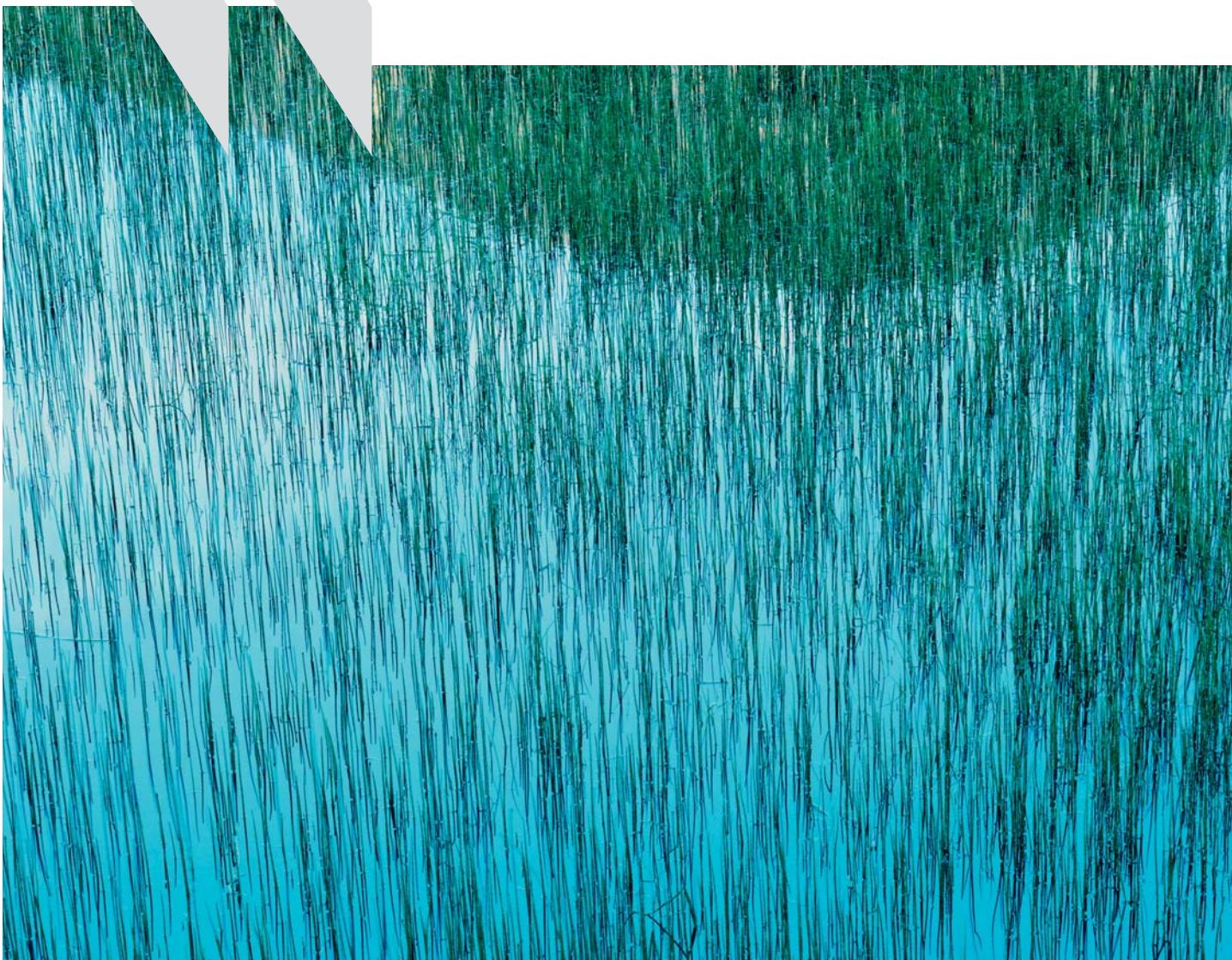




**OECD Economic Surveys**

**ICELAND**





**OECD  
Economic Surveys**

**Iceland**

**2009**



# ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where the governments of 30 democracies work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The Commission of the European Communities takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

*Also available in French*

Cover illustration: © Pat O'Hara/The Image Bank/Getty Images.

Corrigenda to OECD publications may be found on line at: [www.oecd.org/publishing/corrigenda](http://www.oecd.org/publishing/corrigenda).

© OECD 2009

---

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to [rights@oecd.org](mailto:rights@oecd.org). Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at [info@copyright.com](mailto:info@copyright.com) or the Centre français d'exploitation du droit de copie (CFC) at [contact@cfcopies.com](mailto:contact@cfcopies.com).

---

## Table of contents

<b>Executive summary</b> .....	8
<b>Assessment and recommendations</b> .....	9
<b>Chapter 1. The financial and economic crisis</b> .....	17
Iceland's three main banks became vulnerable to a deterioration in global financial markets .....	19
Private sector balance sheets became vulnerable after rapid expansion .....	25
An unsustainable, domestic-demand led economic boom developed .....	33
The banks were unable to resist the deterioration in global financial markets. . . .	44
Aftermath of the collapse of Iceland's main banks .....	47
Prudential supervision and regulation need to be strengthened .....	52
Notes .....	57
Bibliography .....	58
Annex 1.A1. Progress in structural reform .....	59
<b>Chapter 2. Challenging times for monetary and fiscal policies</b> .....	61
The limits of monetary policy in a very small open economy .....	62
The future of monetary policy .....	68
Substantial fiscal consolidation measures are urgently needed .....	83
Measures to increase public revenues .....	86
Measures to contain public spending .....	90
Concluding remarks .....	101
Bibliography .....	102
<b>Boxes</b>	
1.1. Liberalisation of financial markets .....	19
1.2. Macro- and micro-prudential supervision .....	53
1.3. Major recommendations of the Jännäri Report on prudential regulation and supervision .....	54
1.4. Recommendations to improve the financial system .....	56
2.1. The new Central Bank Act .....	71
2.2. How synchronised is Iceland with the euro area? .....	75
2.3. How loose is Employment Protection Legislation (EPL) in Iceland? .....	78
2.4. Measuring the efficiency of social spending .....	94
2.5. Policy recommendations for monetary and fiscal policies .....	101

