter of publicly financed health services, and open up the sector to competition, thereby enhancing efficiency and broadening patient choice. Consider more reliance on co-payments so as to avoid a situation in which competition among providers in a context of no, or very low, cost-sharing leads to overconsumption of medical services. These measures would also relieve pressure on public finances.*
- *Strengthen the government's role as a buyer of health services, establishing ceilings on public spending, speeding up cost-efficiency analysis of major services and introducing activity-based funding arrangements.*
- *Further reduce the reliance on, and increase the efficiency of, costly hospital care and take measures to reduce the high cost of pharmaceuticals by promoting the use of generic drugs.*

ISBN 978-92-64-04298-8
OECD Economic Surveys: Iceland
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Assessment and recommendations

A decade of strong economic growth has lifted living standards but has fuelled imbalances

The Icelandic economy is prosperous and flexible. With its *per-capita* income growing at double the OECD rate since the mid-1990s, it is now the fifth-highest among member countries and more than a quarter above the OECD average. This impressive performance is attributable to extensive structural reforms that deregulated and opened up the economy, thereby unleashing entrepreneurial dynamism, as evidenced by an aggressive expansion of Icelandic companies abroad. Improved growth performance has been accompanied, however, by mounting tensions and imbalances in the economy. With financial-market liberalisation facilitating access to credit, and reducing its cost, aggregate demand has increasingly outstripped potential output, despite a substantial inflow of foreign workers. As a result, inflation and the external deficit have soared. Foreign indebtedness is the highest among OECD countries. This has made the economy vulnerable to changes in foreign investor sentiment, especially in the context of fragile global financial-market conditions.

Restoring economic stability remains the major challenge in the near term

With tightening macroeconomic policies and the maturing of major aluminium-related investment projects, economic activity slowed and growth came virtually to a halt in the year to the first quarter of 2007. However, it rebounded subsequently as wage developments, improved financial conditions and expansionary government measures rekindled demand and inflation pressures. In particular, previously announced cuts in personal income and consumption taxes, intended as a structural reform to enhance efficiency, were not helpful in terms of short-term economic stabilisation. Also, the Housing Financing Fund's credit conditions were eased in the run-up to the general election in May, but were reversed after the election. Financial-market conditions worsened again following the international turmoil in August 2007 and the monetary stance was tightened further in the autumn in response to a deteriorating inflation outlook. As a result, economic activity is expected to weaken again in the period ahead and to remain sluggish through 2009. By then, the emergence of a negative output gap should bring inflation down to near the official target while the current account deficit should narrow gradually. Yet there are considerable risks and uncertainties surrounding such a scenario of gradual adjustment relating, in particular, to the forthcoming wage round and the country's sensitivity to external shocks as manifested by the volatility of the exchange

rate. Consequently, the key challenge for policymakers in the near term is to ensure that steady progress is being made in unwinding internal and external imbalances.

Monetary policy will have to bear the brunt of the work

Inflation has exceeded the official target of 2½ per cent since mid-2004. While housing policies have undermined the effectiveness of monetary policy (see below), it can be argued that the Central Bank has at times been too hesitant in raising interest rates. The Central Bank's communication strategy has greatly improved: now it publishes an interest rate path consistent with meeting the inflation target. With hindsight, however, it is clear that policymakers reacted too slowly to new information and were overly optimistic about the inflation outlook. Over most of 2007, monetary policy remained on hold before a renewed tightening late in the year. This reflected initial estimates that overstated the slowdown in activity as well as uncertainties related to substantial cuts in fishing quotas and the effects of international financial-market developments. Yet there were signs of a rebound in household demand and inflation from mid-year. International developments have contributed to a marked increase in long-term interest rates and real lending rates more recently. Still, *monetary policy will need to remain tight until inflation expectations are firmly anchored at the inflation target*. This is crucial to minimise second-round effects of wage increases or exchange-rate depreciation. *It would also be helpful if members of government respected the independence of Central Bank policymaking, as this would reinforce the credibility and effectiveness of policy.*

Although the financial system has withstood market stress, it needs to be monitored closely

The international liquidity crisis has increased uncertainty about economic prospects as markets are likely to remain volatile in the foreseeable future. So far, Iceland's financial institutions have weathered the storm well, although increased risk aversion has led to higher borrowing cost for Icelandic banks. While their rapid expansion has raised concerns about financial stability, supervisory and rating agencies consider that the financial system is broadly sound. Stress tests suggest that banks have adequate capital to withstand large credit and market shocks. However, these scenarios do not account for the second-round effects of such shocks. Hence, *the authorities should continue efforts aimed at improving the risk assessment and supervision of the financial system*.

Fiscal policy should be more supportive of monetary policy

With the benefit of hindsight, it is clear that the tax cuts in early 2007 eased the fiscal stance prematurely. Although the general government budget is still in substantial surplus, the latter is estimated to have narrowed by some 2 percentage points of GDP in 2007 (to around 4%). The 2008 budget proposal implies a further decline in the surplus (to around 1% of GDP), as expenditure is planned to increase by 8% in real terms. This reflects a rise in public investment by one-quarter, with central government investment virtually doubling. This rapid increase in spending risks reducing the cost-efficiency of these

investments and would most likely exceed the absorptive capacity of the economy. *Hence, the planned increase in public investment should be moderated.* To the extent that higher expenditure is aimed at counteracting the effects of cuts in catch quotas on fishing communities, additional investment in human capital (such as retraining) would seem to be a more appropriate policy response. *It is important that public-sector wage growth be restrained in the upcoming round of negotiation and that new spending initiatives be avoided.*

Decisions on investment projects are crucial

Large-scale aluminium-related investment projects are relevant both from a stabilisation and a longer-term prosperity perspective. They explain part of the current imbalances and there is a risk that new ones will be undertaken before economic stability is restored. The new government has promised to time such projects in a way that would promote economic stability. It has also announced that no new projects would be started before a "master plan" for future energy use has been completed. However, this moratorium does not apply to projects for which research and other permits have already been issued and only concerns "untouched land". A generally positive assessment of the National Planning Agency gives the impression that work on one project (which would involve investments equivalent to 10% of GDP) could start soon. To the extent possible, *new large-scale power-intensive investments should be phased in once macroeconomic imbalances have been corrected.* More generally, such large-scale public investments are inherently risky and, even though they appear to be profitable, they give rise to substantial contingent liabilities for the government. A lack of transparency makes it impossible to evaluate whether public utilities earn appropriate returns for the use of natural resources, the environmental costs and the risks they are taking on. *No major investments in energy-intensive projects, including those already in the planning phase, should proceed without prior evaluation within a transparent and comprehensive cost-benefit framework (including environmental impacts and inter-generational effects).*

Housing policies also need reform

Housing policies have had a destabilising impact on the economy. Easing of lending criteria and changes to funding strategies at the publicly-owned Housing Financing Fund (HFF) sparked a competitive battle with the private banks in the middle of the decade, entailing a decline in real mortgage rates at the same time as the Central Bank was trying to tighten monetary conditions with hikes in the policy rate. In mid-2006, following market turbulence involving a sharp fall in the exchange rate, the HFF's lending conditions were tightened, but this move was reversed prior to the general election in 2007 through government decision, before being re-instated afterwards. *The Housing Financing Fund needs to operate free from government interference and to refrain from actions which complicate the stabilisation efforts of monetary policy.* More fundamentally, the presence of the HFF, which can borrow at lower rates because of its government guarantee, prevents fair competition and distorts the allocation of resources by subsidising housing activity. Reform of housing policies must not be delayed further. *To level the playing field, government backing for HFF bonds should be terminated or the HFF be charged a fee to cover the cost of the government guarantee.* The social objectives of the HFF can be addressed more transparently and cost-effectively through targeted transfers.

Once stability is achieved, adjustments to the inflation-targeting framework could be considered

The inflation-targeting framework adopted by the Central Bank of Iceland and its communication policy reflect in many ways best practice in this area. There are nonetheless some features of the framework which could be refined over time to better take account of the inherent volatility of the Icelandic economy and to contribute to avoiding unnecessary employment and output fluctuations. To be sure, changing the rules of the game before inflation has been durably brought back to target would probably be counterproductive. However, once this has been achieved, modifications to the framework could be beneficial. In particular, greater emphasis on inflation expectations, which are key to influencing long-term interest rates, is needed. *The Central Bank policy statements should further emphasise the importance of inflation expectations, which should always remain firmly anchored even if actual inflation deviates from target. Another change that would be desirable is a revision of the methodology used to impute the service flow of owner-occupied housing entering into the target measure of inflation.* The fact that the housing component of the targeted price index reflects mortgage rates has the unfortunate effect that monetary tightening tends to raise the target measure of inflation. Adopting a rental equivalence approach for owner-occupied housing is difficult because the rental market in Iceland is relatively small. Still, the issue needs to be addressed, perhaps in the context of related work at the European level. Changing the targeted index would obviously require a reconsideration of the targeted level of inflation.

Strengthening the fiscal policy framework could reduce macroeconomic volatility

Since the early 1990s, Iceland has been using a top-down "frame-budgeting" approach and, in recent years, it has also published medium-term budget projections and guidelines for expenditure growth in real terms. However, this has not arrested a tendency towards expenditure drift, which has limited the potential stabilisation role of fiscal policy. There is thus a clear need for strengthening the framework. The government has recognised this and intends to present proposals to Parliament in its spring session. According to the National Audit Office, a number of ministries and agencies have repeatedly overspent their annual budgets with few consequences, despite existing regulations. One reason for insufficient spending discipline is that "frame-budgeting" is not implemented for a multi-year period, which would address the problem of expenditure base drift. To the extent that medium-term plans exist, they have in practice been more a forecasting exercise than a means of budgetary restraint. Moreover, the real expenditure targets are very global and allow large overruns in nominal terms, often related to wage increases. *Moving towards a fiscal framework with binding nominal medium-term expenditure ceilings for each ministry would increase spending discipline, improve the counter-cyclical impulse from fiscal policy and be more consistent with the inflation-targeting framework.* Nominal ceilings consistent with the Central Bank's inflation target would enhance transparency and thus increase the enforceability of fiscal rules; as well, they would increase the public ownership of the objective of controlling inflation. *While automatic stabilisers should be allowed to run their course (at least on the revenue side), public investment seems to be an instrument which is ill-suited for demand*

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management. Instead, public investment should be geared to enhancing the growth potential of the economy. Both international and Icelandic experience suggest that timing and implementation problems make investment a poor means of stabilisation policy. Rather than trying to fine-tune public investment according to perceived cyclical requirements, expenditure should be implemented on the basis of medium-term plans derived from careful and independent cost-benefit analysis. *Future direct tax cuts that are desirable for efficiency reasons (but not reductions in indirect taxes) should also be part of a medium- to long-term strategy, which should include quantified objectives for the budget balance (such as a surplus over the medium term) or appropriate government debt levels relative to GDP.*

Fiscal rules should be extended to local governments

Fiscal rules at the local government level also need to be strengthened. Municipalities account for one-third of total public spending and more than one-half of total government investment. While the local government income-tax rate is capped, equalisation payments rise automatically with central government revenues and municipalities have shown even less restraint than the central government in using windfall revenues during the economic boom for additional expenditure. The government has begun negotiations with the local authorities to address these problems, offering debt relief and increased equalisation payments in exchange for the adoption of ceilings on debt and real expenditure growth (including investment). In principle, *the same fiscal rules that apply to the central government should also be introduced for local governments in order to achieve national expenditure and stabilisation objectives*. The diversity of municipalities, especially their very different demographics, needs to be taken into account, however, as well as costs arising from new central government legislation.

Longer-term fiscal pressures call for reforms to the health-care system

Notwithstanding a secular increase in public expenditure, government finances are in better shape than in many other countries. Public indebtedness is low by international comparison (although the government has very high contingent liabilities in international comparison) and fully-funded occupational and public-employee pension funds limit the effects of population ageing. Still, there are some areas where spending pressures will remain strong, in particular health care, which is largely government-funded, suggesting that the authorities should aim at achieving budget surpluses. Per capita expenditure on health care has risen more than on average in other OECD countries and its growth has exceeded that of Iceland's per capita income by an even higher margin. Although long-term projections are surrounded by considerable uncertainties, they suggest that, as a result of population ageing and medical cost pressures, public health-care spending could reach 15% of GDP by 2050 if no restraining measures are taken. Certainly, Iceland is a rich country and can afford to spend a lot on health care. But while Iceland's GDP per capita betters the OECD average by about one quarter, given low private health care spending, its public per capita expenditure on health care already now, when its demographic structure is still very favourable, exceeds the OECD benchmark by 40%. *Given the outlook for public*

health-care spending and its implications for government finances, the authorities need to explore the scope for, and take measures aimed at, raising cost-effectiveness.

The good health status of the population…

To be sure, care has to be taken to maintain the high-quality health services and the enviable health status of the Icelandic population. Life expectancy is among the highest in the world. Perinatal and infant mortality are the lowest, and maternal mortality virtually non-existent. Icelanders can expect to be healthy for about 90% of their (long) lives. Recent indicators of the quality of care (for instance, survival rates for certain illnesses and in-hospital case-fatality rates) also show Iceland in a very favourable light. However, empirical estimates, which take into account a wide range of health determinants, suggest that, reflecting declining returns to scale, every further health gain may come at a very high price, while maintaining the present excellent health status should be possible at lower levels of resource use and expenditure. Indeed, although the geography and population distribution of the country probably justify an above-average share of health-care workers, staffing ratios seem excessive by international comparison.

… could be achieved at lower costs

There are a number of options for enhancing spending efficiency in the health-care sector. Impediments to private provision, which accounts for only one quarter of publicly financed health services, should be removed and the sector opened up to competition. But when services are sourced out to the private sector, the authorities need to have the necessary expertise and resources to design appropriate service contracts and monitor the outcomes. To avoid that increased patient choice overly stimulates demand for services, cost-sharing should be introduced where it does not exist and reformed where it does not provide sufficient incentives for cost-savings (for instance, pharmaceuticals). This would also relieve the pressure on public finances. In addition, or alternatively, consider a form of gate-keeping system in which patients are directed to the most appropriate level of care. Activity-based funding in hospitals, which account for a high share of health-care spending in Iceland, should be accelerated and carefully implemented. Within a robust regulatory framework, output-related prospective payment systems can encourage providers to minimise costs without hurting patient care if associated prices are set correctly and there is appropriate control of quality. The authorities do not always make use of the scope provided by a high degree of centralisation to increase efficiency. What is clearly needed is a prioritisation of public health-care spending based on cost-benefit analysis of different kinds of services. Also, the government has to make more use of its power as the main buyer of health services to reduce costs, by putting downward pressure on prices or shifting care to less expensive services. Reforms along these lines should go a long way towards eliminating the apparent efficiency gap of the Icelandic health-care system.

Other policy areas also need attention

Another area where there is scope for getting better value for money is education. Given that Iceland spends more per student than most other OECD countries, educational

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achievement in terms of PISA test scores is disappointing. Moreover, it has rather tended to deteriorate over time relative to an OECD benchmark. As argued in the previous *Survey, education policy needs to focus on teacher quality rather than quantity.*

In addition, there are some exceptions to the general trend of market liberalisation, in particular the agricultural and energy sectors. Agricultural support is the highest among OECD countries and an impediment to structural change. *To reduce the heavy burden on consumers and taxpayers, agricultural support should be lowered, focusing on the most distorting payments to farmers, and market protection should be reduced further.*

The state-owned National Power Company accounts for the bulk of the country's electricity production and the energy sector is subject to foreign ownership restrictions. *Divestiture of the National Power Company's generation activities would be desirable both to create a level playing field and reduce taxpayers' exposure to risks surrounding large-scale investment projects.* As noted, power-intensive investments have a significant impact on the environment and, even though they are using renewable energy, emissions from aluminium plants are not negligible. Hence, *it should be carefully considered whether Iceland should ask for additional exemptions for large projects if a continuation of the Kyoto Convention is agreed.*

ISBN 978-92-64-04298-8
OECD Economic Surveys: Iceland
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Chapter 1

Challenges facing the Icelandic economy

Economic activity slowed through the first quarter of 2007, reflecting tight macroeconomic policies and the maturing of major aluminium-related investment projects. However, it revived subsequently as expansionary policy measures in the run-up to the general election in May rekindled demand and inflation pressures at a time when tensions and imbalances in the economy remained substantial. The further tightening of the monetary stance in the autumn should cool down the economy gradually in the period ahead. But the economy remains vulnerable to changes in foreign investor sentiment, especially in the context of fragile global financial-market conditions. Consequently, the key challenge for policy in the near term is to restore macroeconomic stability by ensuring that steady progress is made in unwinding both internal and external imbalances. In addition, with a view to sustaining Iceland's favourable growth performance, steps need to be taken to strengthen the ability of both monetary and fiscal policy to moderate macroeconomic volatility and prevent the re-emergence of such imbalances. In a longer-term perspective, a key challenge for policymakers is health-care reform. Although the overall fiscal position is better than in many other OECD countries, health care (which is largely government-funded) is a major source of public spending pressures. Health outcomes are very good, but there appears to be room for enhancing cost-effectiveness.

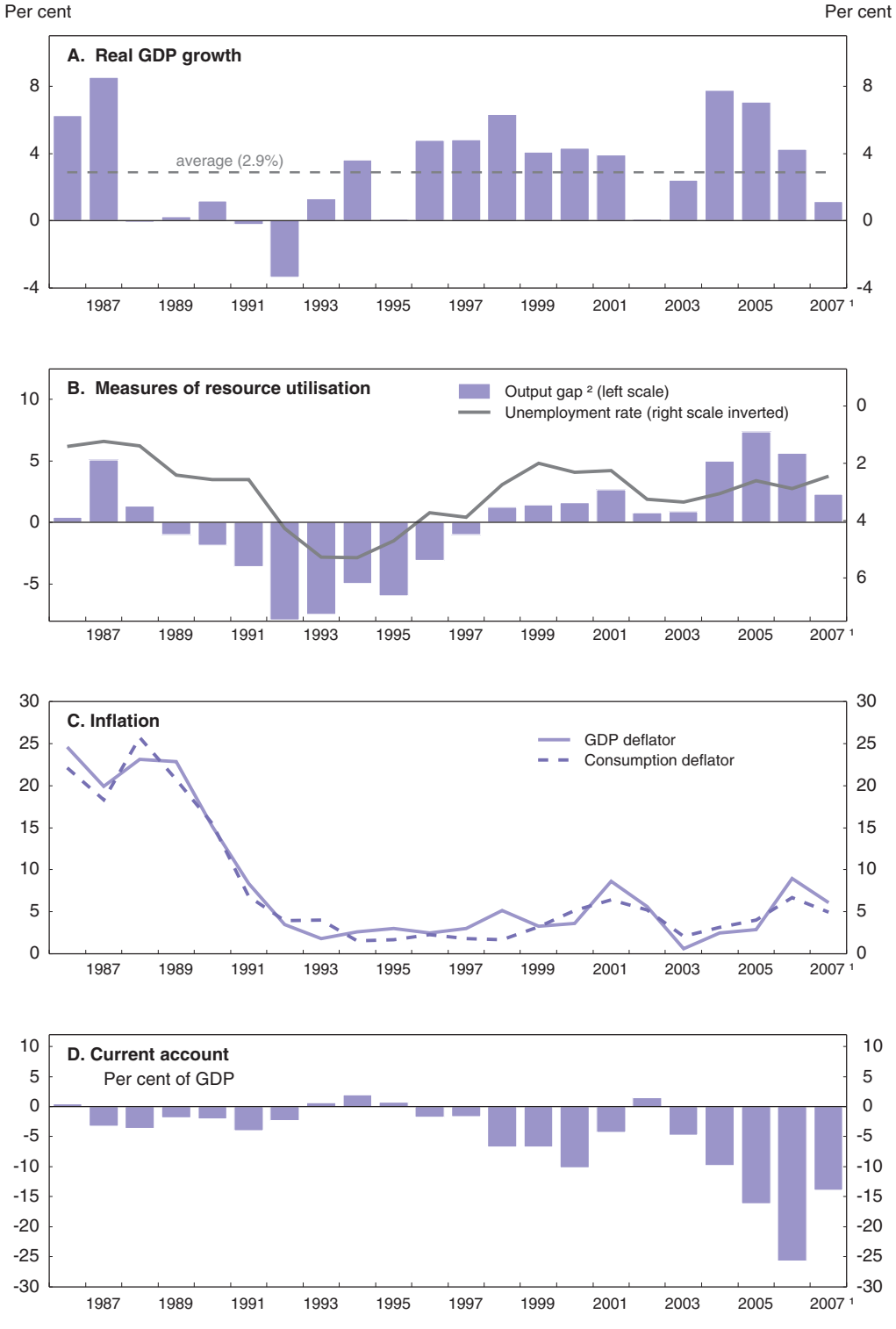
Longer-term economic performance

Extensive structural reforms that strengthened market forces, together with stabilisation policies that brought inflation under control and rebalanced the budget, laid the foundation for a period of robust growth from the mid-1990s (Figure 1.1). Membership of the European Economic Area opened up new markets to Icelandic companies, strong pension funds supplied capital needed for investments and the privatisation of the banking system provided new sources of financing. The increased dynamism of the economy has been most visible in the aggressive expansion of many Icelandic companies abroad. After strongly stepping up their foreign activities, the commercial banks also raised their profile in the domestic mortgage market by engaging in head-on competition with the state-run Housing Financing Fund from 2004, thereby greatly enhancing access to, and reducing costs of, credit for households. With strong household demand for both current consumption and housing adding to the substantial stimulus from large-scale investment in the aluminium and energy sectors, the expansion gained considerable momentum in the middle of the decade. Despite a slowdown thereafter, growth has averaged nearly 4% since the mid-1990s.

Improved growth performance has been accompanied, however, by mounting tensions and imbalances in the economy, with a mild recession in the early part of the decade providing only a temporary reprieve. Activity has increasingly outstripped potential output despite strong growth of the latter, entailing substantial pressures in goods and labour markets, despite a sizeable inflow of foreign workers. As a result, inflation has exceeded the official target by a large margin in recent years and the external deficit has widened dramatically. At the same time, foreign and domestic indebtedness have soared. Iceland's total foreign debt is about five times its annual GDP. Although foreign assets have also grown strongly, its (negative) international investment position, at 122% of GDP at the end of 2006, is the weakest among OECD countries (Figure 1.2). As foreign liabilities have risen fast, net interest and dividend payments abroad have soared and weigh heavily on the current account, a recent turnaround notwithstanding. With the government retiring a substantial amount of its foreign debt over the past decade, total foreign debt is now largely private, reflecting low savings since the financial-market liberalisation of the mid-1990s. The increase in corporate debt has been particularly steep, with a significant amount lying with companies that have been expanding their operations overseas. Household debt has grown more gradually. While it is high by international comparison, the asset position of households has also strengthened and, if pension fund assets are included, so has their net worth. Still, even an only partial reversal of the sharp rise in asset prices in recent years would have a marked adverse effect on the equity of indebted households. As for corporations, the main concern is the impact of their large indebtedness on their resilience to economic shocks.

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Figure 1.1. **Aggregate economic indicators**

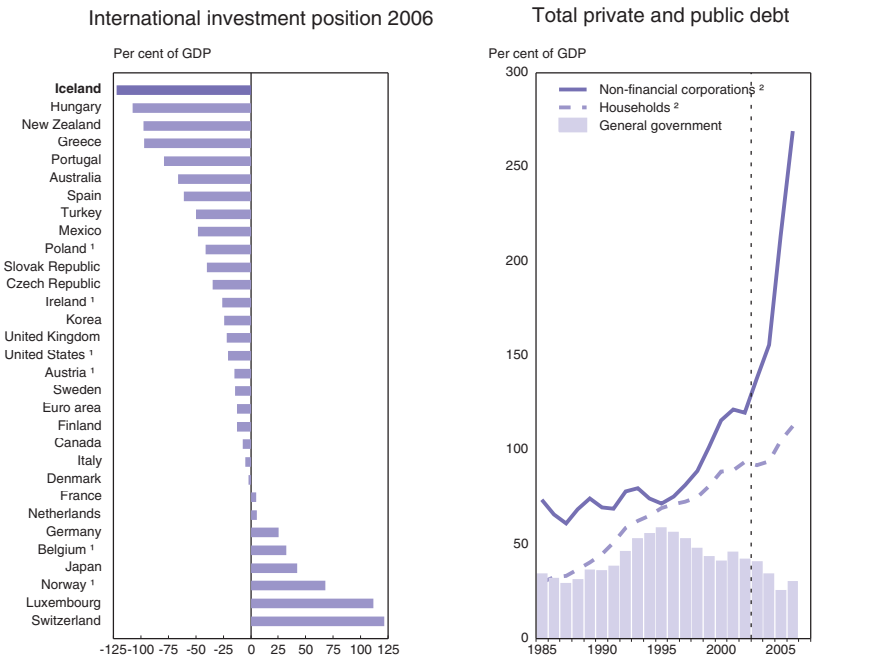


StatLink http://dx.doi.org/10.1787/276206462773

1. Estimate.
2. Percentage difference between output and estimated potential output.

Source: OECD Economic Outlook 82 database.

Figure 1.2. **Indebtedness**



StatLink http://dx.doi.org/10.1787/276225474202

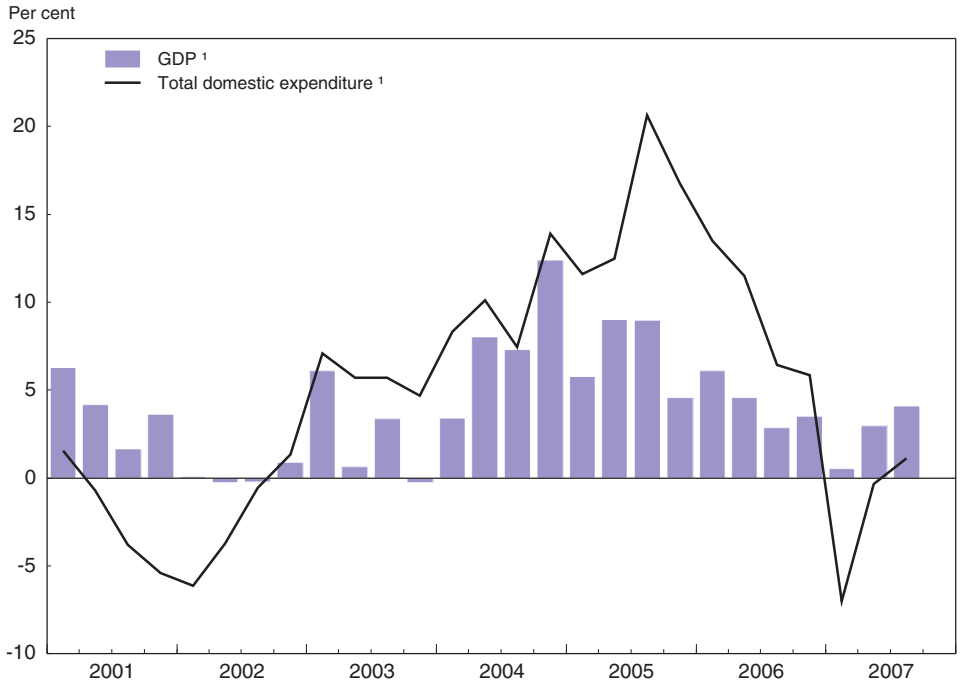
1. Figures are for 2005.
2. Classification of lending from 2003.

Source: Central Bank of Iceland and *OECD Economic Outlook 82 database*.

The economic situation

After expanding at torrid rates in the middle of the decade on the back of soaring domestic demand, economic activity slowed and growth came virtually to halt in the year to the first quarter of 2007 (Figure 1.3). Domestic demand even contracted over that period, as work on the large-scale investment projects that were launched in 2003 peaked and monetary policy tightening started to weigh down on household spending. Lagged effects of the turmoil in financial markets in 2006 apparently also played a role. Private consumption, in particular, which has been traditionally very volatile by international comparison, decelerated sharply, and much more so than households' real disposable income (Box 1.1). Subsequently, however, consumer spending rebounded as financial conditions improved and wage developments along with direct and indirect tax cuts (in January and March, respectively) boosted real disposable income. Moreover, the exchange rate strengthened during that period, underpinning household purchasing power abroad (the bulk of consumer durables is imported). Finally, households' financial position improved due to rising equity prices and a re-acceleration of property prices. The latter was associated with strengthening housing market activity as the Housing Financing Fund eased its credit terms and private banks followed suit in an environment of diminishing liquidity constraints. Household demand remained robust during the summer, although leading indicators suggest some softening following the financial-market turmoil in August. This had adversely affected the exchange rate and entailed higher borrowing costs. Even so, the renewed surge in household spending rekindled activity and delayed the closing of the sizeable positive output gap.