**Tables**

1.1. External equity assets . . . . .	22
1.2. International investment positions in OECD countries, 2007 . . . . .	23
1.3. Domestic Money Banks' loan-to-deposit ratios . . . . .	23
1.4. Domestic credit . . . . .	25
1.5. Estimated debt and external assets of non-financial firms . . . . .	30
1.6. Household net wealth composition and dynamics . . . . .	31
1.7. Decomposition of general government revenue and expenditure . . . . .	41
1.8. Short-term economic developments and prospects . . . . .	51
2.1. Correlation coefficients with euro area real GDP growth and inflation, 1997-2007 . . . . .	75
2.2. Correlation coefficients of underlying shocks between Iceland and selected countries, 1997-2007 . . . . .	77
2.3. General government finances . . . . .	84
2.4. Local government finances . . . . .	99
2.5. Agriculture: Producer support estimate . . . . .	100
2.6. Estimated savings for selected fiscal consolidation measures . . . . .	101

**Figures**

1.1. Ratio of bank assets to GDP . . . . .	20
1.2. International investment position . . . . .	21
1.3. Lending and deposits by customer residence . . . . .	24
1.4. Stock-market developments . . . . .	26
1.5. Stock-market capitalisation relative to GDP . . . . .	27
1.6. Cumulative growth in real house prices . . . . .	28
1.7. Cumulative growth in the ratio of house prices to disposable income . . . . .	29
1.8. Ratio of house prices to actual and imputed rentals . . . . .	29
1.9. Household debt . . . . .	31
1.10. Financial leverage of the household sector . . . . .	32
1.11. Composition of household debt . . . . .	33
1.12. Real GDP growth . . . . .	34
1.13. Share of the construction and financial intermediation sectors in value-added . . . . .	35
1.14. Growth in labour inputs . . . . .	36
1.15. Growth in real wage rates . . . . .	37
1.16. Growth in real wage rates in the private and public sectors . . . . .	37
1.17. Hourly labour productivity and real product wage rates . . . . .	37
1.18. Nominal and real wage growth . . . . .	38
1.19. Inflation . . . . .	38
1.20. Exchange rate pass-through . . . . .	39
1.21. Inflation expectations . . . . .	40
1.22. General government revenue, expenditure and net lending . . . . .	40
1.23. General government debt . . . . .	42
1.24. National gross investment, gross saving and net lending . . . . .	43
1.25. Contributions to the current account balance . . . . .	43
1.26. Real effective exchange rate . . . . .	44
1.27. Credit default swap (CDS) rates . . . . .	45

1.28.	Debt distribution of financial institutions . . . . .	45
1.29.	Growth in domestic demand and GDP . . . . .	50
1.30.	Recessions and recoveries: Iceland and the "Big Five" financial crisis countries . . . . .	52
2.1.	Average annual inflation rate, 2001-2007 . . . . .	64
2.2.	Volatility of inflation. . . . .	65
2.3.	Volatility of real GDP growth. . . . .	66
2.4.	Main components of official CPI inflation . . . . .	67
2.5.	Aggregate demand and supply for Iceland and the euro area . . . . .	76
2.6.	Correlation of underlying shocks with anchor areas . . . . .	77
2.7.	OECD indicators of employment protection, 2008 . . . . .	79
2.8.	Real effective exchange rates in Iceland and other commodity producers . . . .	83
2.9.	Public revenues: recent trends and composition . . . . .	86
2.10.	Personal income tax and value-added tax collected by the central government . . . . .	87
2.11.	Public expenditures: recent trends and composition . . . . .	91
2.12.	Performance in health and education . . . . .	93
2.13.	Efficiency frontiers . . . . .	94
2.14.	Input efficiency of the health system . . . . .	96
2.15.	Pisa score and education spending per student . . . . .	97
2.16.	Input efficiency of the education system . . . . .	98



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 6 July 2009. 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 20 July 2009.

The Secretariat's draft report was prepared for the Committee by David Carey and Andrea De Michelis under the supervision of Patrick Lenain. Research assistance was provided by Roselyne Jamin.

The previous Survey of Iceland was issued in February 2008.

Information about the latest as well as previous Surveys and more information about how Surveys are prepared is available at [www.oecd.org/eco/surveys](http://www.oecd.org/eco/surveys).

### This book has...



**StatLinks** 

**A service that delivers Excel® files  
from the printed page!**

Look for the *StatLinks* at the bottom right-hand corner of the tables or graphs in this book. To download the matching Excel® spreadsheet, just type the link into your Internet browser, starting with the <http://dx.doi.org> prefix.

If you're reading the PDF e-book edition, and your PC is connected to the Internet, simply click on the link. You'll find *StatLinks* appearing in more OECD books.



## BASIC STATISTICS OF ICELAND 2008

### THE LAND

Area (1 000 sq. km)	103	Major cities population, 1 January 2009	
Productive area (1 000 sq. km)	24	Reykjavík	119 547
of which:		Kópavogur	29 976
Cultivated area	2	Hafnarfjörður	25 850
Rough grazings	22		
Unproductive area (1 000 sq. km)	79		

### THE PEOPLE

Population, 1 January 2009	319 368	Occupational distribution, (per cent)	
Net increase 1999-2009		Agriculture	2.5
annual average, %	1.5	Fishing and fish processing	4.1
of which:		Other manufacturing	9.7
Net immigration	0.7	Construction, total	9.8
		Trade	13.9
		Transport and communication	6.4
		Other services	53.6

### GOVERNMENT AND PARLIAMENT

Public sector indicators (% of GDP)		Present composition of Parliament 2009	
Public consumption	24.6	The Alliance Party	20
General government total revenue	43.5	Independence Party	16
Gross debt	93.2	The Left-Green Movement	14
Net debt	20.5	Progressive Party	9
		Last general election 25th April 2009	
		Next general election 2013	

### PRODUCTION AND CAPITAL FORMATION

Gross domestic product		Gross fixed capital formation	
ISK million	1 465 065	ISK million	350 438
Per head, USD	52 132	% of GDP	23.9
Per head, USD PPP	36 499		

### FOREIGN TRADE

Exports of goods and services, % of GDP	44.7	Imports of goods and services, % of GDP	47.6
Main exports (% of merchandise exports)		Imports, by use (% of merchandise imports)	
Fish products	36.7	Consumer goods	21.9
Aluminium	39.0	Capital goods and transport equipment	34.4
Other manufacturing products	13.1	Industrial supplies	31.4
Agricultural products	1.4	Fuels and lubricants	12.3
Miscellaneous	9.8		

### THE CURRENCY

Monetary unit:	Króna	Currency units per USD, average of daily figures:	
		Year 2008	88.0
		June 2009	126.4

## Executive summary

**A**gainst the backdrop of the global financial turmoil and recession, Iceland has been struck by a banking crisis of unprecedented proportions and the economy has plunged into a deep recession. The plight of the banking system was in part the consequence of the sudden shutdown of global capital markets. But Icelandic banks' aggressive expansion strategies in an atmosphere of ineffective supervision rendered them highly vulnerable. Faced with events having potentially dramatic economic and social consequences, the government sought the assistance of the international community in support of the medium-term adjustment programme to restore policy credibility and economic growth. While progress has been made in implementing the programme, much remains to be done.

**Weaknesses in financial supervision revealed by the crisis need to be corrected.**

Following their privatisation in 2003, the banks expanded rapidly and became so big in relation to the economy that they could not be rescued when they got into trouble. They also became so complex and interconnected that the financial supervisors, with their limited powers, could no longer effectively restrain their activities. In the future, financial stability will require a smaller and simpler banking system, tougher supervision and a strong macro- and micro-prudential framework, focusing on both systemic and individual risks.

**For the economic recovery to take hold, the banking system needs to function smoothly once again.** In the wake of the crisis, the authorities created three new banks by transferring all domestic deposits and claims on residents previously held by the old banks. While an effective temporary solution, the present setup is not viable over time. The new banks hold impaired assets, they are too big and they should not stay forever in state ownership. The authorities should take the necessary steps to prepare their full privatisation and should encourage foreign banks to participate.

**Removal of capital controls should be started as soon as feasible.** The programme supported by the IMF Stand-By Arrangement introduced restrictions on capital flows to prevent massive outflows, stabilise the exchange rate and protect households and firms with large unhedged foreign currency exposures. These restrictions should be lifted as soon as can be safely done to allow the resumption of normal financial relations with foreign markets.

**If it were to become an EU member, Iceland would be advised to seek entry into the euro area as soon as possible, so as to reap the economic benefits.** Past monetary policies based both on exchange rate and inflation targeting have produced unsatisfactory results. By joining the euro area, Iceland would share the benefits of the ECB's credibility, including lower risk premiums.

**Substantial fiscal consolidation is required to put public finances on a sustainable path.** The collapse of Iceland's financial institutions has increased government debt, while the recession and rising debt servicing costs entail a sharp widening of the budget deficit. Corrective fiscal measures should continue to be implemented. Initially most of the consolidation will occur through tax increases but subsequently the weight of expenditure reductions will have to grow. There is substantial scope to reduce health and education expenditure without adversely affecting the quality of services provided, as discussed in previous OECD Economic Surveys of Iceland.

## Assessment and recommendations

Iceland has plunged into its deepest economic recession in decades after succumbing to a widespread financing crisis and a collapse of domestic demand. The meltdown of Icelandic banks unfolded against the backdrop of faltering global capital markets, which reached a climax in September 2008 with the failure of Lehman Brothers. By the fourth quarter of last year, almost all OECD countries were experiencing sharp declines in real GDP and world trade was plummeting. After years of rapid expansion, the economic situation in Iceland also turned for the worse when the country's three main banks collapsed, capital markets seized up and financial relations with foreign countries were shut down. While Iceland is in part a victim of the international crisis, its severe plight largely results from a recent history of ineffective bank supervision, exceptionally aggressive banks and inadequate macroeconomic policies. The government has devised a medium-term adjustment programme to restore policy credibility and economic growth, which is being implemented in the context of an IMF Stand-By Arrangement. The origins of Iceland's severe banking and macroeconomic difficulties and policies for a sustainable recovery are discussed in this *Economic Survey*.

---

### *The collapse of Iceland's three main banks caused a deep crisis*

---

A banking crisis of extreme severity is unfolding in Iceland. After five years of brisk expansion, the country's three main banks, representing 85% of the banking system, all collapsed during the same week in October 2008. The failure of Iceland's banks was not an isolated event: in most other OECD countries, banks also came under severe stress following the sudden meltdown of global capital markets. But Icelandic banks were particularly vulnerable to such a shock because their very aggressive strategies had exposed them to massive equity market risk, and they had relied heavily on precarious sources of funding. Upon their failure, the three banks were put into receivership and new banks were formed to enable the domestic payment system to continue to function smoothly. Complex negotiations between the new banks and the creditors of the old banks were needed to reach a final settlement. With hindsight, it appears that the Icelandic financial supervisory authorities had become overwhelmed by the complexity of the national banking system, and had been unable to stop their expansion. In addition, there was a lack of a macro-prudential framework that would have reacted to unsustainable developments in credit, leverage and risk. By the end, the size of the banks far exceeded the limited capacity of the Icelandic authorities to rescue them. Although the size of the banking sector has been reduced substantially, there is still a need to rethink the regulatory and supervisory framework.

---

*The recession is set to be deeper than in most other OECD countries*

---

A direct consequence of the crisis is that Iceland has entered a deep recession. The economy had already started to weaken in the first half of 2008 and, following the failure of the banks, the contraction in all components of domestic demand deepened markedly. The retrenchment of domestic demand is already much greater than in other OECD countries. Deep cuts in employment and working time were made, pushing up the unemployment rate sharply from 2.5% in the third quarter of 2008 to 7.1% by the first quarter of 2009. A sharp drop in the exchange rate of the króna caused inflation to soar initially, although it had slowed to 11.6% by May 2009 as the effects of the depreciation eased and depressed economic conditions weighed on firms' pricing power. Wages have adjusted quickly to the crisis, falling by 6¼ per cent in real terms in the year to April 2009, with the fall being much more marked in the private- than the public sector. On the basis of announced macroeconomic policies (see below), the OECD projects a deep recession this year, with GDP shrinking by around 7%, and a gradual recovery beginning next year assuming that large energy-related projects get underway as planned. The unemployment rate is projected to rise to a peak of 10% in 2010 while inflation should fall to around 2½ per cent.