Figure 1.3. **Growth has resumed**



StatLink http://dx.doi.org/10.1787/276248042188

1. Year-on-year increase at constant prices.

Source: Statistics Iceland.

Box 1.1. **What drives private consumption?**

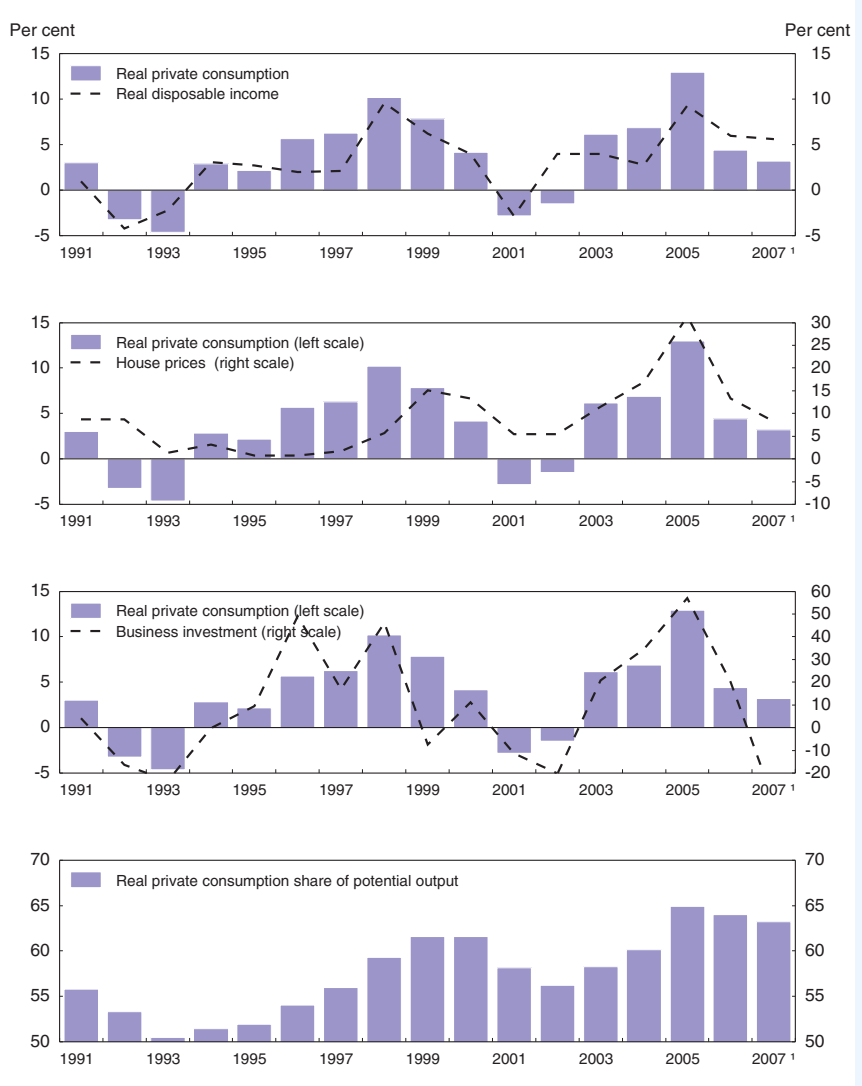
As shown in the previous *Economic Survey,* an outstanding feature of the Icelandic economy is the volatility of private consumption, which is unusually high, even if account is taken of the fact that economic fluctuations tend to be the more pronounced the smaller and more open the economy. Moreover, over time, the instability of internal demand has become relatively more important as a source of overall output volatility and economic imbalances.

As generally elsewhere, the major determinant of private consumption growth in Iceland is the development of households' real disposable income (Figure 1.4). However, in the short run, divergences can be enormous. For instance, in 2003-2005, the growth in private consumption was more than double that of disposable income. This is a significantly higher differential than during the cyclical upturn in the late 1990s. One explanation for this is the development of household wealth. While the latter had little impact on the pace of consumption in the previous decade, the recent surge and subsequent moderation in consumer spending has been closely associated with the movement of house prices. The unprecedented increase in asset prices (the stock market also boomed) enabled households to increase their consumption by collateralising expected future income to a greater extent than before. At the same time, as noted, the privatisation of the banks and developments in the mortgage market facilitated households' access to credit. Moreover, the strengthening exchange rate had a positive impact on consumption both by increasing real disposable income and improving consumer confidence. Finally, there has been a close relationship between private consumption and major power-intensive investment projects that have dominated fixed capital formation over the last decade or so. Consumer spending picked up sharply when the latest projects were launched five years ago, perhaps in anticipation of future disposable income growth.

Box 1.1. **What drives private consumption?** *(cont.)*

Figure 1.4. **Determinants of private consumption**

Annual changes



StatLink http://dx.doi.org/10.1787/276266147465

1. Projection.

Source: Central Bank of Iceland and *OECD Economic Outlook 82 database*.

As a share of potential output, private consumption in Iceland is high by international comparison and has displayed an upward trend. This may be related to factors such as declining public debt, rising pension savings and Iceland's relatively young population. Even so, the current level of the consumption/output ratio suggests that further adjustments are needed to return consumer demand to a more sustainable level and thereby reduce macroeconomic disequilibria. Indeed, compared to previous adjustment episodes, the recent fall in the ratio has been very slow as cuts in income and consumption taxes (intended as a structural reform to enhance efficiency) have strengthened households' purchasing power and, along with renewed house price appreciation, have underpinned consumer confidence.

As a result, tensions and imbalances persist. Although a strong inflow of foreign workers has boosted the labour force, whose growth has averaged 4% since 2005, labour-market conditions have remained tight. The unemployment rate is around 2½ per cent, according to Survey data, and at a historical low of 1% in terms of registered unemployed. With a tight labour market putting upward pressure on wages and a re-acceleration of housing costs, inflation has edged up again, after easing due to the effects of a stronger exchange rate and reduced consumption taxes (Figure 1.5). Excluding the temporary impact of the VAT cuts, it has again exceeded 7½ per cent. This is not much lower than in mid-2006, when a temporary collapse of the exchange rate pushed up the price level and compares with the official target of 2½ per cent. At the same time, the unwinding of the huge current account deficit, which reached 26% of GDP in 2006, has slowed after a sharp decline in early 2007. It has been argued that official statistics overstate the size of the external deficit, but even after some adjustments it may still be too large to be sustainable (Box 1.2).

Figure 1.5. **Tensions and imbalances persist**



StatLink http://dx.doi.org/10.1787/276266707534

1. As a percentage of gross domestic product.
2. Annual increase in the consumer price index and constant tax-rate consumer price index.

Source: Statistics Iceland.

Box 1.2. **How big is the external deficit?**

Iceland's current account has been in deficit for all but a handful of years in the past half century. There have been several occasions when deficits exceeded 10% of GDP, but these were usually quickly corrected. Yet, deficits of the order recorded recently (more than a quarter of GDP in 2006) will be more difficult to reverse. The Central Bank has estimated that about one-third of that imbalance derived from investments in the power and aluminium sectors and one-fifth reflected re-invested earnings of foreign companies in

Box 1.2. **How big is the external deficit?** *(cont.)*

Iceland (which have grown enormously in recent years). Taking this into account still leaves an external deficit that is probably too high to be considered sustainable. Reliance on volatile short-term capital inflows to finance such deficits would be a source of economic fragility and instability. However, doubts have been raised about the reliability of the data underlying estimates for the current account deficit, and hence the validity of such an assessment.

The criticism has focused on the income account, which has swollen following the liberalisation of capital movements. With expenditures outstripping strongly growing receipts, the reported deficit on investment income accounted for roughly one-third of the total current account deficit in 2006 (Table 1.1). Some observers regard Iceland's investment income deficit as greatly overestimated. While admitting that there may be an underreporting of assets while liabilities may be more accurately reported, the Central Bank has argued that measuring the income balance differently would not affect the current account as drastically as sometimes imagined. For example, if changes in the portfolio value were included in the balance of income, the current account deficit for 2006 would have been significantly smaller than under the current methodology, but it would have been much larger in 2005 and in 2000-2003. Since positive and negative deviations have so far tended to be offsetting, it cannot be taken for granted that a change in methodology would give a more favourable picture of the external position. Taking full account of market value would, however, introduce much more volatility in the income account that would be unrelated to actual payment flows.

Even so, communication might be enhanced by regularly presenting estimates both using the conventional and the market value method. This is also true for foreign direct investment (FDI). A lack of reliable data has hitherto hindered Iceland, like most other countries, from recording it at market value. With the proportion of outward FDI that is entered at book values much bigger than that of inward FDI, it might well be that Iceland's negative international investment position is overstated, at least recently. Any official estimates in this respect would inform and focus the public debate.

Table 1.1. **Balance of payments**

2006

	ISK billion	% of GDP
Balance of goods	–156.5	–13.7
Balance of services	–49.7	–4.4
Income balance	–90.0	–7.9
Current account	–298.7	–26.2
Capital and financial account	421.0	36.9
of which:		
Direct investment net	–70.4	–6.2
Portfolio investment net	771.9	67.6

Source: Central Bank of Iceland.

Near-term prospects and risks

Recent information suggests that real GDP growth in 2007 could have significantly exceeded the estimate shown in Table 1.2, even if it dropped sharply in the final quarter of the year. Looking ahead, activity is projected to remain sluggish through 2009. This growth

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Table 1.2. **Short-term projections**
Percentage change, volumes

	2007	2008	2009
Private consumption	3.2	–1.1	–1.6
Government consumption	2.5	3.3	3.0
Gross fixed capital formation	–21.1	–13.9	–1.3
Final domestic demand	–3.9	–3.0	–0.4
Change in stockbuilding[1]	0.0	–0.6	0.0
Total domestic demand	–3.9	–2.6	–0.4
Exports of goods and services	8.2	9.9	6.9
Imports of goods and services	–8.7	–2.6	–0.4
Change in foreign balance[1]	7.0	4.4	2.0
GDP	**1.2**	**1.0**	**1.6**
GDP implicit price deflator	6.1	4.0	3.3
Consumer price index	4.9	4.4	2.8
Unemployment rate (per cent)	2.5	3.2	3.3
Current account balance[2]	–13.9	–11.1	–9.9
General government financial balance[2]	4.2	0.8	–1.3
Short-term interest rate	14.3	13.6	9.9
Long-term interest rate	9.7	9.0	7.8

1. As a percentage of GDP in the previous year.
2. As a percentage of GDP.
Source: OECD Economic Outlook 82.

path reflects countervailing forces. Household demand contracts in response to high interest rates, coupled with record high personal debt; business investment drops sharply as aluminium-related investment projects are completed; the adverse effect of lower fish catch quotas on exports is outweighed by the strong increase in aluminium-production capacity; and government investment is soaring (see below). With such factors depressing activity overall, the emergence of a negative output gap should help bring inflation down to the official target towards the end of the projection period while the current account deficit is projected to narrow gradually.

There are, however, considerable risks and uncertainties surrounding such a benign scenario of gradual re-equilibration of the economy and the adjustment process might well be more uneven than projected. In the context of a still tight labour market, it remains to be seen whether the major wage agreements (both in the private and public sectors) due in the first half of 2008 are compatible with the projected decline of inflation towards the official target. As well, renewed sharp downward pressure on the exchange rate (which is assumed to remain constant) cannot be excluded. The still high current account deficit leaves the economy highly dependent on developments in international financial markets and the willingness of foreign investors and creditors to fund it. This sensitivity towards external shocks has been manifested by the volatility of the exchange rate in recent years. In both cases, interest rates would need to be higher to counter the inflationary effects of such developments (the projections assume that the closing of the positive output gap allows interest-rate reductions from the second half of 2008). Moreover, the projections do not include the effects of possible new large-scale aluminium-related investment projects, which could delay disinflation and the unwinding of the external deficit. One project will likely begin in 2008 and additional ones are under consideration (Box 1.3). Even before construction starts, household expectations could be supported by such new projects drawing closer, as occurred five years ago. Although such investments would underpin the exchange rate in the short run, higher interest rates

Box 1.3. **New investment projects**

There are plans to build three new aluminium smelters in the next few years. The projects are of similar size and would again double Iceland's aluminium production capacity. The preparation for the Century Aluminum smelter at Helguvik in the southwest of the country is the most advanced and construction work could begin in 2008. New ideas concerning an expansion of the Alcan smelter in Straumsvik in the capital area or the construction of a new facility are under scrutiny in the wake of the narrow defeat of the expansion proposal in a local referendum. Preparatory work on a new Alcoa smelter near Husavik in the north of the country is underway; the project seems likely to go ahead, but not in the current decade. The National Power Company has recently announced that it would not supply energy to any new aluminium projects in the southwest of the country as it intends to diversify and reap higher margins on energy sales. This will not affect the Century project, which relies on geothermal power from other providers, or the Alcoa project in the north.

In October, the National Planning Agency published an opinion on the environmental impact assessment for the Helguvik smelter, stating that the proposed plant would not have any significant negative externalities. The Agency expressed some reservations concerning the environmental impact of related construction (such as energy procurement, transmission lines and harbour construction), but the publication of the generally positive opinion has considerably increased the likelihood that the project will go forward. The municipalities involved have yet to issue the required development and construction permits, however, and the proposed operations are dependent on the granting of greenhouse gas emission allocations. Energy procurement is guaranteed by contracts with municipal utilities in the area for the first stage of the project that would allow production to begin in mid-2010. The cost of both smelter construction and energy procurement during the first stage is estimated to be around two-thirds of the total cost of the project, which is about 10% of GDP.

than otherwise would probably be required to achieve the inflation target within an acceptable timeframe and maintain price stability thereafter.

The international liquidity crisis has increased uncertainty about economic prospects (Box 1.4). So far, Iceland's financial institutions have weathered the storm well. There has been no need for the Central Bank to take special action and commercial banks have continued to borrow heavily abroad. Still, higher risk aversion has led to a surge in credit default swap (CDS) levels for Icelandic banks, which have been only partly corrected, and a

Box 1.4. **Financial market developments**

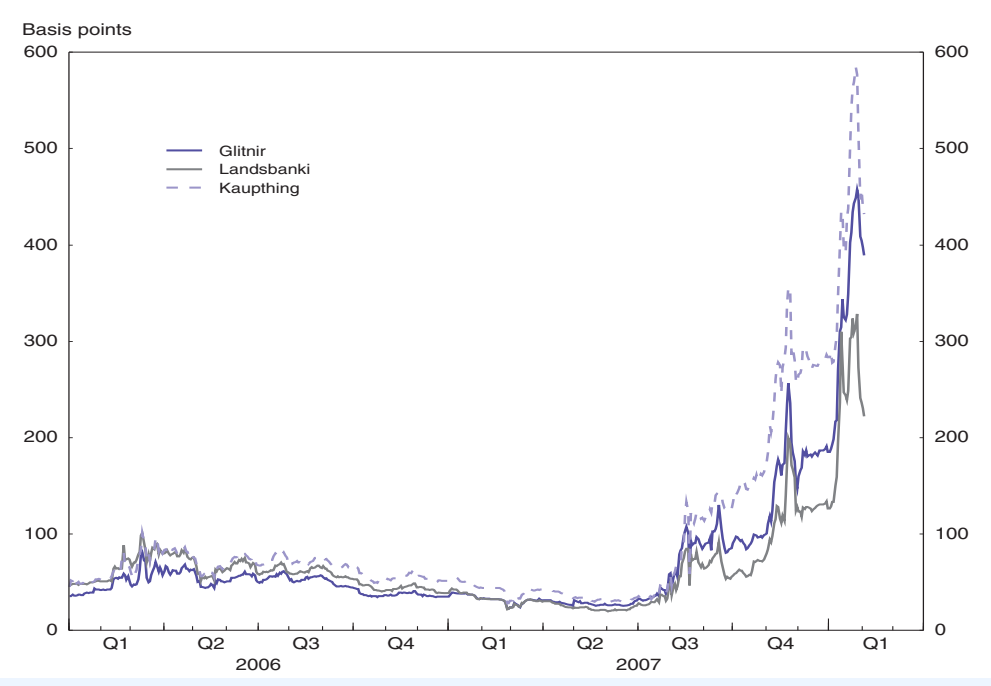
Icelandic financial markets were the subject of a special chapter of the previous *Survey*. The chapter noted the vitality of the financial system, reflecting to a significant extent financial liberalisation policies. The *Survey* also noted the guarded assessment of financial supervisors and rating agencies that the financial system was broadly sound. Over the past two decades the financial system has been transformed from being highly regulated by international standards to one where the authorities' role is largely supervisory. The financial sector is now a bigger part of the Icelandic economy than high-profile industries such as fishing, electricity and aluminium. The expansion of financial institutions into foreign markets has been particularly dynamic so that the three major banks are now huge relative to the size of Iceland's financial markets and the economy.

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Box 1.4. **Financial market developments** *(cont.)*

The fast growth of the Icelandic banks has been accompanied by growing pains. In 2006, large and growing imbalances in the Icelandic economy raised concerns about the viability of the banks and the stability of the Icelandic financial system. Many observers became worried about high levels of debt and potential exposure of financial institutions to asset prices. Despite a sharp fall in the exchange rate and share prices and a rise in the Credit Default Swap (CDS) spreads of the major Icelandic banks in the first half of 2006, the banks have continued to perform well and the financial system has remained stable. Several observers have concluded that the funding problems of the banks at that time reflected a lack of transparency concerning their business model and activities, as the concerns about *market risk* were shown to be exaggerated. The confidence returned and refunding problems of financial institutions were resolved as investor concerns were addressed. The international financial turmoil since August 2007, triggered by problems in the US subprime mortgage market, has been accompanied by widespread information problems creating uncertainty about the pricing of risk in financial intermediation. This situation has prompted renewed concerns about financial stability, reflected in increased asset price volatility also in the Icelandic financial market. More recently the CDS spreads have surged once again and are now considerably larger than those of foreign banks with similar credit ratings (Figure 1.6). This has been linked to the collapse of a small Icelandic investment fund raising concerns about a wider systemic fragility. While these may be misplaced, the continuing rapid growth of the banks has remained a source of concern, which is consistent with CDS spreads declining somewhat (but remaining elevated) for all major banks after the recent decision by the largest bank (Kaupthing) to abandon plans to acquire a foreign bank (NBIC).

Figure 1.6. **Credit Default Swap (CDS) spreads for major banks**[1]



StatLink http://dx.doi.org/10.1787/276287837767

1. Senior five-year Credit Default Swap.

Source: Thomson Datastream.

Box 1.4. **Financial market developments** *(cont.)*

Despite investor concerns, most criteria suggest that the Icelandic banks are sound, as reflected in their consistently good ratings: The main banks run a surplus of foreign-currency assets over liabilities and their fourth-quarter results showed healthy net interest income, while their capital ratios look solid. All of them have recently passed a comprehensive stress test of the Icelandic Supervisory Authority. The test implies that a financial institution must be in a position to take on considerable simultaneous setbacks in the value of shares, market bonds, non-performing loans and appropriated assets, and the exchange rate without having its capital adequacy ratio drop below 8%. Recently, Moodys has placed the ratings for Icelandic banks on review, while pointing to their growing reliance on foreign deposits as a possible source of fragility. At the same time, Moodys confirmed the (Aaa) sovereign rating of the Icelandic government finding it to have ample access to foreign exchange denominated liquidity to handle any *contingent liabilities* associated with a "low probability worst case scenario". In summary, while most observers consider the Icelandic banks fundamentally healthy and to follow sound business models, uncertainty remains about the future development due to the ongoing adverse conditions on international financial markets.

slide in the stock market. This diminishes companies' growth potential, especially their plans for expansion abroad. Households face higher financing costs and tighter access to credit as well as lower levels of wealth. So far, these effects have been limited, but markets are likely to remain volatile. Thus, more pronounced business and household retrenchment than projected cannot be excluded, especially if falling house prices added to the negative wealth effect of lower share prices.

Immediate policy requirements

Inflation has exceeded the official target of 2½ per cent since mid-2004. From that time, the Central Bank gradually raised its policy rate until late 2006 (by almost 8 percentage points). This had little effect on long-term rates and real lending rates, which actually were lower at the end of 2006 than three years earlier (Table 1.3). This partly reflected a competitive battle between the publicly owned Housing Financing Fund and the private banks, which depressed interest rates and tended to loosen credit criteria. While this undermined the effectiveness of monetary policy, it can be argued that the Central Bank was at times too hesitant in raising interest rates. In real terms, the policy rate hardly exceeded its long-term average until 2006, as the rise in inflation kept pace with interest-rate hikes (Figure 1.7). Over most of 2007, monetary policy remained on hold before a

Table 1.3. **Interest rates**

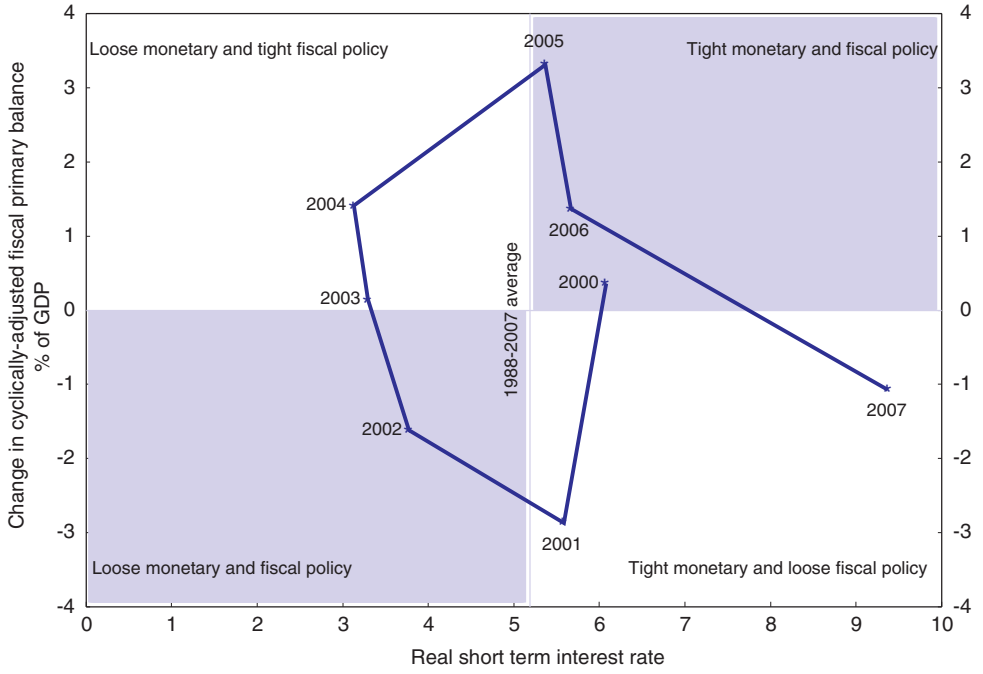
Per cent, year end

	2003	2004	2005	2006	2007
Policy interest rate	5.30	8.25	10.50	13.00	13.75
Three month money market yield	5.1	7.9	10.1	13.3	14.1
Long-term treasury bond yield	7.7	7.8	7.7	8.4	12.4
HFF bond real yield	4.0	3.5	4.3	5.1	6.4
Average bank lending rate	11.7	12.8	15.7	19.3	19.5
Average bank lending rate, indexed loans	8.7	7.5	6.7	7.7	9.9

Source: Central Bank of Iceland.

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Figure 1.7. **Monetary and fiscal stance**



StatLink http://dx.doi.org/10.1787/276318433332

Source: OECD Economic Outlook 82 database.

renewed tightening late in the year. This reflected initial estimates that overstated the slowdown in activity as well as uncertainties related to substantial cuts in fishing quotas and the effect of financial-market developments. Yet there were signs of a rebound in household demand and inflation from mid-year. On the other hand, international developments contributed to a marked increase in long-term interest rates and real lending rates more in late 2007 that exceeded the rise in the policy rate. Nonetheless, with long-term rates easing more recently, further hikes in the policy rate may be necessary. Certainly, it is unfortunate that housing policy counteracts the stabilisation efforts of monetary policy and, as recommended in previous *Surveys*, reforming the Housing Financing Fund should be a priority since its operations require a higher policy rate than otherwise. But, in any case, interest rates will have to remain high until inflation expectations have been firmly anchored at the inflation target.

Fiscal policy tightened appropriately during the economic upswing, moving towards restraint even earlier than monetary policy (Figure 1.7). The recent easing in the fiscal stance, however, occurs at a time when monetary policy is still going in the other direction and record high interest rates are necessary to curb inflation. More than half of the projected narrowing in the general government budget surplus in 2007 (from above 6% to above 4% of GDP) can be traced to discretionary measures, in particular cuts in income and consumption taxes. The 2008 budget proposal implies a further decline in the general government budget surplus (to around 1% of GDP), as expenditure is planned to be raised by 8% in real terms. This reflects a rise in public investment by as much as one-quarter, with central government investment virtually doubling. As a share of GDP, public

investment is projected to rise by 1 percentage point, with very cautious assumptions regarding local government outlays (Table 1.4). This would bring the public investment ratio to 4½ per cent, above the long-term average of just below 4%. This compares with a long-term average of 2½ per cent in the euro-area; usually only emerging economies have such high public investment ratios. The planned sharp expansion in government investment risks reducing the cost-efficiency of these investments and would most likely exceed the absorptive capacity of the economy (although part of it is for building a coast guard vessel abroad). Instead, as argued in Chapter 3, projects should be carefully planned and evaluated, and not rushed through. To the extent that higher expenditure is aimed at counteracting the effects of cuts in catch quotas on fishing communities, additional investment in human capital (such as retraining) would seem to be a more appropriate response.

Table 1.4. **Public investment**
% of GDP

	Local government	Central government	Total
2004	2.1	1.8	3.9
2005	1.8	1.3	3.1
2006	2.6	1.4	4.0
2007	1.6	2.0	3.6
2008	0.9	3.7	4.5
Average 1996-2006	2.1	1.9	3.9

Source: Ministry of Finance.

Longer-term challenges

While rebalancing the economy is the priority in the near term, there are a number of policy issues that need to be addressed to sustain good economic performance in the longer run. There is scope for adjusting the monetary and fiscal policy frameworks with a view to moderating macroeconomic volatility and preventing the re-emergence of major imbalances. There is room for enhancing cost-effectiveness in the health-care sector, which is a major source of public spending pressures. And there are other areas where little progress has been made in structural reform (Annex 1.A1).

Refining the monetary policy framework

The implementation of monetary policy has greatly improved recently (Chapter 2). In particular, the Central Bank now publishes an interest-rate path that it considers optimal for bringing inflation to the official target within an acceptable timeframe, thereby providing an anchor for inflation expectations. Nonetheless, further refinements to the inflation-targeting framework should not be discarded. They could concern, for instance, the target variable, so as to avoid unnecessary employment and output fluctuations. The fact that the housing component of the targeted price index reflects mortgage rates has the undesirable effect that monetary tightening raises the targeted index. Adopting a rental equivalence approach for owner-occupied housing is difficult because the rental market in Iceland is very small. Still, the issue should be addressed, ideally in the context of related work at the European level. Changing the targeted index would obviously require a reconsideration of the targeted level of inflation, but this new target should not be adopted until inflation is under control. However, once inflation expectations have been

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permanently reduced and reforms to the Housing Financing Fund's operations have re-enforced the interest-rate channel, modifications of the inflation-targeting framework could be considered.