---

*A Stand-By Arrangement was agreed with the IMF*

---

Faced with an unprecedented crisis, the Icelandic authorities turned to the IMF for help and agreed to a programme supported by a Stand-By Arrangement. In the near term, the programme seeks to prevent a further sharp depreciation of the króna to reduce the risk of adverse balance-sheet effects, which arise notably from the high shares of foreign-exchange denominated and inflation-indexed debt in the economy. To this end, the programme foresees a tight monetary policy to make króna assets more attractive and exchange controls to be maintained on the capital account. Beyond this immediate goal, the programme seeks to restore the smooth operation of the banking system. It also calls for strong fiscal consolidation to ensure medium-term sustainability. The Stand-By Arrangement envisages access to official financing, from the IMF and other sources, of about US\$5 billion.

---

*Iceland's banks pursued highly risky strategies that doomed them*

---

The financial collapse largely results from the banks' risky strategies. After the completion of banking privatization in 2003, the new owners set the banks on a path of international expansion and greater risk taking. Global financial market conditions were favourable at the time, enabling the banks to finance their expansion cheaply, mainly through wholesale markets. They grew quickly, increasing their consolidated assets to the equivalent of 880% of Icelandic GDP by the end of 2007, a very large amount by any standard. As they expanded, the banks increasingly made loans to a few Icelandic investment companies, typically controlled by the main shareholders of the banks, which were taking equity stakes in foreign firms. To finance these loans, the banks borrowed in foreign capital

markets, increasing Iceland's net external debt by 142 percentage points of GDP over the four years to end-2007. This strategy indirectly exposed the banks to equity market risk. In the wake of the global financial meltdown in September 2008, fear about the solvency of the three Icelandic banks became widespread, effectively shutting them off from the wholesale markets and preventing the refinancing of maturing obligations. As the banks were far too big to be recapitalised by the government, the Financial Supervisory Authority (FME) had no choice but to place them all into receivership.

---

*To restrain the build-up of systemic risks, macro- and micro-prudential supervision must interact*

---

The expansion of the banks entailed a major build-up of systemic risk in Iceland's financial system – all of them had significant exposures to the same risk factors: reduced liquidity in global bond markets, a decline in equity markets and exchange-rate depreciation. In addition to these risks, domestic bank lending underpinned an asset price boom in Iceland, increasing risks further. Finally, the banks grew to be too big for the Iceland government to rescue. Banking in these circumstances became very dangerous when the global financial crisis deepened. *To restrain the build-up of systemic risks in the future, macro-prudential supervision needs a legal basis to restrain bank behaviour, such as through countercyclical capital adequacy requirements.* To implement this reform effectively, it may be necessary to merge the Central Bank of Iceland, the macro-prudential supervisor, and the FME, the micro-prudential supervisor, or at least bring them under the same administrative umbrella (as in Finland and Ireland), as planned.

---

*Bank supervisors need to lay down tougher rules and apply them more strictly*

---

Although it will take some time to fully understand the causes of the financial crisis, some light was shed by studies commissioned by the authorities. The report of the former Finnish supervisor, Mr. Jännäri, notes that the first big mistake made was to allow local investor groups (with major expansion plans) to gain controlling stakes in the banks when they were privatised. The FME was not satisfied with this decision, which it considers to have been political, but acquiesced after lengthy deliberations. The report also points to a variety of practices that would have been considered elsewhere as inconsistent with basic banking regulation. Although banks seemed well capitalised, evidence suggests the capital was of poor quality, sometimes coming from connected parties. The banks had large exposures to investment groups and to each other (via shareholdings), implying a high degree of common vulnerability. While banking regulations were largely transposed from the European Union, Iceland's supervisors were unable to keep up with the complexity and size of the system as it grew rapidly and applied rules in an excessively legalistic manner. *In the future, Iceland's supervisors should not allow the banking sector to become so complex and so large that they cannot effectively fulfil their supervisory duties. Also, bank supervisors should lay down tougher rules and, subsequently, apply stricter practice on large exposures, connected lending and quality of owners, using discretionary best judgement when necessary.*

---

### *The Depositors' and Investors' Guarantee Fund needs to be reformed*

---

An important cross-border banking issue raised by the financial crisis was that national deposit guarantee systems may not have enough resources to honour the minimum EU deposit guarantee obligations. The government was obliged to stand behind Iceland's Depositors' and Investors' Guarantee Fund (DIGF) to enable it to meet these obligations, thus exposing Icelandic taxpayers to a large cost. While this issue goes beyond Iceland and would involve reforms of EU-wide practices, *the Icelandic authorities should review and improve the deposit guarantee system, closely following the developments within the EU, to protect the taxpayer from new large costs.*

---

### *Economic recovery requires restoring the smooth functioning of the banking system*

---

Following the banking collapse, the authorities decided to create three new banks by transferring the domestic deposits and claims on residents previously held by the old banks, thus effectively separating domestic from foreign operations. While this preserved the functioning of the domestic payment system, the new banks have no capital and there is considerable uncertainty about the value of their assets and liabilities. Once the compensation instruments between the new and old banks have been issued, the government will recapitalise the new banks, which will enable them to provide more normal financial intermediation services. *To eliminate uncertainties about the strength of the balance sheets of the new banks, the government should move low-quality domestic assets into an asset management company, which will dispose them over time.* In addition, there is evidence that the banks remain oversized for the Icelandic markets, thus weakening their profitability. *The banks should be streamlined to make them profitable, including by merger if necessary (provided that this does not undermine competition in banking services).* All of these measures would help to prepare the banks for full privatisation within the next few years. *To facilitate privatisation, foreign direct investment into the Icelandic banking system should be encouraged.* Other small countries, such as New Zealand, have found that having a banking system that consists almost entirely of well-run fully-owned subsidiaries of foreign banks works well and has been particularly advantageous during this period of global financial turmoil.