Strengthening the fiscal policy framework

Government finances have been in substantial surplus in recent years and public indebtedness is low by international comparison. Together with fully-funded occupational and public-employee pension funds, this means that Iceland is relatively well prepared for longer-term spending pressures stemming from population ageing. This does not mean that there are no fiscal risks. Besides the debt on the books of government entities, the state guarantees the debts of certain enterprises and institutions. The largest part of this represents government backing of residential mortgages through the Housing Financing Fund. The other important state guarantee concerns the debt of the National Power Company. Compared to the figure shown in Table 1.5, this debt guarantee has broadly doubled with the recent takeover of the local authorities' stakes by the state. It may now account for about one-fifth of total Treasury debt guarantees, which are likely to have risen to 70% of GDP. This, together with a high level of estimated contingent liabilities from the financial sector, explains somewhat less favourable assessments by credit agencies despite the low level of public debt in a narrower sense.

Table 1.5. **Treasury guarantees**
End of 2006

	EUR million	% of total
Housing Financing Fund	6 158	81
Regional Development Institute	117	2
National Power Company	881	12
Landsbanki	211	3
Other	234	3
Total Treasury guarantees		63
Per cent of GDP		
Treasury gross debt		
Per cent of GDP		24

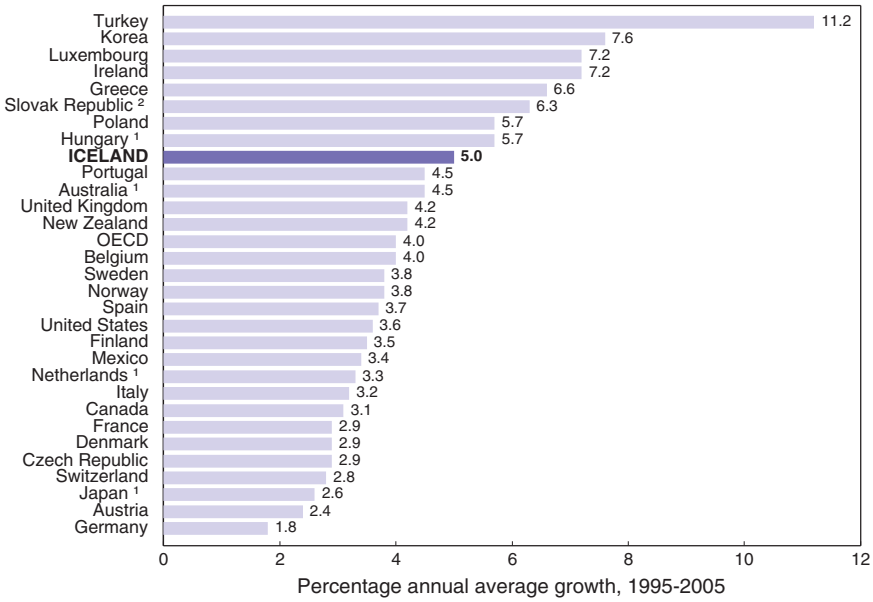
Source: Treasury Accounts.

Fiscal risks notwithstanding, the long-term sustainability of public finances would not seem to be a cause of major concern. However, there are two – interrelated – issues that need to be addressed. What can be done to arrest a tendency toward expenditure drift and to enhance the stabilisation role of fiscal policy in a country with unusual macroeconomic volatility? Although this might seem ambitious by Icelandic standards, moving towards a fiscal framework with binding nominal medium-term expenditure targets for each ministry would increase spending discipline, improve the countercyclical impulse from fiscal policy and be more consistent with the inflation-targeting framework (Chapter 3). While automatic stabilisers on the revenue side should be allowed to run their course, experience (both in Iceland and abroad) has shown that public investment is an ill-suited instrument for demand management. Such fiscal rules would need to be extended to local governments, which account for a large share of public expenditures (especially investment) and hence have the potential to offset developments at the central level.

Reforming health care

Health care, which is largely government funded, is a major source of public spending pressures. The increase in real health expenditure *per capita* averaged 5% in 1995-2005, which is 1 percentage point more than in the OECD and almost double the growth of per capita GDP in Iceland (Figure 1.8). Although long-term projections are surrounded by considerable uncertainties, they indicate that, as a result of population ageing and medical cost pressures, public health-care spending could reach 15% of GDP by 2050 if no restraining measures are taken. This highlights the importance of raising cost-effectiveness and spending efficiency more generally (Chapter 4). To be sure, care has to be taken to maintain the high quality of health services. But there are estimates suggesting that the excellent health outcomes in Iceland could be achieved at lower cost. A number of measures could be helpful in this regard. They include: opening up the sector to competition and increasing (relatively limited) private provision; introducing cost-sharing where it does not exist, both to avoid overconsumption and as a source of public revenue; more reliance on cost-efficiency and activity-based funding arrangements; and reducing the high cost of pharmaceuticals by re-enforcing competition and the use of inexpensive generic drugs.

Figure 1.8. **Real health expenditure per capita**



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1. 1995-2004.
2. 1997-2005.

Source: OECD Health Data 2007.

Other structural policy areas needing attention

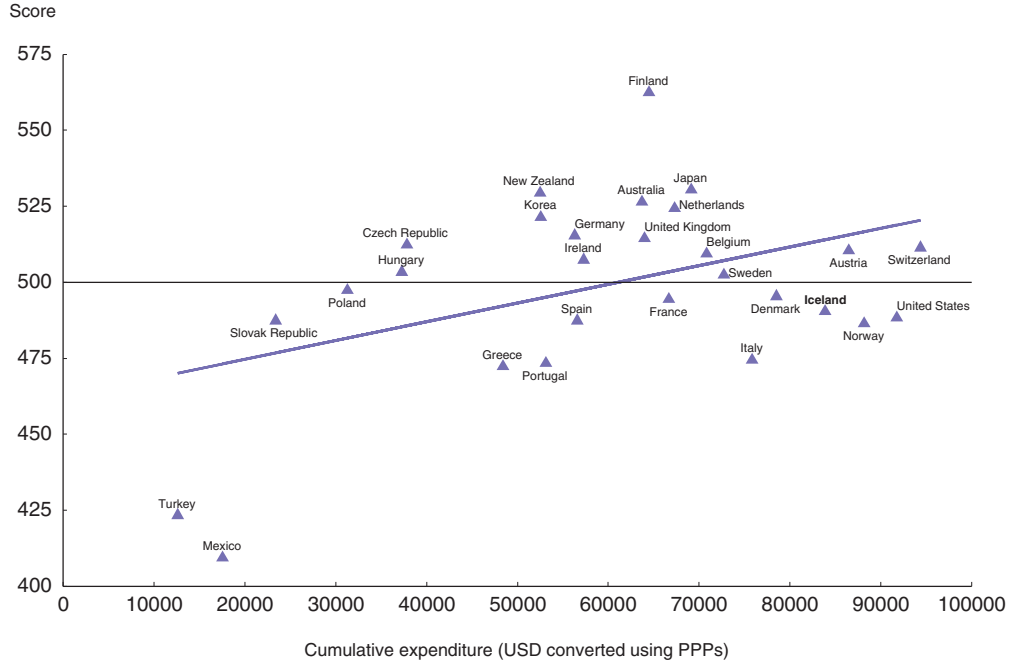
The major outstanding reform in the *financial sector* concerns housing finance. The publicly owned Housing Financing fund (HFF) has advantages over other housing lenders

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that prevent fair competition, distort the allocation of resources and impede innovation. As mentioned above, the Fund's operations also reduce the effectiveness of monetary policy. Given its government guarantee, it can fund its mortgage lending at lower interest rates than the commercial banks. The latter nevertheless match HFF rates to maintain their share of the mortgage market, even if this means that they are lending at rates below their cost of funds. Previous *Surveys* have argued that, to level the playing field, government backing for HFF bonds should be terminated or the HFF be charged a fee to cover the cost of the government guarantee. The social objectives of the Fund could be addressed more transparently and cost-effectively through targeted transfers.

Recent PISA test scores highlight the importance of additional *education* reforms. Given that Iceland spends more per student than most other OECD countries, educational achievement at the end of compulsory education is disappointing (Figure 1.9). Moreover, it has generally deteriorated since 2000 relative to an OECD benchmark. Only on the mathematics scale is it still slightly above the OECD average. The deterioration has been most pronounced on the reading scale, where Iceland has moved from a little above to significantly below the OECD benchmark. The relative decline in reading performance was particularly pronounced for males, although females have also lost ground. The previous *Survey* has argued that education policy needs to focus on teacher quality rather than quantity. Indeed, since responsibility for compulsory education was transferred to the municipalities in the mid-1990s, the number of teachers – and hence spending per student – has increased strongly without leading to better educational achievements. The government has just introduced legislation that would tighten qualification requirements

Figure 1.9. **Student performance on the science scale[1] and spending per student[2]**



StatLink http://dx.doi.org/10.1787/276324267232

1. Average OECD score is 500.
2. Cumulative expenditure on educational institutions per student between the ages of 6 and 15 years.

Source: OECD PISA 2006 database.

for teachers. But this will take time to be implemented while changes in the economic structure are increasing the demand for a skilled workforce.

There is also unfinished business in the area of *public sector* reform, such as the introduction of output-based budgeting, performance measurement and management reforms. Output-based budgeting is used in the funding of secondary schools, universities and nursing homes, and there are plans to extend it to hospitals (see Chapter 4). However, the authorities have been hesitant in introducing it more widely. It is thought to provide incentives for higher spending, to be difficult to model accurately and too often, lack necessary auditing. While this is sometimes true (an example being higher education), the National Audit Office feels that these problems should be fairly easy to overcome. In any case, output-based budgeting at least provides more transparency on how agencies and programmes are funded.

Agricultural support is an impediment to structural change and represents a heavy burden on consumers and taxpayers. Total on-budget transfers to farmers amount to about 1% of GDP, almost as much as the percentage contribution of agriculture to GDP. After declining in the 1990s, producer support has changed little and was the highest in the OECD by 2006 (Table 1.6). Prices received by farmers are about 2½ times higher than those in the world market. The share of the most distorting payments (based on output or input use) is still nearly 80%. It is the major form of support for dairy producers, but will gradually decrease in this sector until 2012 under an agreement between the government and the farmers' association. Further efforts are required to reduce market protection, although import tariffs on meat products have been lowered recently along with the abolition of excise taxes on most imported food.

Table 1.6. **Agriculture: Producer support estimate**[1]

As a per cent of gross farm receipts

	2004	2005	2006
Australia	4	4	6
Canada	21	22	23
European Union	36	33	32
Iceland	**65**	**67**	**66**
Japan	56	55	53
Korea	63	63	63
Mexico	11	14	17
New Zealand	1	1	1
Norway	67	66	65
Switzerland	68	67	63
Turkey	26	27	20
United States	16	16	11
OECD	30	29	27

1. The monetary value of transfers from consumers and budgetary payments to producers.
Source: Agricultural Policies in OECD Countries: Monitoring and Evaluation, 2007.

Another exception to the trend towards market liberalisation is the *energy* sector, which is still predominantly publicly owned. As a member of the European Economic Area, Iceland has implemented some deregulation under an EU directive relating to the separation of transmission, generation, distribution and sale of electricity. The legislation does not call, however, for incorporation of power companies or any changes regarding the

state or municipal guarantees they currently enjoy. Of the main producers, the National Power Company (Landsvirkjun) is now fully state-owned after acquiring the stakes held by municipalities, and Orkuveita Reykjavikur is owned by the city of Reykjavik and other municipalities. By 2006, the National Power Company already accounted for more than 80% of Iceland's total electricity production, and this share will increase further when the Karahnjukar power plant, which supplies energy to the new Alcoa aluminium plant, reaches full capacity. Any plans to eventually start privatising the energy sector suffered a setback when a joint venture between Orkuveita Reykjavikur and a private company met strong resistance and collapsed. Still, divestiture of the National Power Company's electricity generation activities would be desirable both to create a level playing field and reduce taxpayers' exposure to the risks surrounding large-scale investment projects. The National Power Company's recent announcement that it would not supply energy to any new aluminium projects in the southwest of Iceland and instead diversify to reap higher margins on energy sales in other sectors may support some doubts about the profitability of power projects. A lack of transparency makes it impossible to evaluate whether public utilities earn appropriate returns for the use of natural resources, the environmental costs and the risks they are taking on.

There are important *environmental issues*, even though, by international comparison, Iceland is relatively unpolluted due to sparse population and high reliance on renewable energy resources. Developing the country's huge exploitable electric power potential requires the building of dams and reservoirs that affect nature and the landscape. Hence, power-intensive investment projects have faced growing criticism for their impact on the environment. While they are using renewable energy sources, emissions of aluminium plants are not negligible. The emission limit for greenhouse gases in Iceland according to the Kyoto Protocol for the period 2008-2012 allows a 10% increase from the 1990 level. In addition, emissions from single large projects can be reported separately and are not included in the above limit, provided they use renewable energy and adhere to certain criteria. As a result, Iceland is likely to remain within its Kyoto limits, although emissions of greenhouse gases have already grown by more than 10% since 1990s. Much will depend, however, on the speed with which new investment projects are undertaken. There have been conflicting signals whether the government would have to, or would want to, ask for additional exemptions if a continuation of the Kyoto Convention is agreed. In any case, as emphasised in previous *Surveys*, future expansions of energy-intensive industries should not go ahead without being evaluated on the basis of a broad, transparent cost-benefit framework that takes into consideration their environmental impact.

ANNEX 1.A1

Progress in structural reform

This annex reviews actions taken to follow policy recommendations made in the 2006 *OECD Economic Survey of Iceland* and, where indicated, still outstanding from earlier *Surveys*. Recommendations that are new in the Survey are shown in the boxes at the end of each relevant chapter.

Recommendations in previous Survey	Actions taken and current assessment
A. Financial markets	
Charge the Housing Financing Fund (HFF) a fee reflecting the cost of the government guarantee, explore the possibility of the HFF wholesaling mortgages or restructure it as a limited liability company, subject to tax, with a view to future privatisation.	Reforms have been considered, including limiting the HFF's role to that of a wholesaler, but there has been no progress in implementing them.
B. Educational and training	
Focus on teacher quality rather than quantity and increase class size to reduce cost pressures. Increase the focus of teaching on sciences and languages. Encourage potential drop-outs to select vocational programmes.	Legislation has been introduced recently that tightens teacher qualification requirements, obliges the state to educate everybody up to the age of 18, and promotes vocational training.
Boost fees for public tertiary education to reduce completion times and budget pressures.	No action.
C. Public sector management	
Strengthen the "frame budgeting" process and tighten budget execution, limiting the use of supplementary budgets. Consider the introduction of multi-year budget plans with spending limits made binding in nominal terms.	The government has announced that it will adopt official budget frames for a four-year period, with details of the new approach to be presented to Parliament in its spring session.
Make the co-operation between central and local levels of government effective through binding annual agreements.	Negotiations are underway between the central government and the municipalities with a view to introducing fiscal rules for local governments.
Accelerate the introduction of outcome-based budgeting, performance measurement and management reforms in the public sector.	Progress in these respects has remained slow.
D. Taxation	
Match income tax cuts with spending restraint and increase user fees, in particular in the education and health-care sectors.	Not only income but also consumption taxes have been reduced, without a spending offset.
E. Product market competition	
Consider whether divestiture of the National Power Company's generation activities would help create a level playing field in power generation by avoiding cost-of-capital differentials between the incumbent and entrants.	No action.

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Recommendations in previous Survey	Actions taken and current assessment
Reduce agricultural support, especially in the area of policies that provide incentives to increase production. Eliminate administered prices for dairy products.	Excise taxes on food have been abolished and import tariffs for imported meat have been cut.
Reduce the remaining ownership restrictions, notably in the energy and fisheries sectors.	No action.
F. Environment	
Make explicit use of cost-benefit analysis to improve policy effectiveness and coherence; especially in deciding on the merits of major power-intensive investments.	The government has announced a partial moratorium for new investment projects, but a comprehensive framework for their evaluation is still lacking.

ISBN 978-92-64-04298-8
OECD Economic Surveys: Iceland
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Chapter 2

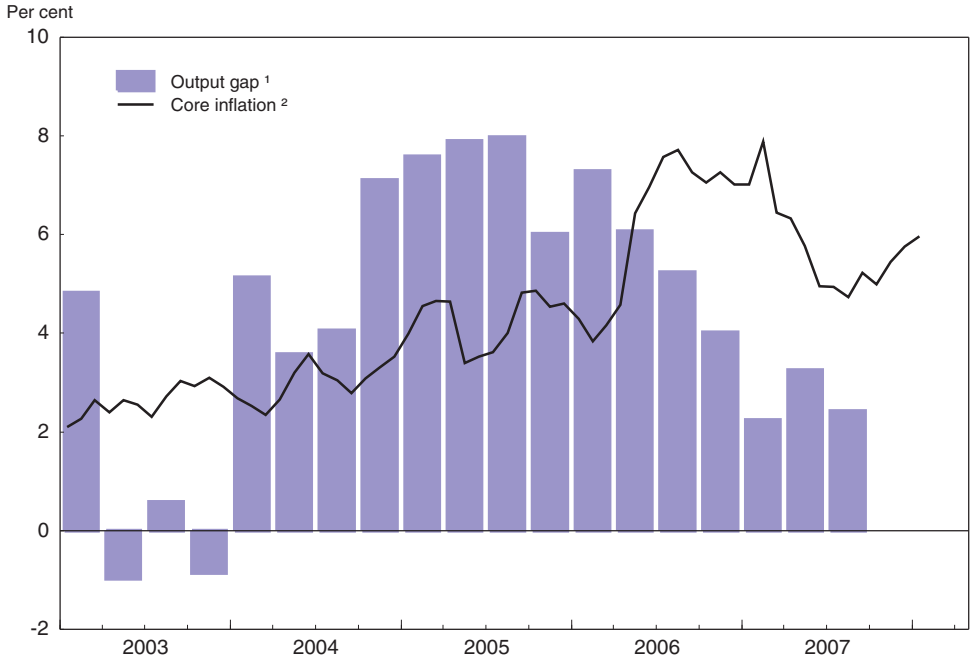
Towards a more effective monetary policy

In response to renewed inflationary pressures, monetary policy needs to remain tight until inflation expectations have moved back to and are well anchored at the policy target. While excessive inflation has persisted despite large increases in the policy rate, monetary policy has the capacity to stabilise the economy. The Central Bank's communication strategy has greatly improved but arguably policymakers have continued to react too slowly to new information and to be overly optimistic about the inflation outlook. As well, reforms in the financial sector, above all the long-awaited restructuring of the Housing Financing Fund, and refinements to the inflation targeting framework would strengthen the transmission mechanism of monetary policy. In view of these considerations, unilaterally adopting the euro and thereby sacrificing a potentially effective stabilisation tool would not seem warranted currently.

Implementation and communication of monetary policy

The previous *Survey*, published in August 2006, was rather critical of the implementation of monetary policy. It argued that the policy reaction to excessive inflation rates had been insufficient and called on the Central Bank to tighten policy further. Since then (or, in fact, somewhat earlier) the conduct of monetary policy appears to have improved. In response to an overheated economy and rates of inflation well above the 2½ per cent target (Figure 2.1), the Central Bank increased policy rate from 10.9% in May 2006 to 13.3% in December 2006. As shown in Figure 2.2, the real interest rate has roughly doubled according to most measures, rising on average by 5 points since mid-2006. Late in 2007, however, earlier shortcomings appear to have resurfaced.

Figure 2.1. **An overheated economy**



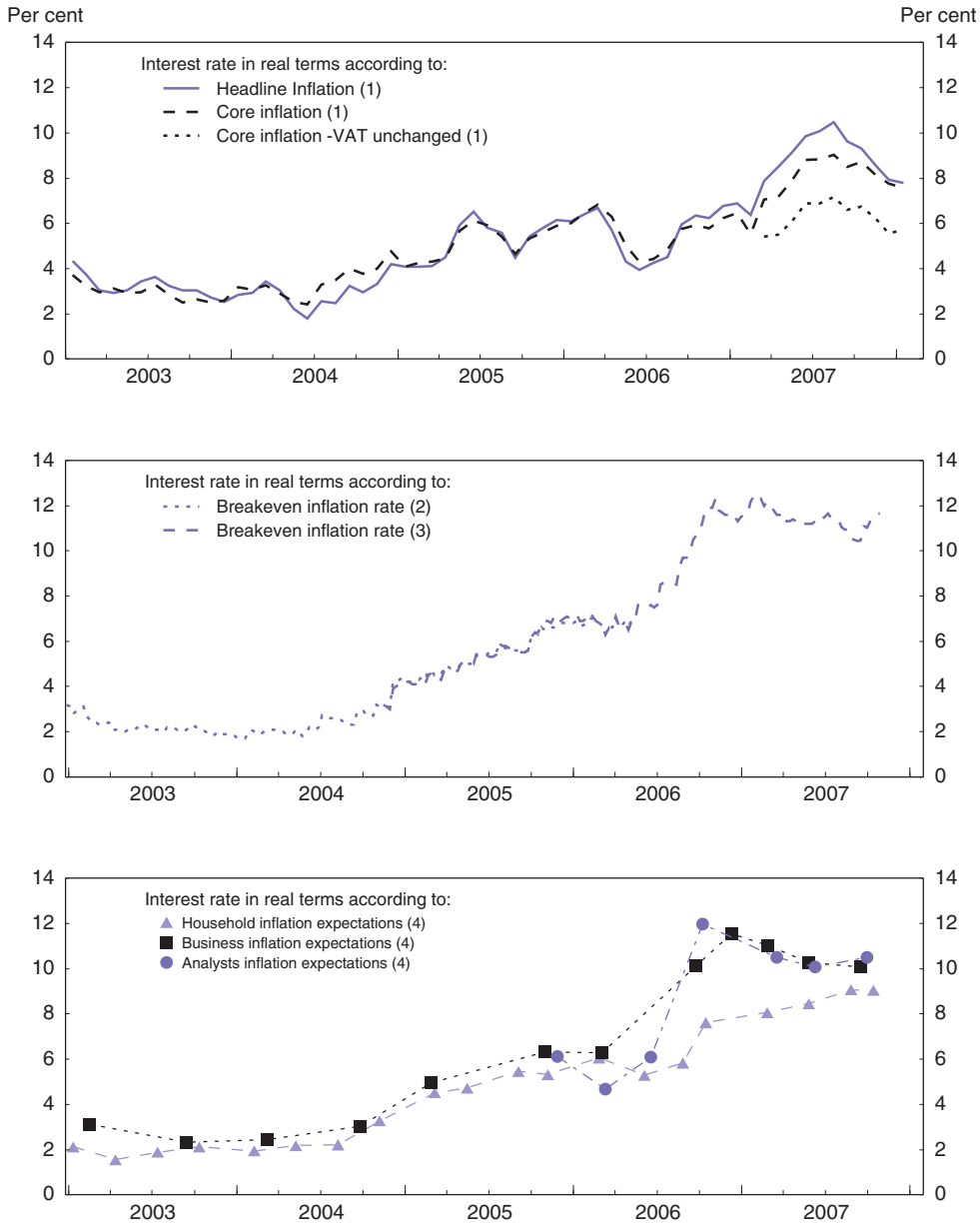
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1. Output gap defined as the percentage difference between actual and potential gross domestic product.
2. Year-on-year increase in core consumer prices (CPI less agricultural products, vegetables, fruits and petrol).

Source: Statistics Iceland, *OECD Economic Outlook 82 database*.

As shown in Figure 2.3, the price acceleration registered at the end of summer was more than "a temporary deviation along the disinflationary path outlined in the Bank's July forecast" (Central Bank of Iceland, 2007a). One can argue that the policy stance should have been tightened earlier and more aggressively. It would have been a move well-justified by

Figure 2.2. **Central bank policy interest rate in real terms**



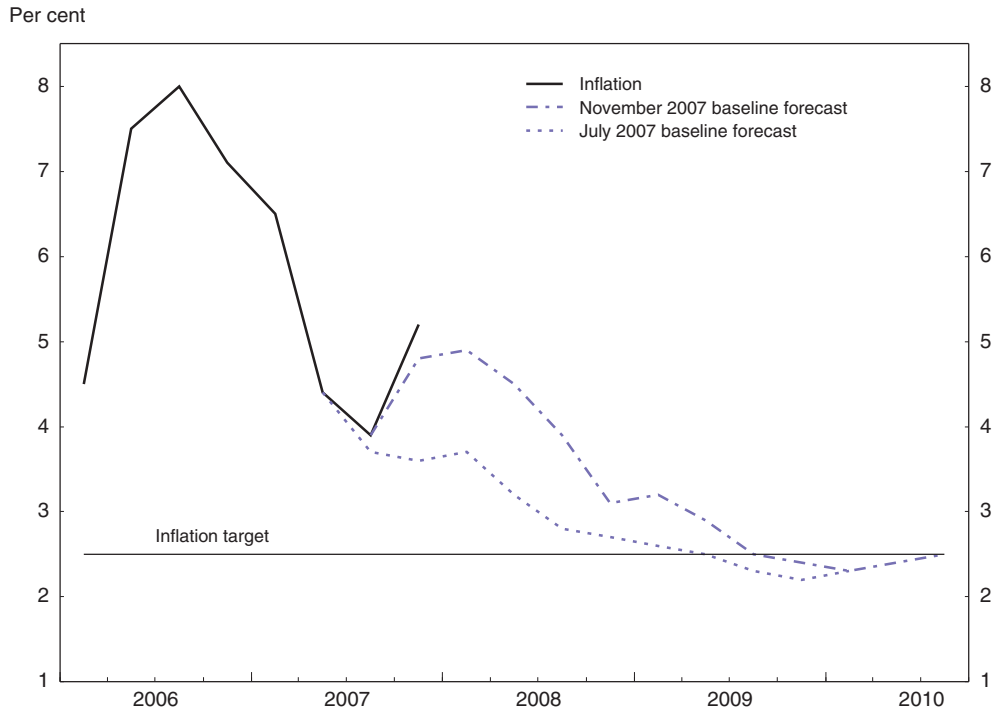
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1. OECD calculations for November and December 2007.
2. Given the breakeven inflation rate measured by the spread between the yield of the Treasury un-indexed bond maturing in 2013 and that of the Treasury inflation-indexed bond maturing in 2015.
3. Given the breakeven inflation rate measured by the spread between the yield of the Treasury un-indexed bond maturing in 2013 and that of the HFF inflation-indexed bond maturing in 2014.
4. Inflation one-year ahead.

Source: Central Bank of Iceland, Monetary Bulletin (2007-3).

the Bank's own assessment that in September "domestic demand [was] still robust … labour market remain[ed] tight, turnover and housing demand [were] buoyant and the pace of lending growth [had] accelerated" (Central Bank of Iceland, 2007b). In contrast, the Central Bank waited until November to hike the policy rate, and then left it unchanged at

Figure 2.3. **Central bank inflation forecasts**



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Source: Central Bank of Iceland, Monetary Bulletin (2007-2) and (2007-3).