---

### *A start to removing capital controls should be made as soon as feasible*

---

Iceland has imposed capital controls to prevent disorderly outflows from causing a fall in the external value of the króna, especially outflows of non-resident investors' large holdings of króna-denominated securities, which would have driven many un-hedged firms and some households into bankruptcy. As well, by disallowing investments abroad, the capital controls in effect forced domestic creditors to lend to domestic borrowers, thus sharply reducing the risk premium and lowering market interest rates. *Nonetheless, lifting capital controls should start as soon as this can be done safely, to normalize relations with foreign markets and allow firms to tap financial sources abroad.* The authorities plan to lift the capital controls gradually once a medium-term fiscal consolidation plan is well in train, the

banking sector has been put back on its feet and there are sufficient international reserves. According to available information, some 20% of household debt was denominated in foreign currency in September 2008 and was not hedged while 50% of corporate borrowers with foreign-currency denominated debt do not have foreign currency earnings.

---

### *Macroeconomic policy faces challenging times*

---

Monetary and fiscal policy challenges have grown hugely. Formulating an exit strategy from the temporary regime of capital controls and high interest rates is a major task. The lack of satisfactory monetary policy outcomes under different regimes in past years points to the limitations of an independent monetary policy in a very small, open country like Iceland, particularly in the context of large capital inflows associated with global carry trade transactions. Moreover, the crisis has imposed a very high budgetary cost. The large fiscal deficits need to be reduced and eventually eliminated and the rising national debt will need to be turned around.

---

### *If it were to become an EU member, Iceland would be advised to seek entry into the euro area as soon as possible, so as to reap the economic benefits.*

---

Iceland's monetary policy credibility has been seriously damaged by the financial crisis. Even before the crisis, unsatisfactory inflation outcomes had already undermined the credibility of the monetary framework and, consequently, inflation expectations were poorly anchored. Rebuilding credibility is likely to take time and, even then, maintaining it might be very difficult. In the meantime, risk premiums on króna assets will remain high. *In view of these considerations, the best way forward for Iceland would be to seek entry into the euro area, which would require accession to the European Union.* Iceland would thereby participate in the credibility of euro-area monetary policy, which would be a stabilising influence and would lower interest rate premia. Lower real interest rates would reduce the government's debt servicing costs, ease balance-sheet adjustment for the private sector and lower the cost of capital to the private sector. The sharing of a common currency would reinforce trade linkages with other euro-area economies and would likely increase the synchronicity of the business cycle. On the other hand, Iceland would lose the option of exchange rate adjustments following idiosyncratic shocks. This consideration may be less important for Iceland than for other countries because its economy is already very flexible. Nevertheless, such a consideration points to the need to maintain and even increase flexibility in labour and product markets. Achieving the macroeconomic conditions for euro adoption – low inflation, stable exchange rate and low deficits and debt – will pose a difficult policy challenge in the years ahead but would in any case be an important ingredient in securing the necessary macroeconomic stabilisation following the crisis. The authorities need to be steadfast in using macroeconomic policy instruments to achieve these goals.



---

*In the near term, monetary policy should aim at a level of inflation consistent with euro-area entry*

---

Euro-area entry is, however, some time off, even under the most optimistic circumstances. For the time being, monetary policy should remain geared towards supporting the króna and protecting the balance sheets of unhedged borrowers. Exchange rate stability is the main goal of the capital controls, but since capital controls do not work perfectly, monetary policy needs to maintain a relatively strict stance. *Until concerns about disorderly capital outflows diminish, monetary policy should stay focussed on maintaining exchange rate stability, which may limit the scope for further reductions in the interest rate.* Once the capital account has been liberalised, a managed exchange rate regime will be increasingly difficult to implement. *The authorities should thus adopt an inflation-targeting framework geared to meeting the Maastricht Treaty inflation criteria, which would imply switching from the official CPI to the internationally-comparable harmonised CPI (HICP).* To improve the functioning of the monetary framework, the Central Bank's credibility should be improved. A good start has been made in this regard with recent reforms to communication policy and to the governance structure of the Central Bank, including the appointment of a Monetary Policy Committee with both internal and external members, coming with adequate credentials, to take interest rate decisions. *It is also crucial that the conduct of monetary policy be more decisive than in the past and that the government fully respects the Central Bank's independence.*

---

*Required fiscal consolidation measures should continue to be implemented*

---

The financial collapse has increased government debt. With the recession and rising debt servicing costs, the public deficit is projected to be above 10% of GDP in 2009, adding to the public debt burden. A considerable fiscal consolidation is therefore required to put public finances back on a sustainable path and to pave the road for a successful euro-area entry. *The deficit should be reduced vigorously in the coming years, with the goal of reaching balance.* This path is consistent with that called for in the IMF Stand-By Arrangement. Both tax increases and spending cuts will be needed, although the former are easier to introduce immediately. *The starting point for the tax increases should be to reverse tax cuts implemented over the boom years, which Iceland can no longer afford. This would involve increases in the personal income tax and lifting the reduced rate of VAT.* Just undoing the past tax cuts is unlikely to yield enough revenue. *In choosing other measures, priority should be given to those that are less harmful to economic growth, such as broadening tax bases, or that promote sustainable development, such as introducing a carbon tax.* *The government should also increase unemployment insurance contributions to a level that would be expected to balance the fund's accounts over the economic cycle, as planned.*

The planned fiscal consolidation will necessarily also involve substantial measures to contain expenditures. *Expenditures that expanded rapidly in recent years are good areas to look at for savings.* Government wages often outpaced those in the private sector, as the then-booming financial sector raised the demand for more skilled workers. *With retention no longer a problem, government wages should be frozen or even cut in nominal terms, implying significant declines in real terms, at least in 2009.* *For the same reason, public investment, which rose at an annual average rate close to 10% over 2003-07, should also be scaled back as much as*

possible, as is already planned. Budget expenditure growth ceilings must also be respected, in contrast to what has happened in the past. To this end, the role of the National Audit Office in the monitoring of the budget should be strengthened. Advice on the macroeconomic consequences of fiscal policy decisions should be further enhanced.