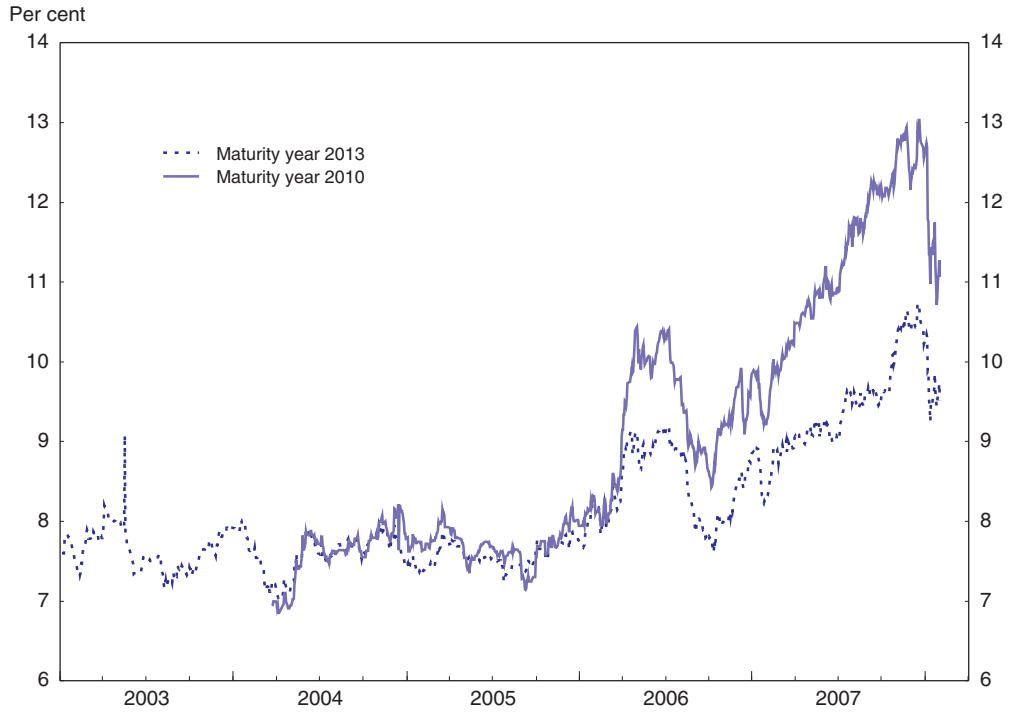
an extraordinary policy meeting in December in spite of mounting inflationary pressures. While these actions could be justified by tighter financial conditions and concerns about the turmoil in the global financial markets, they raised again the perception that political pressures pose a significant constraint to the implementation of monetary policy. It is therefore critical that members of government respect the independence of Central Bank policy making and refrain from publicly suggesting interest-rate cuts, whilst the Board of Governors shows a firmer hand in its fight against inflation to credibly establish its credentials. All in all, contrary to the criticisms that one often hears in the political debate within Iceland, the current restrictive stance of monetary policy is needed to disinflate the economy and restore equilibrium. If anything, the policy rate was increased too timidly.

While there seems to remain some room to improve the conduct of monetary policy, the new communication strategy adopted by the Central Bank at the beginning of 2007 has gone going well beyond the recommendations of the last *Survey*. In particular, following the lead of the Reserve Bank of New Zealand, Norges Bank of Norway and Riksbank of Sweden, the Central Bank of Iceland now publishes its conditional expectation of the path of interest rates. The benefits of disclosing the policy forecasts of the monetary authorities can best be explained in terms of enhanced transparency. More specifically, best practice for monetary policy is to aim at impacting long-term interest rates in order to exert significant effect on consumption and investment decisions, and thus on prices. Interest rates at the long end of the yield curve are primarily driven by expectations on how the policy rate will evolve over time rather than by current headline inflation. Thus, greater transparency on the expected path of the policy rate is thought to increase the

effectiveness of monetary policy by enhancing the credibility of the central bank and fostering a clearer understanding of its decisions among market participants. Some commentators have expressed concerns about disclosing the policy interest path arguing that it may put the monetary authority in a straightjacket where the only two available options may be between a different but suboptimal policy rate and surprising markets. And either would impair the credibility of the monetary authority. In part to address this issue, in Iceland as elsewhere, fan charts have been introduced to communicate to markets the uncertainties around the outlook and simulations have been made available to illustrate how the central bank would react to alternative developments. In sum, these concerns do not seem well founded. Indeed, preliminary evidence from Norway is that monetary policy has become predictable (and hence more effective) since Norges Bank began publishing its policy rate path in 2005. Even in Iceland, there are already some signs that the increased transparency has brought some additional clout to the Central Bank's statements that it intends to maintain a tight stance. This is reflected in the medium-term yield curve, which has tended to flatten out since mid-2006. A more fundamental consequence is that financial markets are now better informed about the likely stance of monetary policy in Iceland than in most other OECD economies. The results should be a closer correspondence between medium-term interest rates and the goals of monetary policy. Flowing from this, the economy should become more stable.

The combination of higher short term rates and clearer communication has led to a noticeable increase in medium- and long-term interest rates in the second half of 2006 and over the course of 2007 (Figures 2.4 and 2.5). However, both nominal and indexed bond

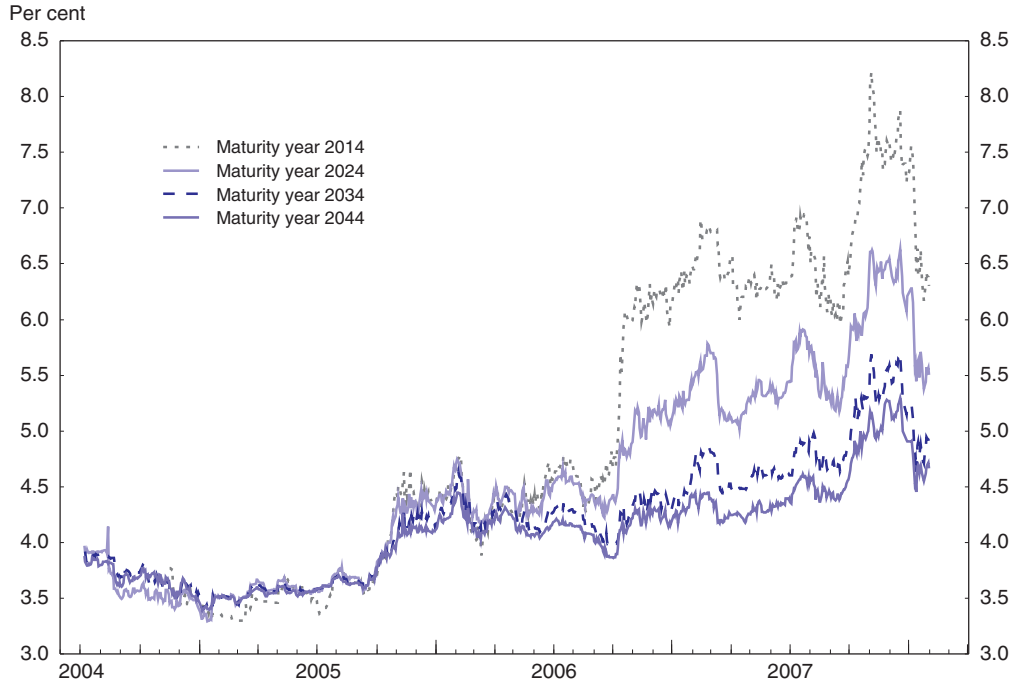
Figure 2.4. **Medium-term nominal Treasury bond yields**



StatLink http://dx.doi.org/10.1787/276414400028

Source: Central Bank of Iceland.

Figure 2.5. **Yield on indexed HFF bonds**
Housing Financing Fund bonds



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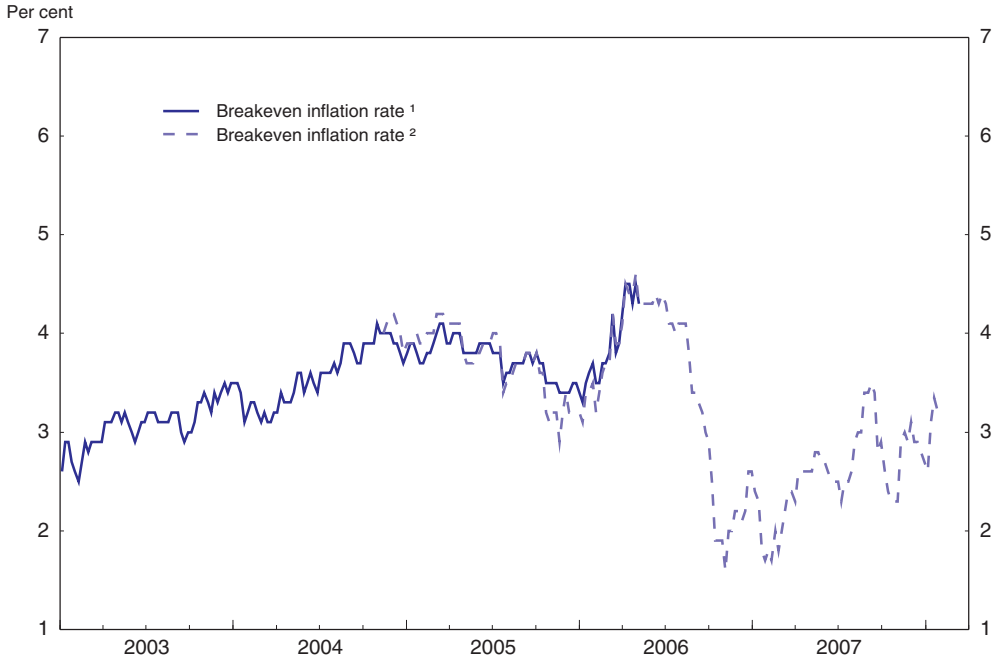
Source: Central Bank of Iceland.

yields fell steeply at the beginning of 2008, partly in response to developments in global financial and concerns about Icelandic banks (Box 1.4). More generally, it should be emphasised that the existence of a deep secondary market in near-risk-free bonds is very important. First, it provides an important benchmark for pricing of debt instruments issued by third parties, such as municipalities and private companies, and thus improves the efficiency of the domestic financial market. Furthermore, the yield curves of these bonds provide an important measure of the market's inflation expectations at various time horizons, and thus, as explained in the paragraph above, strengthen the transmission mechanism of monetary policy. It is therefore important that the Treasury keeps issuing bonds consistently, even though they may be well beyond its (now negligible) funding needs.

Most importantly – indeed, the objective of the enhanced communication – inflation is now expected to move down and then remain near its target, as shown in Figure 2.3, even though the current rate of inflation is above the forecast paths laid out in the Monetary Bulletins of July and December 2007. In contrast, the July 2006 Monetary Bulletin projected inflation to be diverging from its target, with a two-year ahead inflation forecast of nearly 6%.

The change in the Central Bank's inflation projections is also reflected in private sector expectations, to the extent that these can be inferred from the spread between indexed and non-indexed bonds. As Figure 2.6 shows, whereas breakeven inflation remained around 4% through mid-2006, it seems to have now stabilized near 2½ per cent. It should be noted that twice breakeven inflation rose above 3% in the second half of 2007, but the

Figure 2.6. **Breakeven inflation rate**



StatLink http://dx.doi.org/10.1787/276473034702

1. Spread between the yield of the Treasury un-indexed bond maturing in 2013 and that of the Treasury inflation-indexed bond maturing in 2015.
2. Spread between the yield of the Treasury un-indexed bond maturing in 2013 and that of the HFF inflation-indexed bond maturing in 2014.

Source: Central Bank of Iceland, Monetary Bulletin (2007-3), OECD Secretariat.

spikes do not seem due only to renewed concerns about inflation but also to a rising risk-premium on non-indexed bond associated to the turmoil in the global financial markets. In any case, the key point is that the stance of monetary policy is now perceived to be broadly on track, which clearly was not the case in mid-2006.

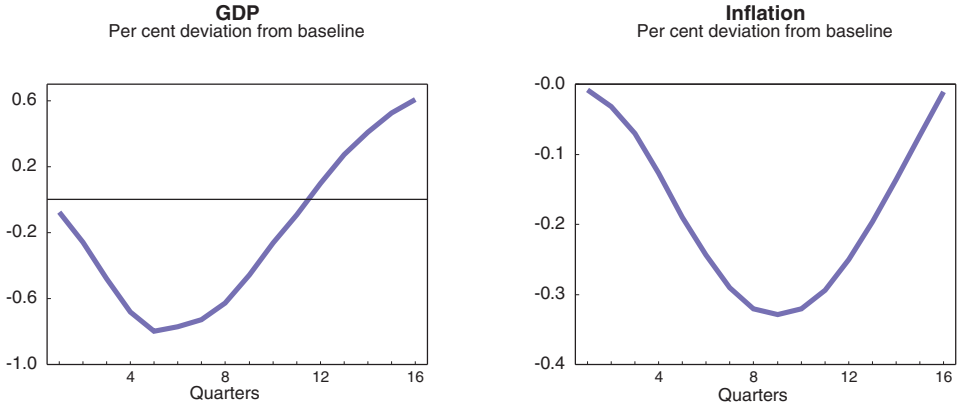
Effectiveness: is monetary policy impotent?

The persistence of strong growth and high inflation despite large increases in the Central Bank's policy rate has raised doubts about the ability of monetary policy to control the economy. Indeed, a number of academics, bankers and other economic observers have suggested that monetary policy is ineffective in Iceland. However, this view is not shared by most monetary experts, either within Iceland or internationally.

Estimates of the impact of monetary policy

One estimate of the effectiveness of monetary policy comes from the Central Bank of Iceland's new Quarterly Macroeconomic Model (QMM). Figure 2.7 shows the effect on GDP and inflation of a 1 percentage point increase in the monetary policy rate for one year. The figure is reproduced from Daníelsson *et al.* (2006, Chapter 10.5) where it is discussed in more detail. In brief, the policy tightening lowers real GDP by ¾ percentage point after about a year and lowers inflation by ⅓ percentage point after two years. A larger and more sustained tightening would have proportionately larger effects.

Figure 2.7. **Response to 1 percentage point temporary increase in interest rate**



StatLink http://dx.doi.org/10.1787/276544261111

Source: Daníelsson *et al.* (2006).

These estimates are broadly in line with estimates for other countries, using a variety of different models and statistical techniques, as outlined in a comprehensive survey by Christiano *et al.* (1999). Essentially, a wide body of research, and the consensus of academic opinion, indicates that monetary policy is potent, although the flattening of the Phillips curve, in Iceland as elsewhere, has worsened the sacrifice ratio. In conclusion, the available empirical evidence indicates that there is no Icelandic exception: as in the rest of the OECD, monetary policy works even if, as discussed below, some qualifications apply.

The indexation argument

It is often argued that Iceland's unusual indexation of loans to inflation makes monetary policy less effective. Taken literally, this claim is difficult to understand. The responsiveness of activity and inflation to monetary policy in other countries is normally thought to be mainly a responsiveness to expected (or *ex ante*) real interest rates. In expectation, these will be the same as indexed (or *ex post*) real interest rates. There are identifiable nominal rigidities (for example, through interactions with the tax code), but these are minor. The main effect of indexation is to prevent unexpected redistributions of income from debtors to creditors. It is not clear how this, in itself, would significantly alter money multipliers. It might be argued instead that, since indexation reduces the damages caused by excessive inflation, the general public does not care as much about changes in the general price level. However, as argued in Chapter 3, this reduced preference for low and stable inflation, while it may induce actions on the part of the government that are at variance with the Central Bank mission, does not reduce *per se* the effectiveness of monetary policy.

The partial "euroisation" of the economy

Another issue of contention is whether the increased use of the euro in the Icelandic economy has substantially reduced the effectiveness of monetary policy. The academic literature defines partial dollarisation as the partial replacement of the domestic currency by a foreign currency, usually the US dollar, in its basic functions. As for Iceland the relevant foreign currency is the euro, its experience could be referred to as "euroisation".

For the moment, the issue is mostly limited to some financial and non-financial institutions using the euro for their account keeping. On the one hand, one can think of low-probability events stemming from this practice which may have serious consequences. For instance, banks could lower the supply of króna-denominated credit in order to boost the use of the euro as a medium of payment. However, supply of credit should continue to respond to demand for it. By itself, the switch to euro accounting should therefore make little difference to the effectiveness of monetary policy as long as transactions are still settled in króna, which would remain under the exclusive control of the Central Bank of Iceland. It should also be noted that domestic payment systems do not currently allow settlements in other currency than the króna. (See Portes and Baldursson, 2007, for a discussion of Icelandic firms using the euro as a listing currency).

If, instead, the euro were accepted as a medium of payment (which is known in the literature as transaction euroisation or currency substitution), the conduct of monetary policy could be substantially complicated. For instance (as explained in Central Bank, 2007c), if financial institutions were to settle their transactions in euros, this would likely reduce the issuance and the turnover of króna-denominated assets and thereby hamper the Central Bank in affecting interest rates across the yield curve. In addition, the euroisation of financial settlements would reduce the ability of the Central Bank to function as a lender of last resort, since bail-outs in foreign currency would be hardly feasible. In any case, as long the króna remained the dominant medium of payment of households and non-financial firms, monetary policy would continue to be, perhaps with some additional complications, an effective stabilisation tool.

By contrast, if the euro became the preferred currency to regulate domestic transactions, the Central Bank would lose much of its ability to influence the economy. In principle, currency substitution amplifies the effect of the foreign interest rate over domestic economic activity, hence weakening the interest rate channel of monetary policy. There are no episodes from the OECD which can be used to benchmark the effect of currency substitution in an advanced economy such as Iceland; in fact, currency substitution is a relatively rare occurrence, even in emerging market economies which have experienced hyperinflation. The Peruvian economy, which is estimated to have been 80% dollarized for over a decade, is a notable exception. Researchers at the Peruvian central bank have recently estimated a dynamic stochastic general equilibrium model to measure the effects of currency substitution, and have found that it noticeably lowered the impact of an interest rate change on output and consumption (Castillo *et al.,* 2006). On the other hand, it should be noted that in the past few years the Central Bank of Peru has successfully managed to keep inflation relatively close to 2.5%, the midpoint of its target range.*

Summing up, euroisation does not seem to pose at the moment a credible threat to the effectiveness of monetary policy in Iceland. Indeed, it seems unlikely that Icelandic households and firms would unilaterally abandon the króna. On the other hand, it should be noted that that the economy's increased reliance on foreign-denominated borrowing

* The literature also identifies another mechanism though which a foreign currency may supersede the domestic currency. Domestic-denominated prices could be indexed to variations in the exchange rate, which is known as price dollarisation (or euroisation). However, price dollarisation has only occurred in response to episodes of hyperinflation, which for the moment do not seem likely to re-occur in Iceland.

could have undesirable effects on financial stability, since it entails a greater exchange risk for domestic agents.

The "broken" mortgage rate channel argument

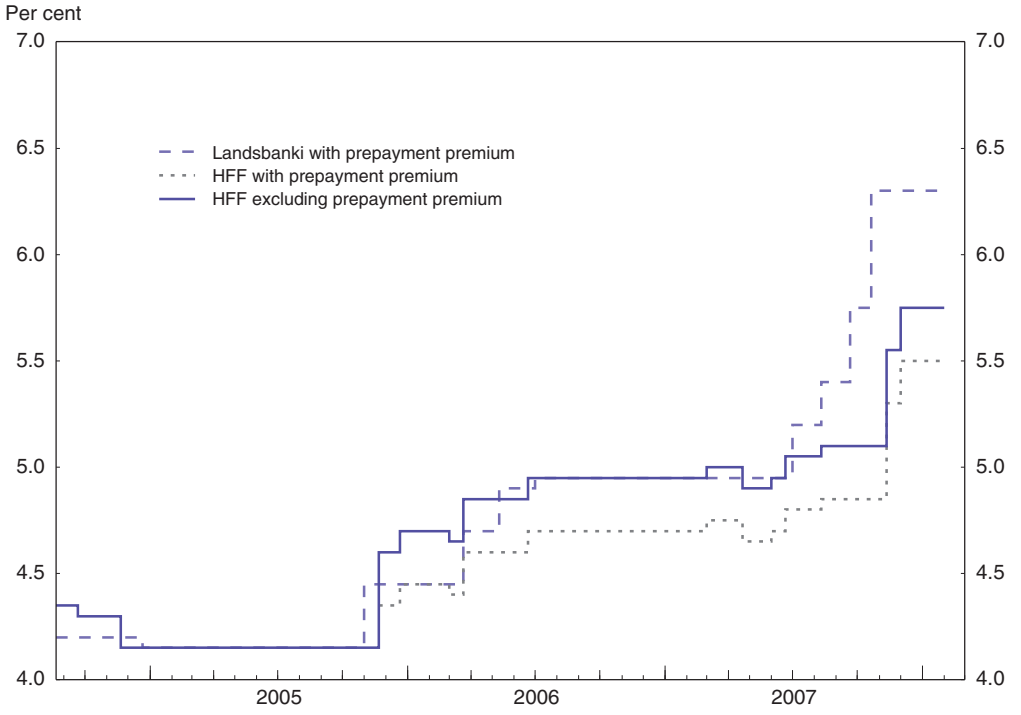
The more important argument is that monetary policy is less powerful when mortgage interest rates are typically fixed for long periods of time, as in Iceland, the United States, or many European countries, than it is in an economy where mortgages tend to adjust in line with variable interest rates, as in the United Kingdom or Australia. Indexation facilitates fixing interest rates for long periods, which may be the basis of the suggestion that indexation renders policy impotent. However, the issues are distinct and the correlation between indexation and fixed mortgages is not strong. There is a substantial literature on the effects of mortgage rate variability (see, for example, the Miles review of the UK mortgage market; Miles, 2004). Perhaps the most relevant conclusions of this literature are:

- Monetary policy multipliers are higher when mortgage rates are variable. This is mainly because high variable rates reduce the disposable income of borrowers. There is an offsetting increase in the disposable income of lenders, but these generically have a lower marginal propensity to consume.
- However, monetary policy is still powerful in economies with long-term fixed mortgage rates. See, for example, Figure 2.7 above, or the similar estimates of monetary policy multipliers for the United States (Brayton and Tinsley, 1996, Figure 3).
- The size of monetary policy multipliers is a relatively unimportant criterion to assess such institutional arrangements. Low multipliers increase the variability of interest rates but, if this risk is hedged, it is not a concern.
- Observers in countries with variable rate mortgages commonly argue that rates fixed for longer would be preferable.

Sceptics suggest that recent experience in Iceland is inconsistent with the view that monetary policy is effective. In particular, the large increase in the policy rate (Figure 2.1) has not been reflected in a commensurate increase in real long-term lending rates. In part, as in other OECD countries, this can be attributed to the "savings glut" and the hunt for high yields by large investors. However, besides these global trends, financial developments within Iceland also contributed to the disconnect between short- and long-term rates. The Housing Financing Fund (HFF), Iceland's main lender for housing, has managed to keep the mortgage rate nearly unchanged since the Central Bank began (slowly) raising the policy rate in May 2004. Back in 2004, with the policy rate at 5.2%, the HFF lending rate stood at 5.1%; more than three years later, in October 2007, the policy rate was brought to 13.3% but, as shown in Figure 2.8, the HFF lending rate was again at 5.1% (and a new mortgage with prepayment penalty was offered at 4.8%). Several commentators have inferred from this episode that policy rates have little, if any effect on mortgage rates, household demand for housing and for other goods and services, and overall economic activity.

This development is important because a positive effect of policy rates on mortgage rates is a central part of the transmission mechanism of monetary policy. For example, in the Central Bank's QMM simulations shown in Figure 2.6, it appears to constitute the single most important channel of influence. However, other channels also matter. These include effects through the exchange rate (the main channel of influence on inflation for the first six quarters), asset prices, and borrowing for purposes other than housing (for example,

Figure 2.8. **Indexed mortgage rates**



StatLink http://dx.doi.org/10.1787/276623304555

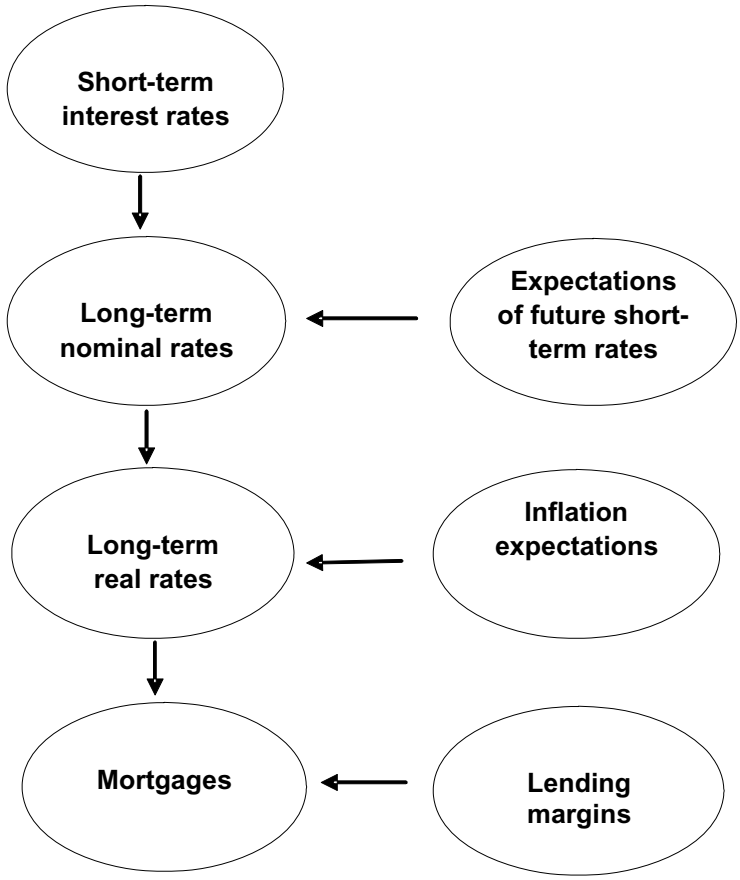
Source: Housing Financing Fund, Landsbanki and Central Bank of Iceland.

consumption and business investment). That said, while a breakdown in this relationship between policy rates and mortgages may not render policy totally ineffective, it would substantially weaken it and would warrant a reassessment of the effectiveness of monetary policy.

Monetary policy can be considered to flow into mortgage rates through several steps, as shown in Figure 2.9. At each step, other influences also matter. For example, current policy, coupled with expectations of policy in the future, will determine medium- and long-term interest rates. Expectations of inflation then determine the effects of these on real interest rates. Lending margins will then translate wholesale interest rates into mortgages.

Variations in other influences can obscure the impact of monetary policy on mortgage rates. Indeed, a combination of various factors has essentially offset the past increases in the short-term policy rate. Expectations of declining short-term rates prevented long term nominal rates from rising initially. Then, expectations of rising inflation depressed real interest rates. Most importantly, financial market liberalisation led to a narrowing of lending margins, lowering real mortgage rates. These developments are discussed in the last *Survey* and in numerous Monetary Bulletins by the Bank of Iceland. Overall, most of these adverse shifts can be regarded as happenstances (with some qualifications, discussed below) that are unlikely to recur. In other words, it seems reasonable to presume that the relationship between policy and mortgage rates was temporarily offset, not permanently broken.

Figure 2.9. **The mortgage rate channel of monetary policy**



It should be noted that these other influences do not represent just noise, but also give rise to reverse causation. A reduction in lending margins, for example, will lower mortgage rates and hence stimulate demand and inflation, causing monetary policy to tighten, as has been the case in 2005. This simultaneity gives rise to the negative correlation between mortgage rates and policy rates evident in the data, even though the effect of policy rates on lending rates is positive.

Some of the influences referred to above are unrelated to monetary policy *per se*. In particular, the narrowing in lending margins can be attributed to financial innovation and changes in housing policy. However, other factors are subject to greater Central Bank control. In 2005 and early 2006, increases in the policy rate were not translated into longer-term rates. Financial markets expected the tightening in policy to be quite temporary, as reflected in a steep downward sloped yield curve. This greatly weakened the transmission mechanism. But, as discussed earlier in the chapter, more recent policy increases have been accompanied by clear Central Bank statements that the increase is likely to be sustained. Longer-term yields rose substantially in late 2007, partly in response to Central Bank's actions. In such a way, the transmission mechanism is not constant but something over which the monetary authority can exercise considerable influence. Indeed, improvements in transparency have allayed some concerns about ineffectiveness of monetary policy.

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There are indeed encouraging signs that a more normal relationship between policy and mortgage rates has been restored. In the wake of the November rate hike, the HFF increased its lending rates to 5.55% and 5.3% (depending on repayment fees) and the rate offered by Landsbanki (a major Icelandic private bank) surged to 6.3% from 5.4% (Figure 2.8). More recent news provides further insights on how the enhanced communication framework could help monetary policy affect long-term interest rates. After growth and inflation continued to surprise on the upside late last year, yields on HFF bonds rose and the HFF had to raise further its lending rates to 5.75% and 5.5%, in part reflecting markets expectations of further tightening at an extraordinary December meeting of the Board of Governors. However, actions fell short of market expectations and the policy stance was left unchanged. In the wake of the news, yields on bonds immediately fell on average by 15 basis points, basically reverting the increase posted ahead of the meeting. This last episode well illustrates how the new framework can improve the transmission mechanism of monetary policy, but also that it cannot replace good policy decision.

Notwithstanding the increases in mortgage rates over the second half of 2007, the reform of the publicly-owned HFF should not be further delayed. As argued in Chapter 1 and in numerous previous *Surveys*, the HFF should be adequately charged for the guarantee the government provides or government backing of the Fund should be credibly terminated. The current set-up not only impedes the proper functioning of monetary policy, but also prevents fair competition in the mortgage market and distorts the economy by effectively providing a subsidy to the construction sector.

Fine-tuning the framework

The inflation-targeting framework adopted by the Central Bank of Iceland reflects in many ways best practice in monetary policy. In particular, in spite of limited resources, its analysis, forecasting and communication display remarkable competence and professionalism. Furthermore, the current policy stance seems appropriate and is indeed contributing to restore stability in the economy. And, the current framework should be maintained until inflation is brought back to target, since any early changes could prove counterproductive. There are nonetheless some features of the framework which could be refined over time to improve the effectiveness of monetary policy.

Keeping in mind these important qualifications, there are two aspects which could be fine-tuned. The recent debate about monetary policy in Iceland has been overly focused on the gap between actual and targeted inflation, in part a reasonable consequence of the magnitude and the persistency of the gap. However, monetary policy has no influence on contemporaneous inflation and, over time, it will be essential to refocus the discussion towards future inflation. This is especially true for a very small open economy such as Iceland, where inflation is inherently volatile and thus will frequently deviate from target. The Central Bank policy statements should put greater emphasis on inflation expectations, which, despite temporary movements in actual inflation, should always remain firmly anchored to target. Perhaps, it may be helpful to identify a simple indicator for underlying inflation pressures, which the Board of Governors can refer to explain its policy decision. Greater emphasis on inflation expectations, which are key to influencing long-term interest rates, would contribute to enhance the effectiveness of monetary policy.

Another, and perhaps more debatable, candidate for change is the targeted inflation measure. The Central Bank of Iceland targets a consumer price index which includes a housing component. Statistics Iceland computes such component as an annuity where the principal is the market value of the property, and the discount rate a relatively short moving average of recent interest rates on housing loans. The change in the housing price index is thus a function of the house prices and current mortgage rates. This user-cost approach for imputing the price of the service flow from owner-occupied housing has several shortcomings for the conduct of monetary policy under an inflation targeting framework. First, a growing body of academic research indicates that an inflation target should use measures of inflation which put more weight on prices which move sluggishly, and exclude asset prices such as housing (Aoki, 2001 and Woodford, 2003). While some policy makers have argued for "leaning against the wind" (ECB, 2005), the Central Bank seems to be having enough problems achieving its inflation target to credibly and effectively commit to the additional goal of preventing asset bubbles. Second, suppose mortgage interest rate were to consistently respond more to changes in the policy rate, perhaps because of a reform of the HFF. Under these circumstances, when the Central Bank hikes interest rates to contain inflation, it also pushes up its target measure of inflation since the higher interest rates boost the annuity derived from owning a house. This artificial increase in measured inflation would prompt the Central Bank to raise the policy rate further, and the resulting over-tightening would then lead to an unnecessary output decline. It should be noted that this is not just a remote theoretical possibility. In December 2007, the twelve-month rate of inflation rose to 5.9% from 5.2% in the previous month, and it is estimated that 0.1 percentage point of this increase can be accounted for by the impact of rising mortgage rates on imputed rents. Unfortunately, moving to a rental equivalence approach, as practiced in the United States and elsewhere in the OECD (Christensen *et al.,* 2005), to impute owner-occupied housing would be difficult as the Icelandic rental market is extremely thin. Furthermore, given the importance of owner-occupied housing, removing it from the housing component of the price index may not be appropriate. A possible solution may be to lengthen the moving average used to compute the discount rate so that changes in the policy rate would take longer before they have an effect on housing component of the inflation index. In any way, the issue cannot be ignored and needs to be eventually addressed, perhaps in the context of related work at the European level carried out in the context of the harmonised consumer index. A final remark is that if the measure of inflation were changed, the target rate should also be revised accordingly.

In light of the confirmed effectiveness of monetary policy as an effective stabilisation tool, calls for unilaterally adopting the euro appear particularly misplaced. Leaving aside the more general considerations of whether Iceland is part of an optimal currency area within the euro zone, the loss of the lender of last resort provides a powerful argument against unilateral monetary union. In addition, the conversion to euros and the loss of seignoirage revenues would be costly for public finances. And, perhaps above all, the transfer of national sovereignty to the European Central Bank without political legitimacy would be unlikely to survive (Buiter, 2000). In conclusion, the only viable option for the adoption of the euro remains full membership in both the European Union and the European Monetary Union.

Concluding remarks

The Central Bank's communication strategy has greatly improved but arguably policymakers have continued to react too slowly to new information and to be overly optimistic about the inflation outlook, prompting speculation about the degree of independence of the Central Bank. Claims that monetary policy in Iceland is ineffective, nonetheless, do not appear well founded. While long-term rates did not always respond to changes in the policy rate, it seems that the relationship was only temporarily offset by a numbers of factors, some outside the control of the Central Bank. In particular, mortgage rates have risen substantially in the wake of the November increase in the policy rate. All in all, it now appears that the monetary policy stance is broadly on track, and inflation should recede if strong vigilance is maintained. Some policy recommendations to strengthen the implementation and the effectiveness of monetary policy are provided in Box 2.1.

Box 2.1. **Recommendations regarding monetary policy**

The restrictive monetary policy stance should be maintained to restore equilibrium in the economy until inflation expectations are solidly anchored to the policy target.

- The publication of the expected path of the policy rate should not prevent the Central Bank to appropriately respond to shocks. Interest rate decisions should be consistent with the reaction function illustrated in the preceding Monetary Bulletins.
- The Central Bank should guard in particular against second-round effects of a possible future deprecation of the currency.
- Members of government should show support for the independence of the Central Bank, as publicly criticising interest-rate setting decisions undermines its credibility and therefore reduces the effectiveness of monetary policy.
- Treasury should continue issuing government bonds, even if they are no longer needed to fund public expenditures, as they provide an important benchmark to price medium- and long-term debt of municipalities and corporations.
- Reform the public-owned Housing Financing Fund should not be further delayed: the current set-up distorts the allocation of resources and impairs the workings of monetary policy.

The inflation targeting framework could be refined once inflation has been credibly brought down to target.

- Put more emphasis on inflation expectations, so as to enhance the influence of monetary policy on long-term rates.
- Revise the methodology to impute the service flow of owner-occupied housing into the target measure of inflation.
- Iceland should join both the European Union and the European Monetary Union if it wants to switch to the euro. Unilaterally adopting the euro is not a viable alternative.

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ISBN 978-92-64-04298-8
OECD Economic Surveys: Iceland
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Chapter 3

Strengthening the fiscal framework

Strengthening the fiscal framework would provide the means for both restraining the growth of public expenditures and helping automatic stabilisers work more efficiently. After reviewing current conditions in Iceland and discussing the pros and cons of fiscal policy activism, the chapter explains how better fiscal rules could improve the efficiency of public spending as well as lead to greater stability over the cycle. The final section lays the argument for extending fiscal rules to local governments.

A sound fiscal position

Fiscal consolidation in the 1990s restored broad budget balance, and strong growth in recent years has led to sizeable budget surpluses. Consequently, the net public debt of the general government has declined from almost 40% of GDP in 1995 to 8% in 2006. Furthermore, although Iceland's generational accounts were slightly deteriorating in the years up to 2004 (the latest available estimate), intertemporal public liabilities are deemed to be low by international standards. This owes mostly to the operation of occupational pension funds for private sector workers that have been mandatory for more than 30 years, and to similar arrangements in the public sector. All in all, long-term sustainability of public finances is not a cause of major concern relative to other OECD countries. This does not mean, however, that there is ample room for increasing public expenditures: as noted in Chapter 1, the government faces considerable contingent liabilities since it guarantees the debt of certain companies and institutions, and it would therefore be prudent to keep sufficient budgetary buffers. As well, the volatility of the macroeconomy, especially in a very small open economy such as Iceland, implies that fiscal trends can reverse rapidly. Overall, a cautious fiscal policy is called for by this chapter.

What is the role for discretionary fiscal policy?

A central question for fiscal policy is whether it should play an active role in countercyclical stabilisation. The consensus view among economists is that monetary policy is the preferred instrument of macroeconomic stabilisation. In the words of John Taylor (Taylor, 2000), for instance: "Monetary policy has a comparative advantage over fiscal policy in achieving countercyclical goals." In this view, fiscal policy should contribute to demand management through automatic stabilisers while discretionary countercyclical measures should be avoided. Hence, fiscal settings should be determined by medium-term considerations, such as boosting national savings. There are some exceptions to this, which can arguably include recent conditions in Iceland. This does not imply, however, that the standard prescriptions do not generally apply in Iceland, and that a new demand management framework is needed.

Fiscal policy is subject to long lags

A first reason for according monetary policy the responsibility for macroeconomic stabilisation is its quicker responsiveness. The lag from the receipt of economic news to a central bank's decision as to how to respond is short. In Iceland, the Central Bank meets every two months. By international standards this is not that unusual, though monthly meetings are perhaps more common. In any case, meeting frequency does not preclude almost immediate reaction to fast-breaking news.

In contrast, fiscal decisions take much longer. That is partly because fiscal decisions are more complicated, with multiple taxes and spending programmes to choose from, partly because they have controversial distributional implications, and partly because

fiscal decisions involve large numbers of decision makers with different objectives. Any change in a government budget appropriately invites discussion and disagreement about priorities. In Iceland, most fiscal measures are jointly decided once a year in the annual budget. Exceptional measures can be decided more quickly, outside the regular budget process. But normally, joint (and hence less frequent) decisions are preferable in order to compare competing priorities. In other small OECD countries, decision-making lags appear to be similar; in larger countries, the lags appear to be even longer. In addition, there is a further lag between the decision and its implementation, especially for investment projects, which varies depending on how much planning is necessary. In large part for this reason, supporters of fiscal activism often prefer that it be implemented through variations in taxes and transfers.

Effectiveness

In Iceland, as in other OECD economies, fiscal policy is ordinarily less powerful than monetary policy. Specifically, a typical variation in government spending or taxes will have a smaller effect on output, and a much smaller effect on inflation, than a typical change in interest rates. (See Box 3.1 for a presentation of short-run effects of fiscal policy in a standard macro-econometric model of the Icelandic economy.) One limitation of this argument is that it is not clear that "typical" variations are actually optimal – though they presumably have some basis in preferences and costs. Perhaps, fiscal settings should be more variable. If they were, they would have significant macroeconomic effects. Another qualification is that in some conditions, monetary policy may be constrained (such as in the well-know liquidity trap example); then, fiscal multipliers are much larger.

Accountability

A final argument for relying on monetary policy instead of discretionary fiscal policy is that this clarifies responsibility for macroeconomic management and promotes accountability. If both fiscal and monetary policy are responsible for demand management, then identifying and correcting failures in policy is difficult and public discussions become confused. The recent situation in Iceland is an example. Over the past few years, the Central Bank repeatedly raised its policy rate while the Treasury ran large fiscal surpluses. It was often said of each arm of policy that it "has already done a lot" and that the responsibility for further action lay with the other arm. Arguably, the failure of monetary policy to approach its target was obscured and excused by the perception that fiscal policy was failing to be appropriately "supportive". Rather than calling for higher interest rates, some commentators preferred to blame fiscal inaction. This distraction made the political climate very difficult for the monetary authority to respond fully.

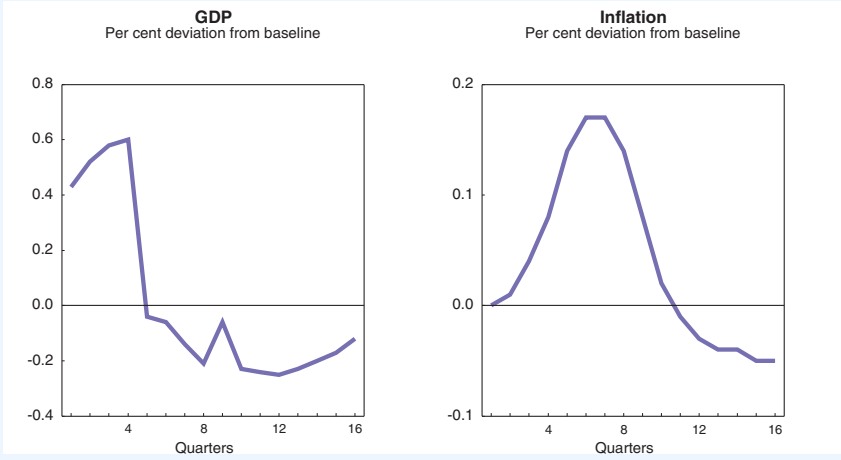
Summary: normally, fiscal activism should be avoided

These objections do not apply to automatic stabilisers. The tendency of government receipts to rise and transfer payments to drop when activity increases tends to dampen booms automatically and instantaneously. Automatic stabilisers boost activity faster than discretionary macro policy during downturns and reduce the need for large variations in policy instruments. And not being subject to review, they do not involve a blurring of responsibility. Indeed, allowing them to run their course contributes to stabilising the economy.

Box 3.1. **Estimated short-term effects of fiscal policy**

Figures 3.1 and 3.2 show the effect of changes in fiscal settings on output and inflation, as estimated by the Central Bank of Iceland's quarterly macroeconomic model (QMM), which incorporates a Taylor-rule type monetary policy reaction function (Daníelsson *et al.* 2006). Figure 3.1 shows the effects of an increase in government spending by 1% of GDP sustained for 4 quarters. GDP increases simultaneously by about three-fifths of the shock, then returns to near the baseline when the shock is removed. The increase in government spending is partly offset by a large increase in imports. Figure 3.2 shows the effect of a reduction in taxes by the same amount, also sustained for 4 quarters. (This is equivalent to a bringing-forward of tax cuts that would have otherwise occurred a year later.) This has a smaller initial impact on GDP than the spending shock because households save some of the tax cut. But as those savings are spent, the effect persists. In both cases initial impacts on inflation are small, if not trivial. These estimates are approximately symmetric: effects are the same size, but opposite in sign, for a spending reduction or postponement of tax cuts.

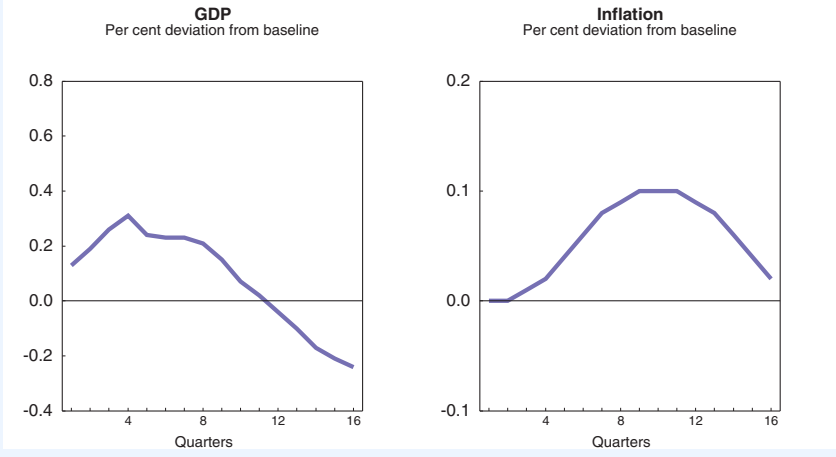
Figure 3.1. **Response to increase in government spending of 1% of GDP**



StatLink http://dx.doi.org/10.1787/276642818264

Source: Central Bank of Iceland (previously unpublished).

Figure 3.2. **Response to reduction in taxes of 1% of GDP**



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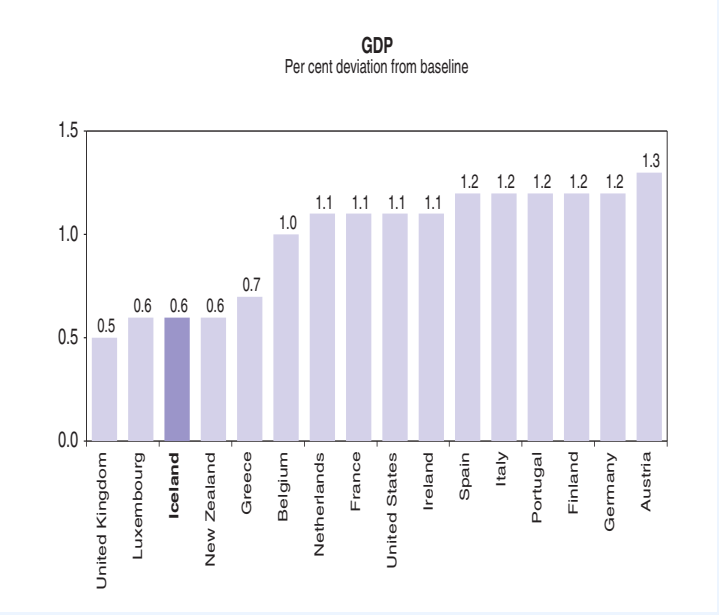
Source: Central Bank of Iceland (previously unpublished).

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Box 3.1. **Estimated short-term effects of fiscal policy** *(cont.)*

The QMM estimates are similar to those found using macroeconomic models in other countries and would widely be regarded as mainstream. For example, Hemming *et al.* (2002) in a survey of studies report that "most expenditure [GDP] multipliers are in the range 0.6 to 1.4 and most tax multipliers in the range 0.3 to 0.8."* The estimates for Iceland lie toward the lower end of the international range, which may reflect the country's small size and hence large short-run marginal propensity to import. Figure 3.3 presents estimates for responses to an increase in spending for various countries. Estimated output multipliers for Iceland are about the same as for other small countries such as Greece, Luxembourg and New Zealand. The estimated inflation multiplier for Iceland is near the middle of other estimates, most of which are tiny. In short, the overall effectiveness of fiscal policy in Iceland is similar to that in other countries, once allowance is made for size.

Figure 3.3. **Response after 4 quarters to increase in government spending of 1% of GDP**



StatLink http://dx.doi.org/10.1787/276657154703

Source: This table is largely based on material compiled by the Central Bank of Iceland. For euro area countries, Fagan and Morgan (2005); for New Zealand, Dunstan *et al.* (2007); for the United Kingdom (the UK Treasury model) Church *et al.* (2000); for the United States (the Federal Reserve's FRB/US model), Reifschneider *et al.* (1999). Where multiple estimates are presented, that shown assumes monetary policy follows a Taylor rule.

One can get some sense of how important the above multipliers are by considering typical changes in policy settings. One measure of this is the standard deviation of annual changes over the ten years to 2006. Column 2 of Table 3.1 shows standard deviations of changes in government spending and taxes (both measured as a share of GDP), and for comparison, the standard deviations of interest rates. Reading across the top row, a typical annual change in government spending, worth 1.5% of GDP, given a multiplier of 0.6, would boost GDP by 0.9% or about half a typical deviation in the output gap. A standard-deviation change in taxes would change output by about one-fifth a standard deviation change in the output gap. A typical deviation in interest rates would change output by

Box 3.1. **Estimated short-term effects of fiscal policy** *(cont.)*

almost one standard deviation change in the output gap. In other words, to offset a typical variation in the output gap would require a relatively ordinary variation in interest rates, a moderately large change in spending or an almost unprecedented change in taxes.

Table 3.1. **The effect on GDP of typical policy changes**

	Standard deviations (1997-2006)	4-quarter GDP multiplier	GDP Effect
Change in government current expenditure /GDP	1.5[1]	0.6	0.9
Change in government current receipts /GDP	1.3[1]	0.3	0.4
Interest rates (Level, short-term, nominal)	2.4[2]	0.7	1.6

1. Per cent of GDP.
2. Percentage points.

Source: OECD database.

Summing up, the QMM estimates confirm that there is no systematic exception for Iceland. As in other OECD economies, fiscal policy is typically less powerful as a stabilisation tools than monetary policy.

* It might be noted that these estimates are far below estimates of generation ago – in the 1970s, multipliers were often thought to be around 3 or 4 (Solow, 2004). It might also be noted that differing empirical approaches tend to give somewhat varying results. For example, recent narrative-based research (Romer and Romer, 2007) finds that tax changes undertaken for counter cyclical reasons have much bigger effects than the above estimates.

It has been argued that fiscal elasticities in Iceland are too small for automatic stabilisers to have a noticeable effect. Indeed, a recent OECD analysis finds that the elasticity of the (flat) income tax relative to the output gap is below unity and that expenditures are nearly stable over the cycle but also that the high corporate tax elasticity is an important offsetting factor (Girouard and André, 2005). Thus, when all factors are considered (see Table 3.2), the cyclical responsiveness of fiscal balances to the economic cycle is estimated a bit below of the OECD average, but is by no means negligible. An alternative study by the Ministry of Finance estimates that the personal income tax elasticity with respect to the growth of the tax base (not the output gap) is on average slightly above unity (Ministry of Finance, 2007). In any case, all the available evidence provides support for reinforcing the effectiveness of automatic stabilisers, especially on the expenditure side, not for fiscal activism.

Table 3.2. **Elasticities with respect to the output gap**[1]

	Corporate tax	Personal tax	Indirect tax	Social security contributions	Current expenditure	Total balance
Iceland	**2.08**	**0.86**	**1.00**	**0.60**	**–0.02**	**0.37**
OECD	1.50	1.26	1.00	0.71	–0.10	0.44
Denmark	1.65	0.96	1.00	0.72	–0.21	0.59
Euro area	1.43	1.48	1.00	0.74	–0.11	0.48
United States	1.53	1.30	1.00	0.64	–0.09	0.34
Korea	1.52	1.40	1.00	0.51	–0.04	0.22

1. The last column is the semi-elasticity which measures the change of the budget balance, as a per cent of GDP, for a 1% change in GDP. It is based on 2003 weights. Aggregate country zone averages are unweighted.

Source: Girouard and André, 2005.

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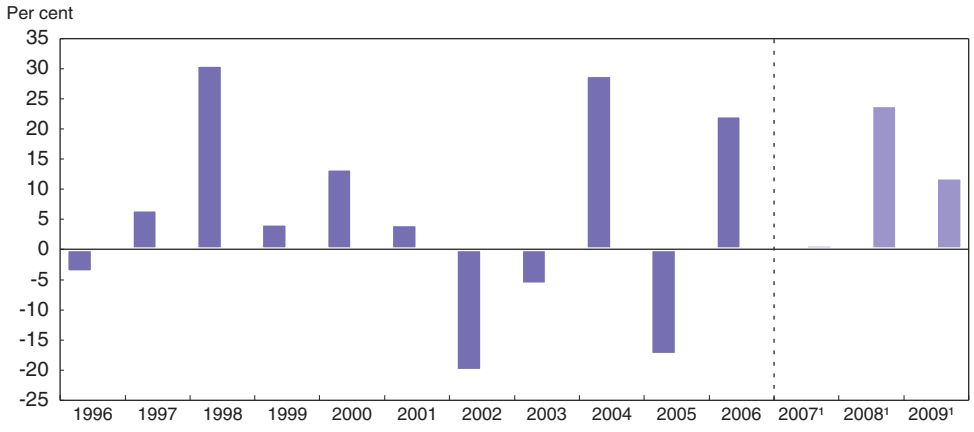
Fiscal activism could potentially help stabilize the economy over the cycle; however, it often turns out to be counterproductive in practice. A few episodes in the recent Icelandic experience well illustrate how difficult it is to too timely implement fiscal policy measures, and stand firm to cyclical and political pressures.

First, the 2007 tax cuts, a sensible structural reform reducing fiscal pressure and thus boosting the efficiency of the economy, turned out to be poorly timed, effectively undoing the work of the automatic stabilisers on the revenue side. According to the multipliers presented in Box 3.1, the tax cuts, which the Central Bank of Iceland estimates to have already cost the government about 2.5% of GDP, should have already boosted output by almost 1 percent and (underlying) inflation by 0.2 percentage point. In fact, the government had planned the timing of the measures to coincide with a downturn in the cycle, which shows not only how difficult it is to timely implement fiscal policy measures but also provides support for phasing in gradually future tax cuts. Furthermore, it should be noted that some of the tax cuts took place mainly with a reduction of the value-added tax, and sales taxes not only are less distortionary than other taxes but also discourage consumption, and therefore, in the case of Iceland, could help stabilising the economy.

A second and related issue is that public expenditures have not been sufficiently countercyclical, as should be assured by the workings of fiscal multipliers. As was pointed earlier (see Table 3.2), public expenditures tend to be fairly constant over the cycle. Much of this is due to the fact that public wage consumption has been procyclical, as it seems that both central and local government find hard to resist demand for higher pays for public employees during booms (Annett, 2007). In 2007, the combination of higher public wages and lower taxes, as shown in Chapter 1 (see Figure 1.7), led the fiscal stance to turn loose at a very inopportune time.

Finally, public expenditures appear to have been excessively volatile in recent years. An enlightening statistic is the standard deviation of the annual growth rate of public investment, which has measured nearly 18% over the past ten years (Figure 3.4). And this pattern is expected to continue over the projection period. In recent years, the volatility of investments by local governments has been a particular source of instability, while

Figure 3.4. **Annual growth of public investment**



StatLink http://dx.doi.org/10.1787/276675723206

1. OECD projections.

Source: OECD Economic Outlook 82 database.

fluctuations of investments by the central government have been in large part the result of short-run stabilization policies. In any case, going forward, a more gradual implementation of public projects could enhance the contribution of public expenditures to macroeconomic stability.

Overall, as long recognized by the Ministry of Finance, these considerations suggest that fiscal policy settings should normally be decided without direct reference to the state of the business cycle. This is not because discretionary fiscal policy is harmful or impossible. It is simply because monetary policy can generally do the job a little better. It can respond more rapidly and more freely, and it has stronger effects on both output and inflation. Furthermore, decision-making is simplified and accountability is strengthened by assigning the task of demand management to monetary policy.

... though there are some legitimate counterarguments

As often is the case in economics, there are valid reasons to sustain the opposite case. First, exchange rate considerations provide a sound argument for fiscal activism, especially for very small open economies. Partly reflecting large interest rate differentials, the Icelandic króna is estimated to be considerably overvalued (Tchaidze, 2007). The appreciation has seriously squeezed the trade-exposed sectors of the economy, while benefiting consumers through lower import prices. Perception of hardship in the exposed sector, coupled with its uneven distribution, has been a source of strong criticism of the Central Bank. In such circumstances, exchange rate concerns do limit monetary policy and enhance the case for discretionary fiscal policy. The situation parallels the zero nominal interest rate lower bound – though the constraint is distributional and political rather than structural. In any case, fiscal tightening can reduce demand pressures when monetary policy is immobilised. Indeed, when interest rates are held constant, fiscal multipliers become larger. Furthermore, to the extent that fiscal measures can reduce pressures on the exchange rate, they can even out the burden of restraint, which seems advisable for both distributional and political reasons. However, while some coordination between monetary and fiscal policy would clearly be desirable, it would be difficult to achieve given the long lags and political constraints that characterise fiscal policy decisions

Another important caveat to the case against fiscal activism comes from the fact that Iceland's recent boom has been unusual in several respects. It has been driven by a combination of greater access to foreign capital and policy-facilitated developments in the housing and aluminium sectors, and, above all, it has been protracted and expected. The economy has been overheating since 2004, and current forecasts call for the unemployment rate to remain low and for inflation to be in excess of its target through 2008. This is relevant in that it invalidates one of the main arguments against discretionary fiscal policy – the long decision lags. While these lags make smoothing business-cycle fluctuations unadvisable, they do not preclude action to smooth imbalances extending over several years.

While exchange rate considerations and the predictability and the length of the expansion indicate that some discretionary fiscal measures would have been desirable over the past few years, they do not provide a strong enough case for fiscal activism. Above all, discretionary fiscal policy is often influenced by political and other constraints and, as discussed earlier and in Chapter 2, monetary policy, even in Iceland, should be the preferred tool to manage aggregate demand over the business cycle. All in all, Iceland's institutional framework, in which fiscal settings are based on medium-term objectives and monetary policy is responsible for short-term stabilisation, appears to be sensible. Against

this backdrop, the next section will present a set of recommendations to strengthen the rules that guide fiscal policy decisions, with the aim of improving the effectiveness of the automatic stabilisers and of curbing the tendency for higher public spending.