A number of public programmes could be reformed to reduce costs while still achieving the same outcomes. Above all, as discussed in the special chapter of the 2008 OECD Economic Survey, there are several options for enhancing spending efficiency in the health sector. The cost of running hospitals, which accounts for a high share of health care spending, could be reduced by introducing cost sharing and by rapidly implementing activity-based funding arrangements that reward productivity. Analysis in the 2006 OECD Economic Survey identified significant savings in education expenditures, which could be made from reducing the average duration of upper-secondary school toward international standards and, as planned, by consolidating the higher education sector. Municipalities, which are responsible for pre-school and primary education, are also facing pressure to cut in these areas as their revenues have fallen and their access to external financing sources is limited. Teacher-to-student ratios, which are high by international comparison, should be reduced. More generally, there is still scope to achieve economies through greater consolidation of municipalities. The crisis also provides an opportunity to reduce support to agriculture, which is the highest in the OECD.

---

*Structural reforms in other areas would also contribute to laying out the foundations for a sustainable recovery*

---

While macroeconomic policy currently runs high on the policy agenda, this should not obviate the need to conduct growth-friendly structural reforms, notably in the labour market and the product market. The labour market is flexible overall with high participation rates, ease of entry for migrants, strong work incentives and unemployment benefits of short duration by international standards. With Iceland being confronted for the first time in recent history with a massive increase in unemployment, it will be important to avoid introducing policies that would undermine the good functioning of the labour market, such as higher replacement rates and longer duration for unemployment benefits, as this would contribute to a rise in long-term unemployment. Another strength of the Icelandic labour market is that real wages are highly flexible, thus helping to smooth economic adjustment in the face of shocks. Real wage cuts have in the past come in the form of consumer price inflation exceeding the growth of nominal wages. If Iceland joins the euro area, nominal wage flexibility will become more important as a mechanism for adjusting to asymmetric shocks. Although the product markets generally function well, several areas need attention, as indicated in past OECD Surveys. The energy sector is dominated by the state-owned National Power Company and should be opened to foreign investment. In the mortgage market, although the Housing Finance Fund is currently an element of stability, policy makers might have to reassess its role as it benefits from a government guarantee that prevents fair competition and distorts the allocation of resources. More generally, experience of euro-area countries underlines the need for greater flexibility throughout the economy if adjustments to shocks are to occur smoothly and contribute to sustainable growth and high living standards.



## Chapter 1

# The financial and economic crisis

*The global financial and economic crisis has struck Iceland with extreme force. Iceland's three main banks, accounting for almost all of the banking system, failed in October 2008. They were unable to resist the deterioration in global financial markets following the failure of Lehman Brothers. The banks had pursued risky expansion strategies – notably borrowing in foreign capital markets to finance the aggressive international expansion of Icelandic investment companies – that made them vulnerable to the deterioration in global financial markets. They had also grown to be too big for the government to rescue. When access to foreign capital eventually closed, the banks failed. Non-financial firms and households were also vulnerable to the deterioration in global financial conditions, having taken on a lot of debt in recent years based on inflated collateral values. In some cases, the debt was foreign-currency denominated, without matching foreign-currency assets or revenues. In the wake of the banking crisis, the government obtained an IMF Stand-By Arrangement to provide favourable access to foreign capital markets and creditability for the recovery programme. Even so, the recession is likely to be deeper in Iceland than in most other OECD countries owing to the seriousness of the banking crisis and the weakness of private sector balance sheets.*

Iceland's three main banks, which accounted for 85% of the banking sector, were put into receivership in October 2008. They were unable to resist the deterioration in global financial markets that occurred following the disorderly failure of Lehman Brothers. While the global financial crisis has pushed almost all OECD countries into recession, the collapse of Iceland's banking system means that the recession is likely to be more severe there than elsewhere.

The Icelandic banks had pursued risky strategies – notably borrowing large sums in foreign capital markets to finance the international expansion of Icelandic investment companies – that made them particularly vulnerable to the deterioration in global financial markets. They had also engaged in a variety of practices that should have been more effectively restrained by prudential supervision. In the end, the banks had become so big in relation to the Icelandic economy that the government could not rescue them. When foreign sources of capital were cut off, the banks failed.

Adjustment to the crisis is likely to be painful for Iceland's non-financial firms and households. They had taken on a lot of extra debt during the boom years based on inflated asset values. In some cases, the debt was foreign-currency denominated without matching foreign-currency assets or revenues. Now that asset prices have fallen and the króna has depreciated sharply, firms and households are confronted with an urgent need to deleverage their balance sheets.

In the wake of the collapse of the banks, the government obtained an IMF Stand-By Arrangement (SBA) to provide favourable access to foreign capital markets and credibility to the recovery programme. It aims to prevent a further sharp depreciation of the króna to reduce the risk of adverse balance sheet effects, ensure medium-term fiscal sustainability, and develop a comprehensive bank restructuring strategy.

A major lesson to emerge from Iceland's experience is that macro-prudential supervision cannot be effective unless it has access to the required information from the micro-prudential supervisor and can impact micro-prudential supervision to restrain bank behaviour that puts financial stability at risk. There is also much to do to improve the quality of micro-prudential supervision in Iceland.

The chapter begins with a discussion of the factors that made the banks, non-financial firms, and households, respectively, vulnerable to deterioration in global financial markets. It goes on to describe the failure of the banks, its direct impact on government debt, the IMF SBA, and the economic outlook. The chapter concludes with a discussion of improvements in prudential regulation and supervision that need to be made in light of the crisis.

## Iceland's three main banks became vulnerable to a deterioration in global financial markets

### **Local investor groups gained control of the banks following privatisation**

The results of the bank privatisation process, which occurred as part of the liberalisation of financial markets (Box 1.1), laid the foundations for the problems with the banks that followed. Instead of spreading ownership among several institutional investors and private households or selling to a reputable foreign bank (at least one was showing interest but was turned down, probably for protectionist reasons), a controlling stake of over 40% in Landsbanki, then the country's biggest bank, was sold to one local investor group (Samson) (Jännäri, 2009). The sale was largely a political decision. The Financial Supervisory Authority (FME) was not satisfied with the result but gave its approval in

#### **Box 1.1. Liberalisation of financial markets**

Financial markets were highly regulated until the 1980s (Danielsson and Zoega, 2009, for the first two paragraphs of this Box). The three main banks were government owned, heavily regulated and highly politicised (politicians were represented on banks' boards and loan decisions were often made on the basis of political affiliation and connections). Political factors also influenced the structure of the Central Bank Board, which until recently had three governors, each representing one of the main political parties. There were foreign exchange controls and a fixed exchange rate regime. The exchange rate peg was adjusted frequently, especially in the 1970s and 1980s, with a view to making average profits in the fishing industry equal to zero. This made it difficult to diversify the economy because the exchange rate was maintained at too high a level for most other industries to prosper, a case of the Dutch disease.