The fiscal framework

The fiscal framework has undergone substantial changes since the 1990s, with a goal of enhancing the control and effectiveness of public spending. In 1992, a top-down "frame-budgeting" approach was introduced in order to enhance the policymaking role of the government and to increase overall fiscal discipline. This annual process begins with the government agreeing on a total expenditure level. After a special cabinet committee, led by the Prime Minister, sets expenditure frames (ceilings) for each ministry early on in the budget formulation phase. Each minister is then responsible for allocating available funds to agencies and projects under the department's auspices, in accordance with the limits set by the frame. The budget is finally presented to Parliament for amendments and approval.

In 2003, the "frame budgeting" approach was supplemented by the adoption of spending rules (Ministry of Finance, 2003). For the central government, a ceiling to real public consumption was set at 2%, and one for real transfers at 2.5%. Furthermore, the personal income tax rate was set to be varied less frequently, with the aim of keeping the budget in balance or preferably a small surplus, while the associated tax credit has been regularly adjusted to offset the fiscal drag of inflation. In addition, the government began to present medium-term plans, setting 4-year revenue and expenditure projections and frames for expenditure growth in real terms.

As argued in previous *Surveys*, this framework has not prevented guidelines for central government's real expenditure growth from being missed. Table 3.3 shows that real public consumption by the central government has almost always been (even if so slightly) above the 2% ceiling, a tendency which is expected to persist over the near term. It should be noted that the definition of central government is also ambiguous, as it is not clear if it refers to Treasury alone and there seem to be differences between the Ministry of Finance and Statistics Iceland. For real transfer payments, it is even more problematic to verify compliance as there are no readily available statistics. However, the Secretariat estimates that, based on nominal figures from the 2008 budget and on public consumption deflator projections from the Ministry of Finance, Treasury real transfer payments should have grown 4.9% in 2007 and are expected to rise 4.4% in 2008, both well above the 2.5% ceiling. In short, fiscal rules are frequently not met but infringements are obscured by sub-optimal reporting standards. In part deviations from target can be accounted for by one-off shocks

Table 3.3. **Real public consumption, 2004-2009**

Annual per cent charge

	2004	2005	2006	2007[1]	2008[1]	2009[1]
Central government[2]	2.1	2.6	2.8	2.6	2.2	2.6
Central government[3]	1.4	3.0	2.4	..	..	..
Local governments	0.0	5.2	6.3	3.2	2.8	2.5
Total public sector	2.2	3.5	3.9	2.8	2.4	2.5

1. Ministry of Finance forecasts.
2. The Ministry of Finance definition of central government includes both the Treasury and the social security sector.
3. The Statistics Iceland definition of central government only includes the Treasury.

Source: Ministry of Finance and Statistic Iceland.

to defence spending related to the closure of the US military base, however the National Audit Office has repeatedly observed that a significant number of ministries and public agencies have far outspent their budget year after year. In 2006, it found that two-thirds out of around 300 budgetary items were outside the 4% deviation allowed for in the regulations concerning budget implementation, a practice that clearly undermines stated government objectives. In addition, these medium-term plans seem to have been in practice more a forecasting exercise than a means of budgetary restraint. With no mechanism in place to ensure that targets are met, each annual budget presents an update of the previous medium-term plan starting from a higher expenditure level. In fact, it should be noted that the budget surpluses posted by the central governments in recent years cannot be attributed to an effective control on expenditures; rather, they are mainly the result of surprisingly buoyant tax receipts associated with stronger-than-expected GDP growth, as shown in Table 3.4.

Table 3.4. **General government fiscal situation**[1]

Per cent of GDP

	2001	2002	2003	2004	2005	2006	2007[2]
Revenues	41.9	41.7	42.8	44.1	47.2	48.2	47.4
Expenditures	42.6	44.3	45.6	44.0	42.3	41.8	43.1
Financial balance	–0.7	–2.6	–2.8	0.0	4.9	6.3	4.2
Structural balance[3]	–1.6	–3.0	–3.1	–1.4	2.6	4.4	3.2
Structural primary balance[3]	–1.0	–2.6	–2.5	–1.1	2.2	3.6	2.5
Net debt[4]	24.1	23.3	23.2	22.0	9.8	7.3	..
Gross debt[4]	43.9	43.3	40.6	35.4	25.5	28.9	..
Memorandum items:[4]							
Central government							
Revenues	31.1	30.8	31.8	33.0	35.4	35.5	..
Expenditures	31.6	32.1	33.6	32.0	31.0	30.1	..
Financial balance	–0.5	–1.3	–1.8	1.0	4.5	5.3	..
Local government							..
Revenues	11.6	11.7	11.9	12.0	12.7	13.7	..
Expenditures	12.2	13.0	12.7	12.8	12.6	13.4	..
Financial balance	–0.6	–1.3	–0.8	–0.8	0.1	0.3	..

1. National accounts basis.
2. OECD projections.
3. Per cent of potential GDP.
4. Ministry of Finance.

Source: *OECD Economic Outlook 82*; Ministry of Finance.

Even more so than the central government, local governments (that is, the municipalities) have let their spending increase together with revenues. Over the 2003-2006 period, expenditures by municipalities have grown at an average pace of 8% in real terms, three times the rate recorded at the central government level. As municipalities account for one-third of total public-sector spending, their finances have a noticeable impact on the overall fiscal stance. For instance, the strongly procyclical (and ill-timed) surge in public investment between 2005 and 2006 was largely due to the fact that local government investment rose by 50% in real terms.

Thus, in spite of the record budget surplus and the substantial debt reduction, there seems to be ample room to strengthen the existing fiscal framework. Well-designed rules constraining the discretionary power of budget policymakers (both at the central and the

local level) can offer the means for avoiding excessive public expenditures and ensuring long-term sustainability, and can also enhance the effectiveness of automatic stabilisers.

The international experience

Over the past decade and a half, a large number of countries have introduced fiscal rules. Rules have focused on spending, deficits or revenues, and a wide cross-country heterogeneity is documented in Table 3.5. Recent econometric analysis of twenty-four

Table 3.5. **Main fiscal rules currently applied in OECD countries**

	Date and name	Characteristics of the set of rules			
		Budget target	Expenditure target	Rule to deal with windfall revenues	Golden rule
Australia	Charter of Budget Honesty (1998)	Yes	No	No	No
Austria	Stability and Growth Pact (1997)	Yes	No	No	No
	Domestic				
	Stability Pact (2000)				
Belgium	Stability and Growth Pact (1997)	Yes	No	Yes	No
	National budget rule (2000)				
Canada	Debt repayment plan (1998)	Yes	No	Yes	No
Czech republic	Stability and Growth Pact (2004)	Yes	Yes	No	No
	Law on budgetary rules (2004)				
Denmark	Medium term fiscal strategy (1998)	Yes	Yes	No	No
Finland	Stability and Growth Pact (1997)	Yes	Yes	No	No
	Spending limits (1991, revised in 1995 and 1999)				
France	Stability and Growth Pact (1997)	Yes	Yes	Since 2006	No
	Central government expenditure ceiling (1998)				
Germany	Stability and Growth Pact (1997)	Yes	Yes	No	Yes
	Domestic Stability Pact (2002)				
Greece	Stability and Growth Pact (1997)	Yes	No	No	No
Hungary	Stability and Growth Pact (2004)	Yes	No	No	No
Iceland	**Frame budgeting (1992)**	**No**	**Yes**	**No**	**No**
	with real expenditure ceilings (2003)	**No**	**Yes**	**No**	**No**
Ireland	Stability and Growth Pact (1997)	Yes	No	No	No
Italy	Stability and Growth Pact (1997)	Yes	Yes	No	No
	Nominal ceiling on expenditure growth (2002)				
Japan	Cabinet decision on the Medium term fiscal perspective (2002)	Yes	Yes	No	No
Luxembourg	Stability and Growth Pact (1997)	Yes	No	No	No
	Coalition agreement on expenditure ceiling (1999, 2004)				
Mexico	Budget and fiscal responsibility law (2006)	Yes	No	Yes	No
Netherlands	Stability and Growth Pact (1997)	Yes	Yes	Yes	No
	Coalition agreement on multiyear expenditure targets (1994, revised in 2003)				
New Zealand	Fiscal responsibility act (1994)	Yes	Yes	No	No
Norway	Fiscal Stability guidelines (2001)	Yes	No	Yes	No
Poland	Stability and Growth Pact (2004)	Yes	No	No	No
	Act on Public Finance (1999)				
Portugal	Stability and Growth Pact (1997)	Yes	No	No	No
Slovak Republic	Stability and Growth Pact (2004)	Yes	No	No	No
Spain	Stability and Growth Pact (1997)	Yes	No	No	No
	Fiscal Stability Law (2001, revised in 2006)				
Sweden	Fiscal budget act (1996, revised in 1999)	Yes	Yes	No	No
Switzerland	Debt containment rule (2001, but in force since 2003)	Yes	Yes	Yes	No
United Kingdom	Code for fiscal stability (1998)	Yes	No	No	Yes

Source: OECD (2007, Table 4.2); Ministry of Finance.

OECD countries (including Iceland) since 1978 indicates that a combination of expenditures and deficit rules has had favourable effects on fiscal consolidation outcomes (OECD, 2007).

The international experience provides further interesting lessons for Iceland. In several countries, the fiscal framework has been successfully reinforced by establishing a strong reporting system and mechanisms that increase the political costs of breaching the rules. Efficiency was also improved by adopting an approach based on prudent macroeconomic forecast and on independent analyses of the fiscal and economic effects of the policies to be enacted. Finally, transparency and communication with the public (as in the case of inflation targeting) seem to be crucial features of any successful experience with fiscal rules.

The experience of the Netherlands, where political fragmentation usually gives rise to multi-party coalitions are as in Iceland, seems the most fitting. The Dutch fiscal framework is based on four-year expenditure ceilings (Bos, 2007). However, the ceilings are rigid and are separately set for central government spending, social security and healthcare. Furthermore, an independent agency provides not only prudent forecasts of the Dutch economy but also detailed analyses of the economic effects of the policy measures proposed by the various parties to use before elections, during coalition formation, and to underpin the annual budget process. It should also be noted that while expenditures ceilings are set in real terms, they are indexed to the deflator of "national" expenditures (which therefore excludes import and export prices), and that automatic stabilisers are allowed to operate on the revenue side. Finally, there is an official advisory group which provides annual recommendations to ensure that budgetary rules and principles evolve with best practices and changing circumstances.

Last but not least, in many countries fiscal rules for the central government are often complemented by a wide variety of rules at subnational levels. In particular, several EU countries have set up domestic stability pacts to align domestic fiscal rules for local governments with their Maastricht commitments.

Improving the central government budgeting framework

International comparison reveals that fiscal framework in Iceland is sensible, but such comparisons also provide further motivation and practical suggestions to strengthen it. As noted earlier, the main problem with the existing "frame budgeting" is that the frames are seldom respected, resulting in continued expenditure slippage. There are two main reasons: these ceilings are effectively set every year and the base of expenditures is allowed to drift up. Best practice calls for multi-year spending targets and overall fiscal objectives to be clearly laid out and incorporated into coalition agreements. This is at variance with current practice where coalition agreements contain only vague references to fiscal policy. Compliance to the rules should be verified regularly, and results should be made available to the public. There should be political costs for failing these objectives, and rewards for achieving them. Greater political ownership would also deter altering the frames during the legislative process and having to resort to supplementary budgets in the implementation phase. In addition, multi-year frames should be set for each ministry. These ceilings should be binding in order preclude expenditure base drift, so that if a ministry overspends one year, it will have less resources the subsequent years. Finally, in order to deal with unexpected events, contingency rules could be included *ex ante* in the budget.

The adoption of nominal spending limits would considerably increase transparency, which is essential for the success of any rule. If the public understand why an action is being taken, that greatly increases the likelihood of the associated rule being successful and sustained. Switching to nominal ceilings would also increase the government's ownership of the goal of controlling inflation. In contrast, the government has repeatedly been accommodating wage increases which are at variance with the inflation-targeting framework adopted in 2001. Ideally for this purpose, once inflation has stabilised, the nominal ceilings could be set based on the Central Bank's inflation goal. As a minimum, if the government were to decide to stick to real ceilings, it should follow the Dutch example and inflate expenditures based on an index that excludes import and export prices, therefore abandoning the GDP deflator. This would ensure that exchange rate fluctuations do not alter the value of public expenditures, with the possible risk of provoking the development of dangerous inflation spirals.

Greater emphasis on a medium-term horizon would also allow developing better plans for reducing fiscal pressures. In 2007, tax cuts provided a considerable stimulus to an economy which was already overheating, and should have been postponed or offset by additional spending restraint. On the other hand, it is not obvious that it is worth deviating from the existing principle that tax credit should be indexed to nominal income. In any case, if budget surpluses were to persist, the government should avoid further cuts to sales taxes, which lower households' incentive to save, and instead reduce income taxes, with positive supply effects. For this reason, any harmonisation among the different value-added tax rates should aim at being revenue neutral.

Switching to a nominal multi-year budgeting plan would not only strengthen the medium-term orientation of expenditure policy and budget discipline but would also enhance the contribution of fiscal policy to macroeconomic stabilization. Less expenditure slippage and well-timed tax cuts would greatly improve the efficacy of automatic stabilisers on the revenue side. In addition, once inflation has stabilised, nominal ceilings based on Central Bank inflation expectations would likely result in a more countercyclical public spending.

Another issue of contention is the timing of public investment, as it appears to have been exceedingly volatile in the recent past. Public investment should be based on careful cost-benefit analysis, including environmental impacts. Ordinarily, if benefits exceed costs, investment should be undertaken even though in some cases, timing will determine benefits and costs and thus it may be worthwhile to wait. This is not to say that public investment should be used for countercyclical stabilisation purposes, as the time required for the cost-benefit analysis and the long implementation lags make it an odd instrument to offset short-term fluctuations. In fact, the Icelandic experience seems a primer of what not to do: delaying worthwhile public investment just to add it to the list the following year does not contribute to economy stability, and creates confusion about the merits of each single project. In a boom, it is preferable to allow marginal private projects to be crowded out by increasing interest rates rather than seek to fine-tune worthwhile public projects.

Finally, while the advantages of spending rules over deficit rules are clear (Anderson and Minarik, 2006), it appears that the best practice calls for a combination of the two (OECD, 2007). In this light, it would be beneficial if the current practice of aiming at keeping the budget in balance or preferably a small surplus would be supplemented by a clearly-stated and transparent medium-term balanced-budget requirement. In fact, as the

experiences over the past ten years of other OECD countries illustrate (such as Australia, Canada, Finland, New Zealand and Sweden), nothing should prevent Iceland from running persistent budget surpluses. This would be particularly opportune given the considerable external imbalances, the large amounts of contingent liabilities and the economic volatility, among other considerations.

The case for subnational fiscal rules

The specific structure and increasing responsibilities of local governments both have consequences on overall spending outcomes. Local authorities are still in the middle of a merging process that began more than fifty years ago. There are now 79 municipalities as compared with 171 in 1994 and 229 in 1950, when the pace of mergers accelerated. Nonetheless, large differences in size have persisted: Reykjavik counts for over one-third of Iceland's population, while over one-half of the municipalities have less than 1 000 inhabitants.

This amalgamation process has facilitated the transfer of responsibilities from the central government to the municipalities, thus improving the allocative efficiency of public spending by matching public services to local preferences. Local governments are now responsible for providing primary and secondary education (up to the age of sixteen), social services (including those for the elderly and housing for low-income earners, but excluding employment services) and some infrastructure (such as harbours and environmental matters). To finances these activities, municipalities have some limited taxation powers on income and real estate property, which provide approximately 70% of their income. Nearly 20% of local revenues come from charge fees for services that municipalities provide, and over which they have considerable discretion. Direct payments from the central government, mostly through the Equalisation Fund, account the remainder (less than 10%). Municipalities can also raise loans to meet capital expenditure without authorisation from the central government.

Local revenues have surged from 11.6% of GDP in 2001 to 14.3% in 2006 (see Table 3.4), and municipalities have shown even less restraint than the central government in spending these windfall resources. The pick-up in expenditures can be partly attributed to strong population growth which in turn has led to an increasing demand for local public services (especially schooling and housing-related investment). It appears nonetheless that municipalities have systematic difficulties in containing costs, as it is harder for them to resist claims for more public services and higher pay for employees.

As expenditures by local governments account for about a third of the overall level, national spending objectives cannot be achieved without effective co-operation between the central government and the municipalities. For instance, both in 2004 and in 2006, a run-up in investment at the local government level partly offset the central government's efforts to restrain public spending. Furthermore, as noted earlier, the municipalities are responsible for the provision of politically-sensitive services (such as education), which further increases the central government's stake in the conduct of local fiscal policy. Finally, it should also be noted that in Iceland oversight of local governments from financial markets and tax competition among local authorities can only play very limited roles to foster best practice, given the size of the country and most municipalities. In sum, there seems to be ample scope for improving the budgeting process at the local level and to institutionalise the co-operation across levels of government.

In the first half of 2007, the Ministry of Finance began negotiations with the municipalities to address these issues. In exchange for debt relief and increased transfers, the Ministry has proposed the introduction of ceilings on real expenditure growth and the level of debt as well as a balance budget requirement over the business cycle. Unfortunately, little progress has been made so far, but the case for extending fiscal rules to municipalities is sound.

First of all, the revenues of Iceland's municipalities are highly elastic with respect to the cycle since the local income tax is the main source of revenues and the Equalisation Fund is financed through a fixed percentage (now 1.4%) of the taxation income of the central government. To offset the negative consequences of the combination of the cyclical variability of local finances with a tendency to spend-it-all, expenditure ceilings can be used in order to both smooth and curb the spending of municipalities. Limiting the discretionary power of budget policymakers should not only improve long-term fiscal sustainability and short-term stability, but also help to restrain the size of the public's sector and thus raise aggregate efficiency (Sutherland *et al.,* 2005). In addition to the Ministry of Finance's proposal, in order to reduce the cyclicality of local revenues, the share of property taxes (which tend to be relatively stable over the cycle) could be increased, and the Equalisation Fund's transfers could be linked to cyclical conditions (or projections as in the case of Denmark).

The central government plan also calls for borrowing constraints and a balanced budget requirement. It should be noted that the two are based on similar grounds, in that they essentially set objectives for the flow and the stock of debt in order to ensure long-term sustainability (Sutherland *et al.,* 2005). The case for their adoption is also clear given that municipalities are likely (and rightly) perceived by lenders as borrowers as having their finances implicitly guaranteed by the central government. In practice, however, this is a minor issue in Iceland in view of the sound fiscal position of local authorities: the combined net financial liabilities of municipalities stood at 4% of GDP in 2006, having come down from almost 10% in 2000.

An important obstacle to the effective introduction of local fiscal rules is the minuscule size of many municipalities, which prevents the adoption of innovation in public management since their implementation costs become excessive relative to the resulting savings. It is therefore crucial to accelerate the amalgamation process, or at least combine the budgeting process of the smallest local authorities. Notwithstanding this concern, the proposed local fiscal rules could provide the means for achieving the efficiency gains of local autonomy as well as ensuring that national spending objectives are met. Rules should be designed to take into account changes in population and costs resulting from new central government legislation. Furthermore, credible enforcement mechanisms should be set in place. Also for this reason, as for the central government, ceilings should be set in nominal rather than real terms and for a specific multi-year period rather than over an undefined business cycle.

Concluding remarks

In summary, although public debt has been brought down and the long-term position of public finances is sound, the conduct of fiscal policy in Iceland could be improved. Recent budget surpluses are more than accounted for by a surge in revenues, and some fiscal slippage has led to a renewed increase of public expenditures relative to GDP. In contrast, other OECD countries used windfalls in government's revenues to set-up rainy

day funds. As well, there seems to be room to take off some pressure from monetary policy for short-term stabilisation. It should be stressed that the latter is not an argument in favour of fiscal activism but for stronger automatic stabilisers, especially on the expenditure side. While discretionary fiscal policy is not harmful or impossible, monetary policy should remain the preferred instrument for managing aggregate demand mainly because it can respond more rapidly and more freely from political constraints. As detailed in Box 3.2, the medium-term orientation of expenditure policy of both central and local governments should be reinforced by introducing multi-year budget goals with binding spending limits. The resulting framework should help restrain overruns of budget spending and enhance the effectiveness of automatic stabilisers.

Box 3.2. **Recommendations regarding fiscal policy**

- The "frame-budgeting" approach could be improved to curb spending overruns and increase the contribution of fiscal policy to macroeconomic stabilisation. Binding multi-year spending ceilings should be set for each ministry to preclude expenditure base drift.
- Greater transparency and clearer communication to the public would also increase the enforceability of existing fiscal rules. For example, coalition agreements should include precise references to the medium-term fiscal objectives (such as budget surpluses), so as to provide a term of reference against which to measure the performance of the new government. As well, reporting standards of compliance to rules need to be improved.
- Once inflation has stabilised, the adoption of nominal ceilings consistent with Central Bank's inflation target would result in a more countercyclical fiscal policy and would also enhance transparency and increase the government ownership of the goal of controlling inflation. If the existing real ceilings are maintained, inflate public expenditures using an index that excludes import and export prices in order to ensure that exchange rate fluctuations do not give rise to inflation spirals.
- Automatic stabilisers should be allowed to run their course. Future tax cuts should be phased in gradually and be part of a medium-term strategy to increase the efficiency of the economy. In addition, both central and local governments should restrain public sector wage growth during expansions.
- Public investment is not well suited as policy instrument for demand management and should be solely based on careful and independent cost-benefit analysis. To the extent possible, projects should be implemented smoothly in order to contribute to macroeconomic stabilisation.
- The planned implementation of fiscal rules for municipalities could help ensure the achievement of national spending objectives. Nominal ceilings should be set for a specific multi-year period, rather than over an undefined business cycle. Reduce the cyclicality of local revenues in order to offset a secular tendency to spend-it-all by municipalities.
- An acceleration of the amalgamation process would help the implementation of subnational fiscal rules, as the small size of many municipalities prevents the adoption of innovation in public management as implementation costs are deemed excessive.

OECD ECONOMIC SURVEYS: ICELAND – ISBN 978-92-64-04298-8 – © OECD 2008

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ISBN 978-92-64-04298-8
OECD Economic Surveys: Iceland
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Chapter 4

Improving cost-effectiveness in the health-care sector

Health outcomes and the quality of health care are very good by international comparison, while income-related health inequality appears to be smaller than in most other countries. However, the health-care system is costly and, according to OECD estimates, public expenditure on health and long-term care could reach 15% of GDP by 2050 if no restraining measures are taken. This highlights the importance of raising cost-effectiveness and spending efficiency more generally. To this end, it would seem advisable to remove impediments to private provision and open up the health sector to competition. At the same time, the introduction of cost-sharing should be considered where it does not exist (as in hospitals), although concerns about equity need to be taken into account. This would relieve the burden on public finances, as would the introduction of spending ceilings, cost-efficiency analysis and activity-based funding arrangements. The high cost of pharmaceuticals should be reduced by promoting competition and the use of inexpensive generic drugs.

In the light of continued cost pressures and strains on public finances, health systems across the OECD are striving to increase value for money. Iceland is no exception. Since the country's health-care sector was reviewed fifteen years ago (OECD, 1993), health spending has risen further as a share of GDP, as in most other member countries. Although expenditure growth has moderated in recent years, the tendency over the longer term for demand to grow more than proportionally with income will make it increasingly difficult to finance the provision of health services without changing the system. This has prompted the new government that took office in May 2007 to launch or envisage a number of reforms. Following a brief overview of the Icelandic system, this chapter reviews health outcomes and costs as compared with those observed abroad with a view to identifying the most promising ways to enhance spending efficiency.

Overview of the health-care system

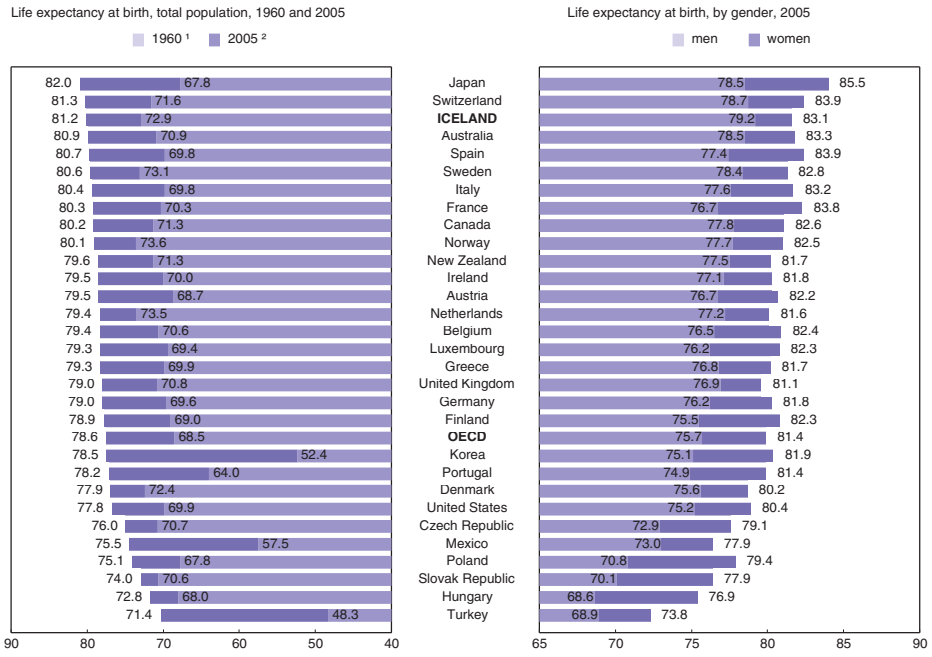
Like in the other Nordic countries, all residents are covered by public health insurance and health services are mainly paid by the public purse. Hospital treatment is free, although patients face limited co-payments for ambulatory care, most dental care and some pharmaceuticals. There are differences, however. In Iceland, health services are primarily financed by central government general taxation. Moreover, compared to other Nordic countries, the health-care system is much more centralised. Indeed, contrary to the trend in other public services (in particular, education), Iceland has seen increasing centralisation in the health-care sector in recent decades, with the state taking over responsibility for health-care centres and hospitals from local authorities and also private providers. This has involved an increase in the numbers of state-employed health-care personnel although, at the same time, some of the services have been contracted out (Halldorsson, 2003).

There is some degree of separation between financing and provision of services within the centralised system. According to the Ministry of Health, about one-quarter of all health services financed by the state is provided by private companies and NGOs. Still, most health-care personnel are employed by the state. Public health-care centres throughout the country, some of which are run jointly with municipal hospitals, are responsible for primary health services, including preventive care, and for home nursing care. Only in the capital Reykjavik are there a couple of private primary health-care centres and a few private general practitioners providing medical treatment under contracts with the State Social Security Institute (SSSI). Specialist treatment outside hospitals is delivered largely by private specialists under contract on a fee-for-service basis. But specialist services are also offered by the state hospitals. No referral is required for specialist treatment. Even though many nursing homes and old people's homes are run as independent institutions by municipalities or voluntary organisations, the major part of their financing is provided by the central government (either through the health-insurance or the pension-insurance scheme).

Outcomes by international comparison

Icelanders enjoy a good health status as measured by conventional indicators (such as life expectancy, number of disability-free years, self-reported health and quality of life). Life expectancy at birth is among the highest in the world (Figure 4.1). For men, it is the highest, while for women, who also held the first place some time ago; it is very close to the top. The gender gap in life expectancy is much smaller than generally elsewhere, probably reflecting in part the narrowing or disappearance of gender differences in many areas (for instance, labour-force participation, or smoking rates and hence lung-cancer incidence, see below). High life expectancy is attributable to the lowest overall cancer mortality rate in the OECD and below average mortality from stroke and heart disease. Perinatal and infant mortality are also the lowest, and maternal mortality is virtually non-existent. 80% of Icelandic adults report that they are in good health, about 10 percentage points more than on average in the OECD. Icelanders can expect to be healthy for about 90% of their lives (World Health Organisation, 2006). Health-adjusted life expectancy (HALE), which subtracts estimated years of life spent with illness and disability, is estimated to be the fourth-highest among OECD countries. Still, as in many other countries, the number of people with disabilities is a matter of concern. In Iceland, it has increased by half over the past decade or so, with 5% of men and 8% of women in the 16 to 66 years age bracket being on disability benefits in 2006. Disability is more common among women than men, except in the youngest age group. Mental and behavioural disorders are the most common causes of disability.