The liberalisation of financial markets that had begun in the 1980s accelerated in the 1990s, not least because of the obligations and opportunities created by the decision to join the European Economic Area (EEA) in 1994.<sup>1</sup> Bank regulation was brought into line with that in other EEA countries and foreign exchange controls were abolished. The exchange rate was allowed to float in bands that grew progressively wider until 2001, when the exchange rate was allowed to float freely and an inflation targeting regime was put in place. The three large banks were progressively privatised from the late 1990s to 2003, but there were widespread accusations of political favouritism when the banks were privatized.

Iceland's banks obtained the right to open branches or subsidiaries in any EEA country through the EEA agreement; concomitantly, banks from other EEA countries correspondingly gained the right to open branches or subsidiaries in Iceland, although none has done so. Under the EEA agreement, responsibility for prudential supervision of bank branches falls on the home country while the host country is responsible for the supervision of subsidiaries. Similarly, the deposit guarantee coverage stipulated in the EU Deposit Guarantee Schemes Directive is provided by the home country deposit guarantee scheme for branches and by the host country scheme for subsidiaries.<sup>2</sup>

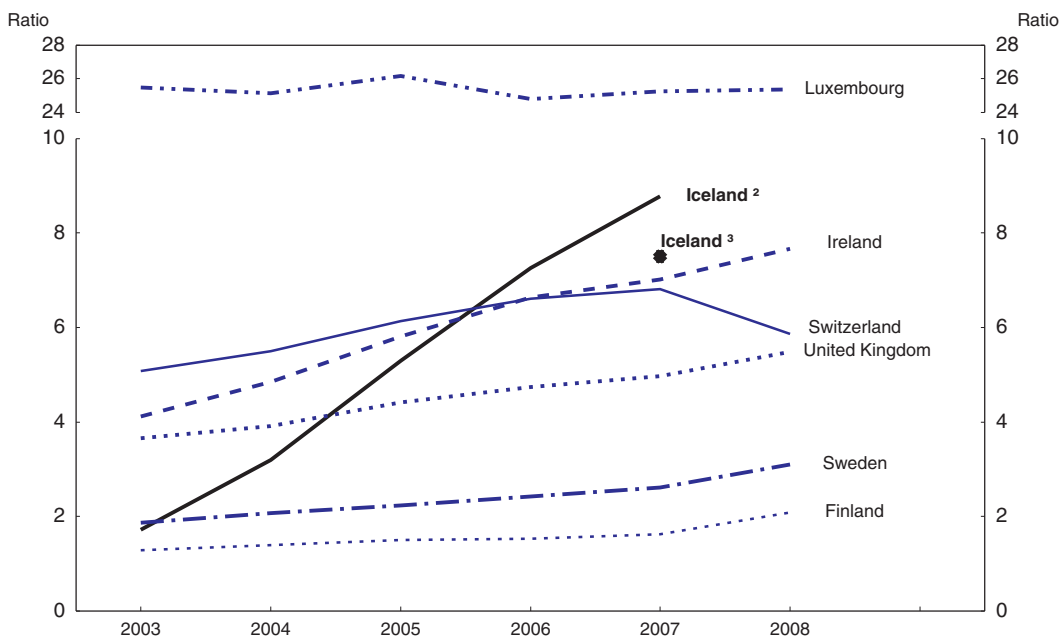
1. The EEA agreement essentially extends the freedom of movement of goods and services, capital, and labour enjoyed by EU members to Iceland but without EU membership. All relevant EU directives have had to be transposed into Icelandic law, as in other EEA countries.
2. The home country of a branch of a subsidiary is considered to be the country in which the subsidiary is registered. For example, the home country of a German branch of a Luxembourg subsidiary of an Icelandic bank is Luxembourg.

early 2003 after lengthy deliberations. This sale created a precedent that prevented the FME from blocking the concentration of ownership in the other two major banks, Kaupthing and Glitnir, when they were created through mergers. This gave controlling shareholdings in all three of the main banks to local investor groups. The Jännäri report, which was commissioned by the authorities to recommend improvements in prudential regulation and supervision in the wake of the collapse of the banks, noted that “for the most part, the new owners and the people behind them were not traditional commercial bankers; instead, they had the mindset of investment bankers, which favoured a strategy of rapid growth and highly leveraged, aggressive deals” (Jännäri, 2009, p. 14).

### **The banks became very large in relation to the Icelandic economy**

The newly privatised Icelandic banks took advantage of the opportunities afforded them by the liberalisation of financial markets and the EEA agreement, as well as by easy global monetary conditions, to embark on a massive expansion of their activities. The consolidated assets (*i.e.* including the assets of Icelandic banks’ foreign subsidiaries) of the three main banks grew from 170% of GDP at the end of 2003 to 880% of GDP by the end of 2007 (Figure 1.1). Moreover, the level reached by the end of 2007 was high by international comparison, albeit similar to the ratios in Ireland and Switzerland, although dwarfed by the ratio in Luxembourg. In Luxembourg, however, bank assets belong to subsidiaries of foreign banks while in Ireland this applies to 40% of bank assets (de Larosière (Chair), 2009, p. 71). This limits the burden on both countries to stand behind the banks. Switzerland is also a different case because its banks are so big globally that

Figure 1.1. **Ratio of bank assets to GDP**<sup>1</sup>



1. Assets of domestically registered banks as at December – excludes assets of foreign subsidiaries.

2. Consolidated assets of the three largest banks – includes foreign subsidiaries’ assets.

3. Data for the assets of domestically registered banks (excluding foreign subsidiaries’ assets) are only available from July 2007.