Figure 4.1. **Life expectancy at birth**

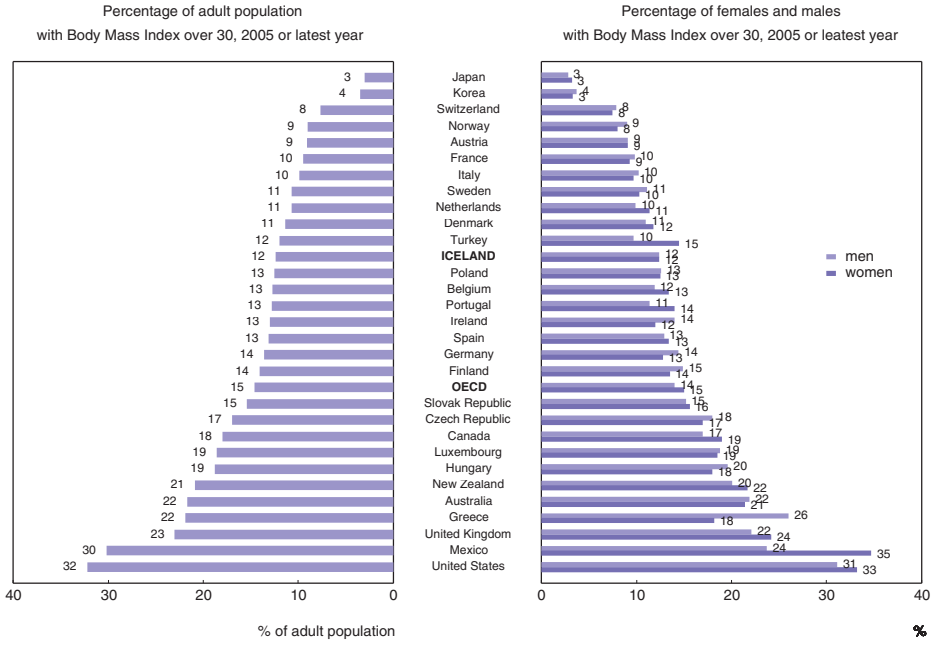


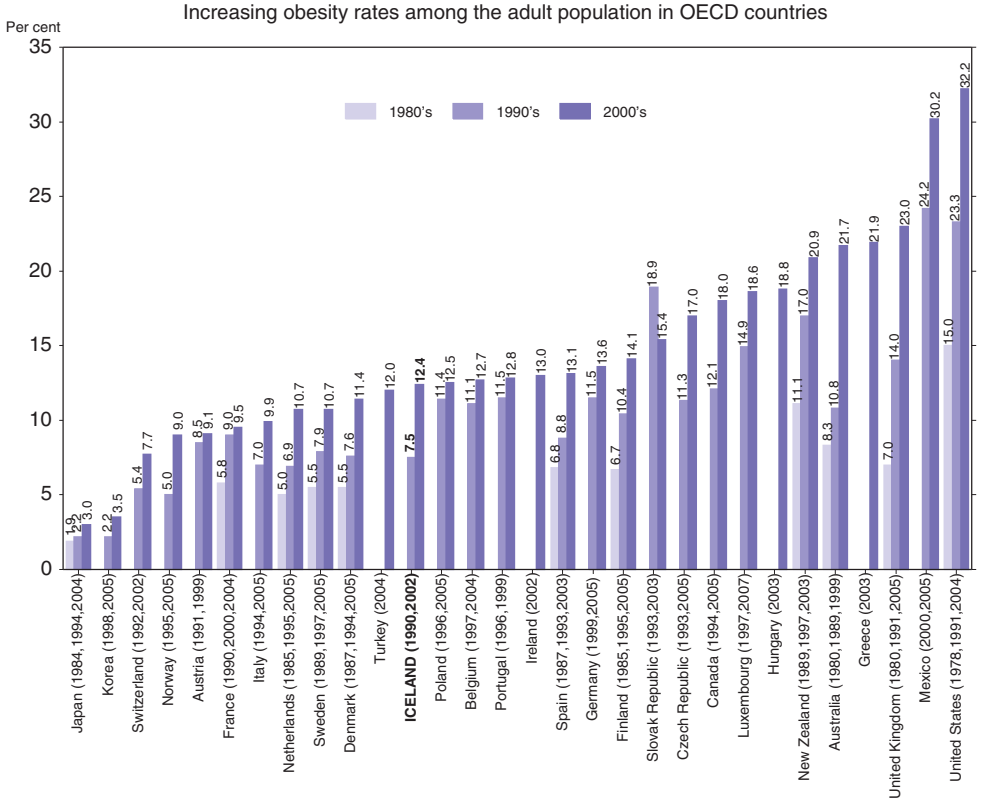
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1. 1961 for Canada and Italy
2. 2004 for Belgium, Canada and United States

Source: OECD Health Data 2007.

Figure 4.2. **Obesity**





StatLink http://dx.doi.org/10.1787/276708521362

Source: OECD Health Data 2007.

Lifestyle factors have in general developed in a way conducive to producing positive health outcomes. The nutritional value of food in Iceland has improved significantly and come close to official targets. The daily intake of fat has decreased, while consumption of fruit and vegetables has increased significantly. There is a clear social gradient, though, with those who have better education and higher incomes living on a healthier diet. On the negative side, the country's consumption of fish has diminished sharply, converging to the international average. Moreover, Icelanders have the doubtful honour of holding the world record in the consumption of sugar per capita. As a result, obesity is an increasing problem, especially among children, although it has remained distinctly below the OECD average (Figure 4.2). With Iceland being one of the most restrictive countries towards tobacco consumption, the number of regular smokers has declined noticeably. However, while the smoking rate is low by international comparison, Iceland is one of the few countries where there is practically no gender difference in smoking habits. Alcohol consumption used to be a major concern because of the habit of binge drinking of hard liquor, but drinking patterns have changed radically. While it has tended to rise, overall alcohol consumption is among the lowest in the OECD.

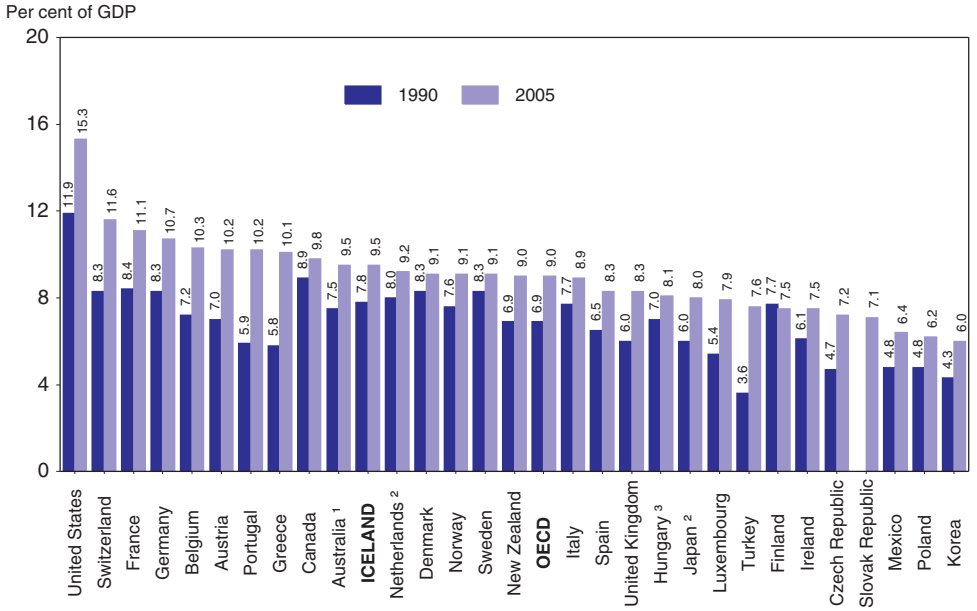
Socio-economic factors have an impact both on the lifestyle and on health outcomes. The centralisation of the medical system in Iceland is in part motivated by egalitarian views and an endeavour to restrain income-related inequalities in health. There is evidence to suggest that income influences an Icelander's health but to a smaller extent than reported for other countries (Asgeirsdottir, 2007). Interestingly, this relationship breaks down at higher income levels, perhaps indicating some adverse effects of very high income. There are, however, factors beyond political and social settings that might reduce variations in health that relate to income when compared to other countries. For instance, the Icelandic population is very homogeneous and relatively young (health inequality tends to increase with age).

Costs and financing

Iceland's health-care expenditure as a share of GDP is comparable to that of the other Scandinavian countries (Figure 4.3). Since the second half of the 1980s it has exceeded the OECD average. After surpassing the 10% mark in 2002-2003, the expenditure-to-GDP ratio has fallen back (to 9¼ per cent in 2006, according to national estimates), resulting in a narrowing of the positive gap *vis-à-vis* the OECD average where the ratio has continued to trend upwards (to 9% by 2005). In terms of per capita expenditure on health care (measured in GDP purchasing power parities), Iceland ranked sixth among OECD countries in 2005 (Figure 4.4). Per capita spending was 25% higher than in the OECD. Given Iceland's relatively low share of private health-care spending (around 17%), public per capita health-care expenditures were the fourth-highest in the OECD area in 2005 (behind Luxembourg, Norway and the United States). Iceland's ranking for per capita health-care spending broadly corresponds to that for GDP per capita. However, while there is an overall tendency for countries with a higher standard of living to spend more on health care, this relationship becomes looser with rising GDP per capita when other factors (such as institutional and policy settings as well as lifestyle and patient attitudes) are becoming more important (OECD, 2005b).

It is doubtful whether the recent deceleration in the growth of health-care spending (which is estimated to have increased by 1½ per cent *per annum* in real terms in 2003-2006) will persist. Health expenditure in Iceland has always been extremely volatile, with real

Figure 4.3. **Total expenditure on health as a share of GDP**

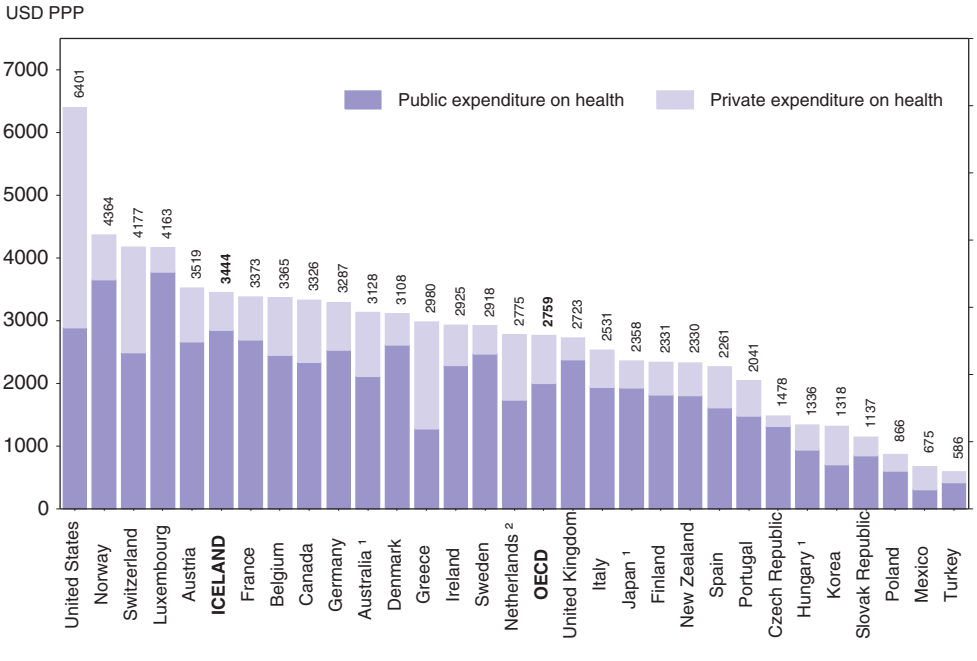


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1. Countries ranked from left to right, from highest to lowest health spending ratio in 2005.
2. 1990/91 and 2004/05.
3. 2004.
4. 1991 and 2004.

Source: OECD Health Data 2007.

Figure 4.4. **Health expenditure per capita, public and private, 2005**



StatLink http://dx.doi.org/10.1787/276734007472

1. 2004.
2. 2002.

Source: OECD Health Data 2007, Luxembourg: Inspection Générale de la Sécurité Sociale.

annual growth fluctuating significantly around a trend rate of about 5% since the 1980s. Slow growth during the budget consolidation period of the late 1980s and early 1990s was followed by an expenditure explosion. More recently, the surge and subsequent deceleration can to a large extent be traced to developments in the hospital sector which, at around 70% (including nursing care), accounts for an unusually high share of public health-care spending (Table 4.1). This reflects an over-reliance on institutional long-term care for the elderly (see below). While spending on curative medicine and rehabilitation in hospitals has decreased, this has been outweighed by rising expenditure on long-term nursing-home care.

Table 4.1. **General government expenditure on health care**

Per cent of GDP

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Medical products and equipment	0.78	0.86	0.81	0.75	0.81	0.87	0.85	0.74	0.73
Outpatient services	1.15	1.25	1.35	1.36	1.42	1.52	1.51	1.34	1.42
Hospital services	5.01	5.54	5.29	5.23	5.79	5.82	5.65	5.47	5.35
Public health services	0.04	0.05	0.05	0.04	0.05	0.05	0.05	0.05	0.04
Other	0.17	0.20	0.20	0.18	0.25	0.25	0.20	0.21	0.18
TOTAL	7.16	7.91	7.70	7.56	8.32	8.52	8.25	7.91	7.72
Memorandum items:									
National health expenditure	8.78	9.49	9.36	9.21	10.02	10.28	9.98	9.54	9.24
Public health expenditure at fixed prices[1] (1998=100)	100.0	109.5	110.6	113.3	120.6	122.4	125.7	126.6	129.5

1. Deflated by the government consumption deflator.
Source: Statistics Iceland.

Hospitals and nursing homes

About one-third of all public health-care spending goes to the state-owned Landspitali University Hospital in Reykjavik. This large institution was created in 1999/2000 by a merger of the state hospital in the capital with the municipal hospital, which, in turn, had taken over the only existing private hospital in 1996. This move was expected to increase cost-effectiveness through economies of scale and reduced duplication of services while, at the same time, enhancing the quality of provision. Many saw it as an opportunity to strengthen medical specialities and promote the institution's role as a university hospital. However, the merger, which remains controversial, was also strongly criticised for creating a managerially unwieldy institution and substantially reducing competition (expenditure on all the other hospitals together is only about half that for the merged hospital, although this broadly corresponds to the population catchment area for the hospital taking account of the fact that, as signalled below, many of its activities are all Iceland ones). The initial results of the merger were alarming indeed (National Audit Office, 2003 and Sigurgeirsdottir, 2006). From 1999 to 2002, the expenditures of the merged hospitals increased by 37%, 20% in excess of inflation, and the deficit of the combined institutions more than quadrupled. The National Audit Office found that administrative costs and the headcount were significantly higher than in other countries and concluded that the merger had not been "sufficiently well planned". In the wake of the National Audit Office's report, the management of Landspitali announced a downsizing in early 2004 and there are signs that the merger has finally accomplished economies of scale (National Audit Office, 2005). There are indications of productivity gains, while quality measures remain quite

favourable by international comparison. Since 2003, the expenditures of the merged hospitals have grown less than those of other ones, although they continue to exceed budget allocations. On the positive side, despite the more recent cost-cutting measures, waiting lists are still much shorter than before the merger. It should also be taken into account that the smallest hospitals in the country have abandoned surgical activity altogether and that, for instance, the bulk of deliveries now take place in Reykjavik. As a result, the number of treatments in Landspitali has grown much faster than the population in the capital area.

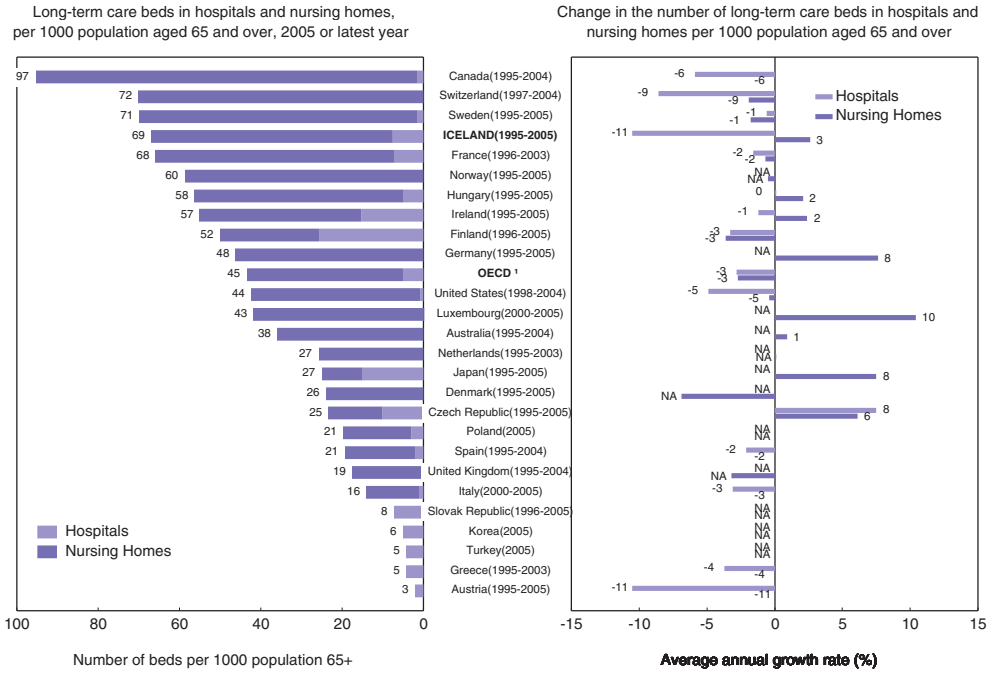
The surge in health-care expenditure in the early part of the decade was not only the result of the hospital merger in the capital. An official report (National Audit Office, 2004a) found that during that period payroll costs in rural hospitals and primary care centres increased by about double the rate recorded by the national wage index. The report traced this to three factors: centrally bargained agreements raising salaries for health workers; substantial wage drift following the transfer of human resource responsibilities to directors of individual institutions; and, associated with that, a substantial increase in the number of employed staff. Still, the cost of other hospitals rose significantly less than that in the capital in the early 2000s, suggesting that problems related to the hospital merger there have added to wage pressures.

Nursing homes account for a large and increasing share of total hospital spending (about 30%, up from around 20% ten years ago). As general hospitals have reduced places for long-term care in order to rein in costs, the authorities have strongly promoted the expansion of nursing homes. As a result, overall nursing-care capacity has actually increased and spending on nursing homes has approached 20% of public health-care expenditure. Only a few OECD countries have a higher share of spending on long-term care. This is surprising in the light of favourable demographics: despite the high life expectancy, the proportion of people aged 65 and over is comparable to Ireland and significantly lower only in Turkey. But for this age group, the number of long-term care beds per capita is the fourth-highest in the OECD area (Figure 4.5). In hospitals, the number of long-term care beds has been brought down almost to the OECD average, but the bed capacity of nursing homes relative to the elderly population exceeds the OECD benchmark by one half. This reflects insufficient recourse to home health care and the lack of intermediate solutions (such as apartments for the elderly near nursing homes). While high female labour-force participation in Iceland may play a role, countries with similar activity rates have in fact vastly different provisions of institutionalised long-term care. In principle, a nursing home pre-admission assessment is now mandated by law and this seems to have contributed to some decline in the mean length of stay. But the fact that no waiting lists usually exist outside Reykjavik points to some overcapacities.

Pharmaceuticals

Pharmaceutical expenditure has remained relatively stable in relation to GDP. It accounts for a substantial part of non-government health-care spending: at around ½ per cent of GDP, almost half of pharmaceutical expenditure is private (in the form of out-of-pocket payments). In real terms, the growth in spending on drugs has not been exceptional and slowed recently like overall health-care expenditure. The major concern is the high level of pharmaceutical prices in Iceland, which means that – despite the relatively low use of prescription drugs associated with a young population – per capita spending on pharmaceuticals is considerably above that in the other Nordic countries and on average in

Figure 4.5. **Long term care beds**



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1. The average OECD average excludes all countries that have not supplied complete data.

Source: OECD Health Data 2007.

the OECD. An official report (National Audit Office, 2004b) found that in 2003 people in Iceland paid on average 46% more for medicines than people in Denmark and Norway (although in regulating wholesale prices, the Icelandic authorities have customarily based their decisions on prices in the other Nordic countries). The report concluded that this difference was explained mainly by two factors. First, Icelanders use more expensive generic drugs than Danes and Norwegians, who have substantially increased consumption of low-cost generic drugs in recent years. Second, sales and distribution costs for pharmaceuticals are higher in Iceland, owing to, among other things, the small size of the Icelandic market, limited turnover for many drugs, the cost of adhering to national language labelling requirements and a proportionately high number of pharmacies. While the pharmaceutical market was liberalised in the 1990s, competition is limited by the fact that it is dominated by a few companies (both at the wholesale and retail sale levels). The above report made a number of detailed recommendations, but only a few have been implemented (Box 4.1). In particular, not much has been done to strengthen incentives for the supply of cheaper drugs (for instance, by changing cost sharing or introducing competitive bidding for government purchases of drugs).

A recent follow-up study by the National Audit Office concluded that there have been mixed results in governmental efforts to lower pharmaceutical costs since 2004. On the positive side, negotiations with pharmaceutical manufacturers and importers managed to persuade them to reduce prices on most brand name and some generic drugs. As a result, wholesale prices of original pharmaceuticals are now more in line with those in other Nordic countries. On the other hand, little progress has been made in introducing low-cost

Box 4.1. **National Audit Office recommendations on pharmaceuticals**

Drug prices and cost sharing

- The state's share of drug costs should be based on the lowest price of generic drugs in other Nordic countries.
- Patients' reimbursement of drug costs should be based on volume purchased, with a fixed amount per package (currently patients pay a fixed fee plus a percentage of the remaining amount up to a ceiling).
- Drug prices in other Nordic countries should be carefully monitored and whenever changes occur the allowed maximum price should be adjusted accordingly.
- The margin rate on drugs should be revised in order to motivate supply of cheaper drugs.
- Retail prices of drugs should be monitored and published on a regular basis.
- The drug retail market should be investigated with respect to efficiency and the possibility of reducing the number of retail drugstores. (Implemented).
- Public administration of drugs should be restructured to reduce the number of government bodies. (Implemented).

Drug market and supply

- Health authorities should seek exemptions from EU rules (to which Iceland is subject as member of the EEA) that stipulate that instructions in Icelandic shall be included in every drug package.
- Competitive bidding should be implemented for all government purchases of drugs.

Drug use

- Public authorities should provide better and more accessible information about drugs to professionals (Implemented).
- Methods for collecting drugs statistics should be coordinated and publication improved.
- Hospitals and other health institutions should be obliged to use drug lists. Their use of such lists should be monitored to ensure use of the cheapest drug for every case.
- Research on drug use should be increased. Special efforts should be made to explain the increasing gap between Iceland and other Nordic countries in the use of neural and psychiatric drugs (Implemented).

generic drugs to the market and to lower retail margins of pharmacies. Wholesale prices of generics are still higher than in other Nordic countries and the retail price of medicines generally exceeds that abroad because of high mark-ups of pharmacies. One reason for this situation is that the widespread practice of pharmacies to offer rebates to patients for the purchase of brand name drugs effectively crowds out inexpensive generics.

Long-term outlook

Even though health-care spending has slowed recently, there are reasons to believe that it will put strong pressure on public budgets in the longer run. Advances in medical techniques and treatments are likely to continue and they do not come free of economic cost. Technical progress can be cost-saving, but it also tends to raise demand by increasing the variety and quality of products and services. In addition, demographic factors, which so far have had a negligible effect on the growth in health-care expenditure in Iceland, will

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become less favourable. Health-care spending is high both for children and old people. Over the past 50 years or so, the impact of a falling share of children in the population has almost offset that of a moderately rising share of old people. Over the next half century, however, the share of the population aged 65 and over in Iceland is projected to double, as in the OECD as a whole, though from a lower level.

Against this backdrop, long-term projections of health-care expenditure in Iceland present a bleak picture (Oliveira Martins and Maisonneuve, 2006). They suggest that, in the absence of reforms, public spending could exceed 15% of GDP by 2050 and be the highest in the OECD (Table 4.2). Nearly half of the increase of about 5½ percentage points is attributable to the rising cost of long-term care. To be sure, uncertainties surrounding such projections are substantial and they should be considered as indicative. It has also been pointed out that public health expenditure in the base year 2005 has turned out to be lower than estimated at the time the projections were done. However, as suggested above, the

Table 4.2. **Projections for public health and long-term care spending**

In % of GDP

	Health care			Long term care			Total		
	2005	2050		2005	2050		2005	2050	
		Cost-pressure	Cost-containment		Cost-pressure	Cost-containment		Cost-pressure	Cost-containment
Australia	5.6	9.7	7.9	0.9	2.9	2.0	6.5	12.6	9.9
Austria	3.8	7.6	5.7	1.3	3.3	2.5	5.1	10.9	8.2
Belgium	5.7	9.0	7.2	1.5	3.4	2.6	7.2	12.4	9.8
Canada	6.2	10.2	8.4	1.2	3.2	2.4	7.3	13.5	10.8
Czech Republic	7.0	11.2	9.4	0.4	2.0	1.3	7.4	13.2	10.7
Denmark	5.3	8.8	7.0	2.6	4.1	3.3	7.9	12.9	10.3
Finland	3.4	7.0	5.2	2.9	5.2	4.2	6.2	12.2	9.3
France	7.0	10.6	8.7	1.1	2.8	2.0	8.1	13.4	10.8
Germany	7.8	11.4	9.6	1.0	2.9	2.2	8.8	14.3	11.8
Greece	4.9	8.7	6.9	0.2	2.8	2.0	5.0	11.6	8.9
Hungary	6.7	10.3	8.5	0.3	2.4	1.0	7.0	12.6	9.5
Iceland	**6.8**	**10.7**	**8.9**	**2.9**	**4.4**	**3.4**	**9.6**	**15.2**	**12.3**
Ireland	5.9	10.0	8.2	0.7	4.6	3.2	6.7	14.5	11.3
Italy	6.0	9.7	7.9	0.6	3.5	2.8	6.6	13.2	10.7
Japan	6.0	10.3	8.5	0.9	3.1	2.4	6.9	13.4	10.9
Korea	3.0	7.8	6.0	0.3	4.1	3.1	3.3	11.9	9.1
Luxembourg	6.1	9.9	8.0	0.7	3.8	2.6	6.8	13.7	10.6
Mexico	3.0	7.5	5.7	0.1	4.2	3.0	3.1	11.7	8.7
Netherlands	5.1	8.9	7.0	1.7	3.7	2.9	6.8	12.5	9.9
New Zealand	6.0	10.1	8.3	0.5	2.4	1.7	6.4	12.6	10.0
Norway	7.3	10.7	8.9	2.6	4.3	3.5	9.9	15.0	12.4
Poland	4.4	8.5	6.7	0.5	3.7	1.8	4.9	12.2	8.5
Portugal	6.7	10.9	9.1	0.2	2.2	1.3	6.9	13.1	10.4
Slovak Republic	5.1	9.7	7.9	0.3	2.6	1.5	5.4	12.3	9.4
Spain	5.5	9.6	7.8	0.2	2.6	1.9	5.6	12.1	9.6
Sweden	5.3	8.5	6.7	3.3	4.3	3.4	8.6	12.9	10.1
Switzerland	6.2	9.6	7.8	1.2	2.6	1.9	7.4	12.3	9.7
Turkey	5.9	9.9	8.1	0.1	1.8	0.8	6.0	11.7	8.9
United Kingdom	6.1	9.7	7.9	1.1	3.0	2.1	7.2	12.7	10.0
United States	6.3	9.7	7.9	0.9	2.7	1.8	7.2	12.4	9.7
Average	*5.7*	*9.6*	*7.7*	*1.1*	*3.3*	*2.4*	*6.7*	*12.8*	*10.1*

Source: Oliveira Martins and Maisonneuve (2006).

slowdown in spending in the middle of the decade may be an aberration, or it could diminish following data revisions. In any case, the projected rise in spending is worrying enough, and in this respect the projections are based on rather optimistic assumptions. First, it is assumed that longevity gains are translated into equivalent additional years in good health ("healthy ageing"). If this is not the case, spending could be up to 1 percentage point of GDP higher. Second, the income elasticity of health-care expenditure is assumed to be unity. An elasticity of 1.2, which is more in line with historical experience in Iceland, would increase spending by more than 1 percentage point of GDP. Not all the risks are on the upside, but it would seem to be prudent to react in time to these potential cost pressures.

The above study also presents a "cost-containment scenario" to explore what policies could achieve in controlling expenditure growth driven by some of the non-demographic factors, for instance by ensuring that future technology improvements are mainly used in a cost saving way. Under this scenario, Iceland could reduce the projected rise in the public health-care expenditure-to-GDP ratio by half. This is more than OECD countries on average can expect to achieve by ensuring that, abstracting from ageing effects, public health-care expenditure evolves broadly in line with income over the very long run. Continuous cost-containment over such a long period would be unprecedented and rather challenging. Thus, it is all the more important to improve the cost-effectiveness of health care in Iceland, which seems to be lacking, in order to be better prepared for the unavoidable long-term pressures due to population ageing.

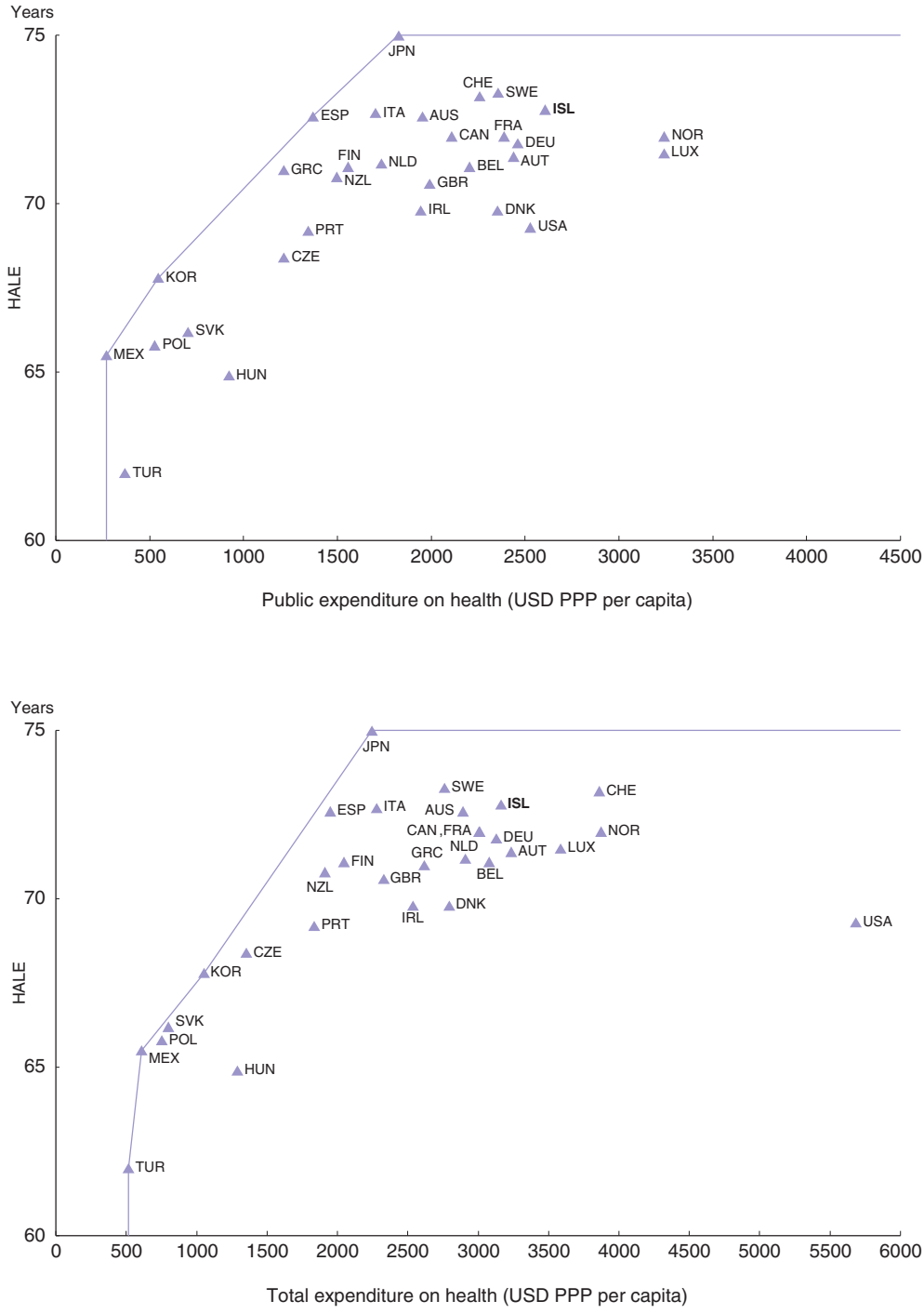
Spending efficiency

Efficiency analysis aims to assess whether and to what extent expenditures are higher than needed to achieve prevailing health outcomes. However, health-care outcomes are difficult to measure and country rankings may differ significantly when moving from one indicator to another (Häkinnen and Joumard, 2007). For instance, Iceland is doing even better in terms of infant and maternal mortality than with respect to overall life expectancy. Moreover, as noted, the health status of the population is heavily influenced by environmental factors (including life styles). Still, partial evidence and work in progress suggest that there is significant scope for improving spending efficiency in Iceland.

One technique often used to gauge the efficiency of government spending is Data Envelopment Analysis (DEA). The countries that provide the best combination of inputs and outputs define the best practice frontier. Countries that are not on the frontier are ranked according to their distance from the frontier, which is a measure of relative efficiency. For example, there are a number of countries that achieve a level of health-adjusted life expectancy (HALE) similar to Iceland's at lower level of public health-care spending per capita (Figure 4.6). First estimates based on this technique (OECD, 2007b) suggested that Iceland could reduce spending by one-third without compromising outcomes. However, preliminary results of further work, which takes into account a wide range of health determinants, rather point to more limited potential cost-savings in the health-care sector, closer to earlier estimates for the whole public sector (Afonso *et al.*, 2005). At the same time, they indicate that, probably reflecting declining returns to scale, every further health gain may come at a very high price.

Similar estimates of technical efficiency suggest that prevailing health outcomes could be realised with a considerably lower number of human resources. The sparseness of

Figure 4.6. **Spending to outcome frontier, 2003**
Health-adjusted life expectancy (HALE)

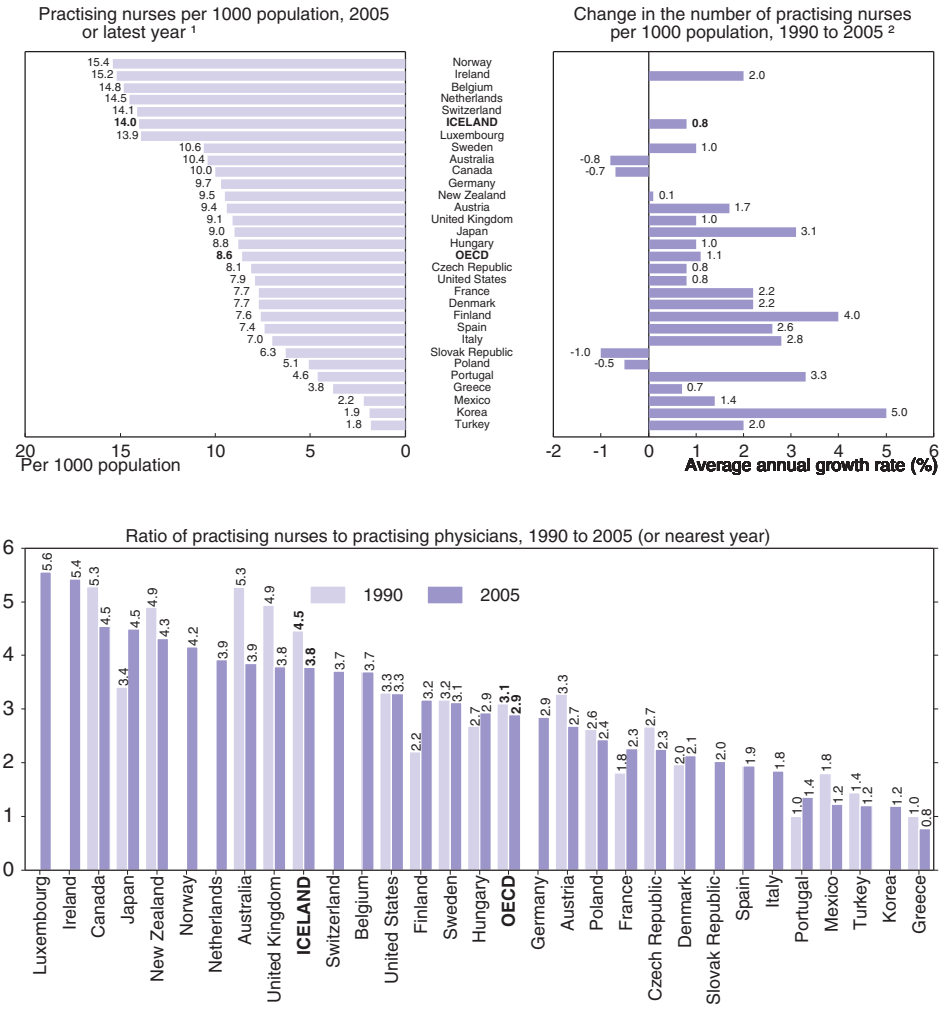


StatLink http://dx.doi.org/10.1787/276753308568

Source: OECD Health Data 2007, Luxembourg: Inspection Générale de la Sécurité Sociale.

the rural population may necessitate a somewhat higher number of health-care workers. Still, despite persistent complaints about a lack of nurses, relative to Iceland's population their number is about two-thirds higher than on average in the OECD (Figure 4.7). This is the more surprising given Iceland's relatively young population, although in part, it might reflect more prevalent part-time work than generally abroad along with the fact that not all nurses are classified as such in some other countries. While the nurse/doctor ratio has declined somewhat like in the majority of OECD countries, it has remained high in Iceland by international comparison. The growth in the number of physicians relative to the population has slowed but remained faster than generally abroad, so that physician density has moved further ahead of the OECD average (Figure 4.8). While general practitioner density is not unusual, that of specialists is high. This could be a matter of

Figure 4.7. **Nurses**

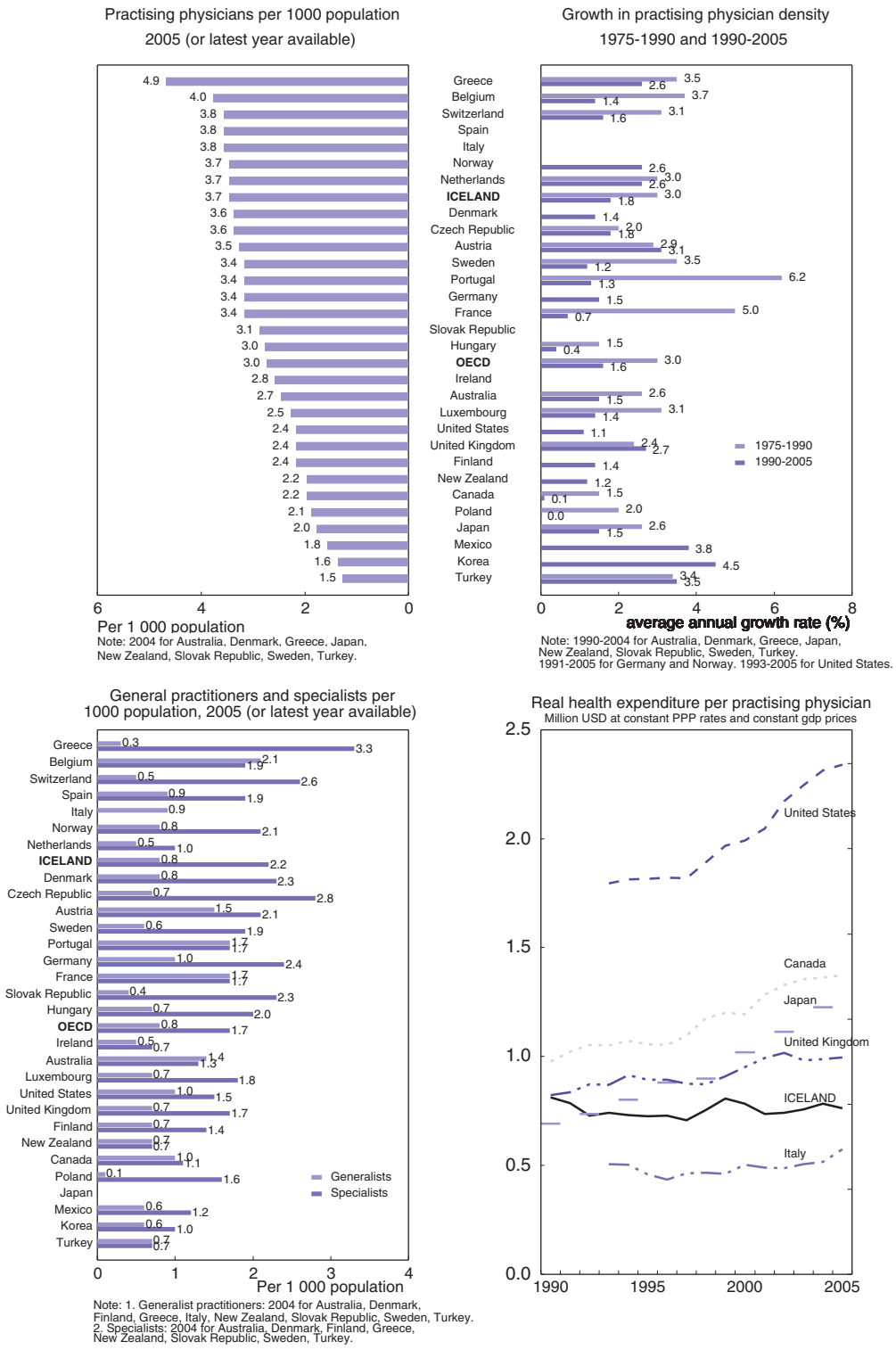


StatLink http://dx.doi.org/10.1787/276755543105

1. 2004 for Australia, Denmark, Finland, Greece, Japan, New Zealand, Slovak Republic, Sweden, Switzerland and Turkey. 2002 for United States.
2. 1990-2004 for Australia, Denmark, Finland, Greece, Japan, New Zealand, Sweden and Turkey. 1990-2002 for United States. 1993-2005 for Italy. 1994-2005 for Korea. 1994-2004 for Slovak Republic. 1995-2005 for Spain.

Source: OECD Health Data 2007.

Figure 4.8. **Physicians**



StatLink http://dx.doi.org/10.1787/276757872478

Source: OECD Health Data 2007.

concern because physicians, especially when they are paid by fee-for service, can induce demand for medical care. However, real health-care spending per doctor has remained relatively stable. In any case, there does not seem to be a significant relationship between physician density and health outcomes (OECD, 2007b), with Japan, for instance, achieving a similar life expectancy at about half of Iceland's physician density.

An analysis of hospital performance in selected OECD countries (Erlandsen, 2008) suggests that there is considerable scope for reaping efficiency gains. The study compares unit costs for seven hospital interventions for which clinical procedures are fairly standardized across countries. The specific definitions of the intervention are based on the system of Diagnosis Related Groups (DRGs), for which data have been collected in Iceland even though they have not yet been used as a benchmark for hospital financing. The potential for cost-savings is measured by using the unit costs of the best-performing country as a benchmark. For Iceland, the savings are estimated to be more than one-third on average, which is less than in many other countries covered by the study but much higher than, for instance, in Finland, Denmark and the United Kingdom (Table 4.3). Although the results of the above study have been called in question, they are in line with those of another study (National Audit Office, 2005) that found that the average cost per bed in Iceland's major hospital was substantially higher than at UK hospitals, due both to higher salaries and longer in-patient times. However, apart from the considerable margin of error attached to such estimates, superior cost performance can come at the cost of low-quality services. Iceland, for instance, has the highest survival rates for breast cancer and very low in-hospital case-fatality rates more generally (OECD, 2007a), while service quality in the United Kingdom, the country with the second-best cost performance in the above study, is clearly inferior in most of these respects (an exception being stroke-related fatality). On the other hand, in Denmark, the country with the best cost performance among the countries covered, service quality in these terms is not far behind that in Iceland in many instances. This suggests that the relationship between potential cost savings and quality is rather tenuous and, while care should be taken not to impair the high quality of services, there is substantial scope for raising cost efficiency in the Icelandic hospital sector.

Table 4.3. **Potential for hospital cost reductions**[1]

Per cent, 2006

Australia	42
Denmark	5
Finland	13
France	44
Germany	32
Iceland	38
Norway	34
Sweden	42
United Kingdom	12
United States	48

1. Based on cross-country comparisons of hospital unit costs for seven DRGs, with lowest unit costs used as a benchmark.

Source: Erlandsen (2008).

Spending efficiency is associated with a wide range of factors. Cross-country analysis suggests that a number of policy-related factors play a significant role and therefore merit

attention (Verhoeven *et al.*, 2007a). System efficiency is negatively correlated with the number of doctors' consultations and in-patient care admissions. A likely reason for that is that the number of doctor and hospital visits drives up the number of prescriptions for pharmaceuticals and medical tests. Indeed, higher spending on pharmaceuticals is associated with lower system efficiency, as it crowds out other, potentially more efficient, resources. Finally, countries with higher out-of-pocket health spending by patients appear more efficient, although there is a risk of increased inequality and delayed visits to providers.

Whether the centralisation of the Icelandic health-care system is conducive to spending efficiency remains to be seen (its potential impact is summarized in Box 4.2). Iceland is now the outlier in this respect among Nordic countries, with Finland having the most decentralised system (OECD, 2005a). It delegates the financing and governance of all main health and social services to the municipalities. Nonetheless, it has managed to control health-care expenditure better than most other OECD countries (although recent labour conflicts suggest that cost control is becoming more difficult). At the same time, the health status of its population, while not as good as in Iceland, is above average. It is true,

Box 4.2. **Centralisation and efficiency**

In theory there will be both advantages and disadvantages of decentralised governance of publicly-funded health and social services (Levaggi and Smith, 2005). Centralisation reduces potential problems with taxation capacity, purchasing power, diseconomies of scale, lack of expertise, conflicts of interest and a lack of national transparency. On the other hand, decentralization strengthens local democracy and ownership of publicly funded health services, though possibly at the cost of national equity in treatment according to need.

Raising funds. Centralisation avoids problems with variations in taxable capacity between municipalities and reduces administrative costs, but the possibility for local communities to exercise preferences over tax rates might encourage fiscal discipline.

Spending funds. Centralisation in principle implies more purchasing power and expertise and less conflicts of interest between serving patients and providing local employment and activity (especially in relation to public-sector providers). Decentralisation allows local communities to set their own priorities, and there can be local innovation in methods of purchasing services.

Providing services. Centralisation permits the use of economies of scale (at least for hospital care) and of management expertise. In a decentralised system, production can be tailored to demand using local knowledge and there can be local innovation in methods of provision.

Gathering and using information. Centralisation has clear advantages in this respect, ensuring common definitions and standards, national data collection, national transparency and comparability while reducing barriers to the diffusion of some innovations, although sometimes less information may be required if the use is only local.

For the advantages of centralisation to outweigh disadvantages, they must be realised, however. According to the National Audit Office, in Iceland even the central authorities often do not have the expertise to use their purchasing power and to properly design and monitor service contracts. Also, much still needs to be done with regard to gathering and using information.

however, that steps have been taken in Finland to avoid or mitigate the potential adverse effects of decentralisation on efficiency (such as obligatory co-operation in the management of services, guidelines for delivery of some services and considerable centralisation of the gathering and use of information). Moreover, there is evidence that moving the responsibility for managing hospitals from the sub-national to the central government level in Norway, where hospitals were less efficient than in Finland, has spurred technical efficiency, although disentangling the effects of that move from those of the simultaneous reform of hospital financing in Norway is difficult (Magnussen *et al.*, 2007). Other Scandinavian countries have also moved in that direction (with Denmark, for instance, drastically merging hospital regions).

Government policies

A new long-term health plan was adopted by Parliament in 2001 (Ministry of Health, 2004). Previous plans had not been as successful as expected, possibly because of the lack of any benchmarking or quantitative measurement of target achievement during the implementation period. Among other things, the new plan emphasises prevention in the field of tobacco, alcohol and drug use, accidents, cancer and cardiovascular and brain diseases. It sets quantitative targets for all these areas that are to be achieved by 2010 and calls for regular reporting on progress made towards them. The priorities are based on a cost/benefit analysis that estimated the societal costs and expected gains from remedial action. The plan also sets targets for the maximum waiting time for treatment, given long waiting lists in certain specialties. With respect to the funding of health services, the plan states that public spending will not fall below the growth of national income.

At about the same time, the centralisation of health-care services was accomplished with the elimination of regional health councils and transfer of their responsibilities to the Directorate of Health. Local steering committees of the health-care centres and hospitals, except for the Reykjavik University Hospital (Landspitali), were abolished and the executive directors of health institutions acquired more authority (for instance for the recruitment of doctors and other personnel). The negotiation of the payment of health-care professionals was also centralised (up to 2001, different state committees dealt with outpatient work in hospitals, the price and volume of services offered by private specialists, and the salaries of hospital employees). Better coordination and prioritisation should in principle make it possible to both curb spending and increase its efficiency. However, among other things, this would require an evaluation of the cost-efficiency of alternative kinds of provision, which is still lacking. Moreover, opposition to change by vested interests is strong and limits the effects of institutional reforms. It has also frustrated efforts to re-introduce "gate-keeping" by generalists that had been abandoned in the 1980s.

As described before, a major reform in the earlier part of the decade, with radical consequences for the health-care sector, was the merger of the hospitals in Reykjavik. This trend has continued. In 2006, the administration of all primary health-care centres in the capital area was merged. Moreover, a register of primary health-care data was established at the Directorate of Health. All data from primary health-care centres are collected electronically in accordance with a defined minimum data set. Other initiatives by the previous government were rather of a shop-keeping nature. A new Act on Health Services became effective in September 2007, replacing the Act from 1990. It clarified the basic organisation of the public health services and strengthens the right of health authorities to

enter into agreements with others to undertake health services. At the same time, an Act defining the responsibilities of the Medical Director of Health came into force.

The new government that took office in May 2007 announced a number of health-care reforms (Prime Minister's Office, 2007a). A cost analysis of health-care services would finally be carried out. Hybrid funding arrangements would be introduced for health-care institutions, whereby funding would be earmarked for individual patients with a view to better aligning it with the need for and volume of work. Scope would be created for more diverse operational formats in health-care provision, including tenders and service contracts. The emphasis would be on offering a wider choice to ensure that the best possible service is delivered for the allocated funds. Moreover, new ways of reducing medication costs and the public participation in payment for them would be explored. More recently, in his Policy Address, the Prime Minister stated more precisely that measures would be taken to open the Icelandic pharmaceuticals market in order to boost competition and thereby increase supply and lower prices of medication (Prime Minister's Office, 2007b). He also announced a restructuring of the health and social security system from the beginning of 2008 to give the state a more effective role as a buyer *vis-à-vis* health service providers. In particular, the administration of pension and welfare benefits, for which the Ministry of Health has also been responsible, would be transferred to another ministry. These initiatives are useful steps forward but it should be possible over time to make more fundamental welfare-enhancing changes to the system.

Concluding remarks

The health status of the Icelandic population is enviable. The quality of services is also first class in most respects. Still, this is achieved at a high cost. Although Iceland is a rich country and can afford to spend a lot on health care, public per capita expenditure on health care exceeds the OECD benchmark by around 40% while Iceland's GDP per capita betters the OECD average only by about a quarter. It is true that this large differential reflects a low share of private financing, but there is evidence to suggest that the prevailing excellent health status of the Icelandic population could be achieved at lower levels of expenditure. Although the geography and population distribution of the country probably justifies an above average share of health-care workers, staffing ratios seem excessive by international comparison. The mix of resources devoted to health care could be improved, given the high share of expensive hospital care by international comparison and a reliance on institutionalised long-term care that is at variance with Iceland's young population. What is clearly needed is a prioritisation of public health-care spending based on a cost-benefit analysis of different kinds of services.

The centralisation of the health-care system could in principle be beneficial for a small country like Iceland, although it has some drawbacks. Much will depend on whether the central authorities make use of the scope provided by a high degree of centralisation to increase efficiency, for instance by using their power as the main buyer of health services to reduce costs (both by putting downward pressure on prices and shifting care to less expensive services). To the extent that services are sourced out to the private sector – and there is indeed scope for increasing private provision – the authorities need to have the necessary expertise and resources to design appropriate service contracts and monitor the outcomes. To avoid that increased consumer choice overly stimulates demand for services, cost-sharing should be introduced where it does not exist and reformed where it does not provide sufficient incentives for cost savings. International experience shows that user

fees can relieve public financing systems, even though vulnerable populations must be exempted and negative effects on preventive care avoided (OECD, 2004). Aside from the effect of out-of-pocket payments, the share of private spending does not have an impact on efficiency in health care (Verhoeven *et al.*, 2007b). This may reflect adverse selection issues related to private health insurance and incentives for insured persons to over-consume health services. Moreover, subsidies are often needed to encourage purchase of insurance. Hence, it is not clear whether more reliance on private insurance which in principle is possible in Iceland, would have significant effects on public spending, although the result of reforms abroad, such as in the Netherlands, should be closely monitored. On the other hand, the implementation of activity-based funding in hospitals, which account for a high share of health-care spending in Iceland, should be accelerated. Within robust regulatory framework, output-related prospective payment systems can encourage providers to minimise costs without hurting patient care if associated prices are set correctly and there is appropriate control of quality (Docteur and Oxley, 2003). Recommendations along these lines are presented in Box 4.3.

Box 4.3. **Recommendations on health care**

- Facilitate private provision, which currently accounts for only one quarter of publicly financed health services, and open up the sector to competition so as to enhance efficiency.
- In contracting out public services, make sure that agreements contain detailed requirements regarding the quantity and minimum quality of service and that the authorities involved have the necessary skills and expertise to draw up such contracts and monitor service delivery.
- Consider more reliance on co-payments (or at least their introduction in hospitals) so as to avoid that, combined with no, or very low, cost-sharing, increased private provision leads to overconsumption. This would also relieve the pressure on public finances.
- Strengthen the government's role as a "buyer" of health services, establishing ceilings on public spending, speeding up cost-efficiency analysis of major services and introducing activity-based funding arrangements that reward productivity.
- Consider the re-introduction of "gate-keeping", with general practitioners or nurses assessing the need for treatment and directing patients to the most appropriate level of care.
- Given their increased responsibilities, make sure that directors of health-care institutions, especially smaller ones, have the necessary management skills and information to control personnel and other costs.
- Further reduce reliance on costly hospital care, which is high by international comparison, by eliminating excess hospital beds and promoting home care rather than nursing homes (or intermediate solutions).
- Reduce the high cost of pharmaceuticals by promoting competition and the use of generic drugs. In particular, competitive bidding should be introduced for all government purchases of drugs and cost sharing should be modified so as to provide incentives for the supply and purchase of cheaper drugs.

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OECD PUBLICATIONS, 2, rue André-Pascal, 75775 PARIS CEDEX 16
PRINTED IN FRANCE
(10 2008 03 1 P) ISBN 978-92-64-04298-8 – No. 56043 2008

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Volume 2008/3
February 2008

ISSN 0376-6438
2008 SUBSCRIPTION
(18 ISSUES)

OECD*publishing*
www.oecd.org/publishing

ISBN 978-92-64-04298-8
10 2008 03 1 P