Source: Central Banks of the countries shown.

StatLink  <http://dx.doi.org/10.1787/704143274234>



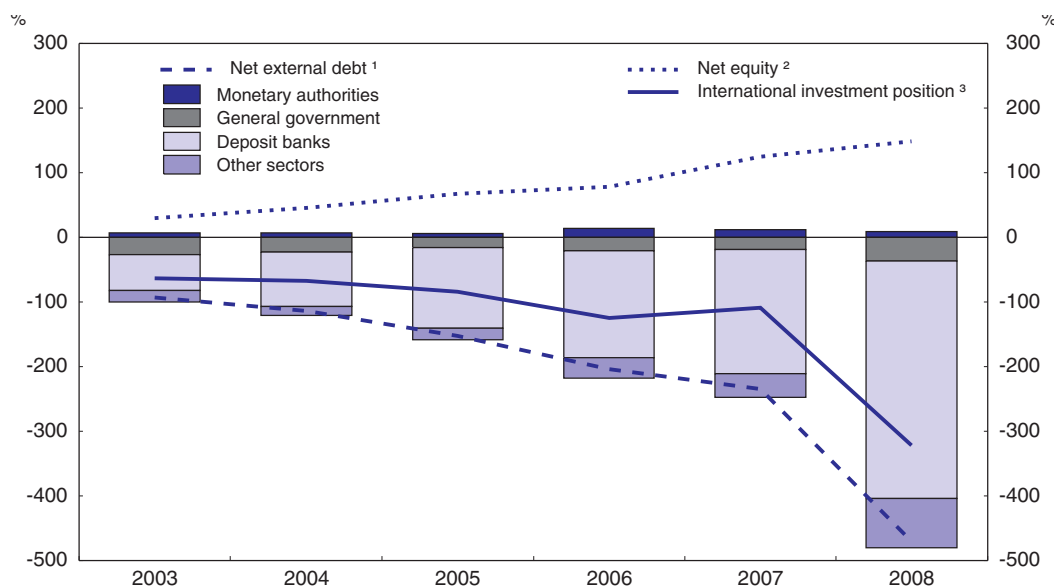
they are systemically important in other countries, raising the possibility that there would be a global response if these banks were about to fail. In Iceland, by contrast, assets belonged to domestic banks that were not systemically important anywhere but in Iceland. Only the Icelandic government potentially stood behind these banks, but they were very big in relation to the Icelandic economy, making such support a tall order.

The banks rapidly expanded both domestic assets (i.e. claims on residents) and foreign assets (i.e. claims on non-residents). By the end of 2007, Domestic Money Banks' (DMBs, which include the three main banks as well as all other domestically registered banks) unconsolidated assets were evenly divided between foreign and domestic assets. However, 70% of unconsolidated liabilities were to non-residents.<sup>1</sup>

### The banks pursued a highly risky core strategy

An important element of the banks' expansion strategy was to borrow in foreign capital markets to finance loans to a few Icelandic investment companies (such as Baugur and Samson), typically controlled by the main shareholders of the banks, that were taking equity stakes in foreign firms. The effects of this strategy are evident in Iceland's International Investment Position (IIP), which records residents' net claims on non-residents broken down into equity and debt. Net external debt increased by 142% of GDP over the four years to the end of 2007, almost all of which was attributable to the banks, while net equity assets rose by 99% of GDP, most of which was attributable to non-financial firms (Figure 1.2, Table 1.1). This increase in net equity assets reflected purchases rather than revaluation effects as net external assets (and debt) are recorded at historic cost in US dollars and the exchange rate did not change greatly over this period. Net external debt and

Figure 1.2. **International investment position**  
End of year, as per cent of GDP



1. Net external debt is residents' debt claims on non-residents net of non-residents' debt claims on residents.

2. Net external equity is residents' equity assets (i.e. foreign direct investment and portfolio investments in shares) abroad net of non-residents' equity assets in Iceland.

3. The international Investment Position (IIP) is the sum of net external debt and net external equity asset positions.

Source: Central Bank of Iceland, *Monetary Bulletin*, 2009-2.

Table 1.1. **External equity assets**  
as a % of GDP

	2003	2007	Change
Residents' external equity assets	43	214	171
<i>of which</i>			
Domestic Money Banks (DMBs) <sup>1</sup>	2	23	21
Other domestic credit institutions <sup>2</sup>	17	27	10
Other – mainly non-financial firms <sup>3</sup>	24	164	140
Non-residents' equity assets in Iceland	12	85	72
Net external equity assets	31	129	99

1. Domestic Money Banks are domestically registered banks, the largest of which are Kaupthing, Landsbanki and Glitnir.
2. Mainly pension funds.
3. Other sectors include non-financial firms, households, general government and the central bank. Neither the general government nor the central bank held significant equity assets over this period. The household sector's direct holdings of equities (indirect holdings have already been taken account of through other domestic credit institutions) did not increase very much over this period (IMF, 2008a, p. 11).

Source: Central Bank of Iceland, Statistics Iceland and OECD calculations.

net external equity assets reached by far the highest levels as a share of GDP amongst OECD countries (Table 1.2). The net external equity position was extraordinary given that even countries that have been investing abroad for decades did not have remotely comparable net equity holdings in relation to GDP. Iceland's IIP had come to resemble the balance sheet of a hedge fund, with large debt-financed equity positions.

This strategy indirectly exposed the banks to global equity market risk through the loans to the highly leveraged Icelandic investment firms that were buying foreign equity assets. In the event of a serious downturn in global equity markets, these firms risked becoming insolvent, resulting in credit losses for the banks. In addition, the banks had indirect exposure to equity market risk through purchases of shares on behalf of clients coupled with forward contracts to sell the securities back to the clients, not all of whom were the investment companies. This arrangement amounts to a collateralised loan. Such arrangements economised on regulatory capital because it only had to be held for the difference between the values of the two transactions instead of for the entire amount of the loan. The downside is that such arrangements exposed the bank to equity market risk if the counterparty was unable to buy back the shares at the agreed price, as occurred following the stock-market crash. Worse, the shares in question were often in the bank itself or in another Icelandic bank. This raised the risk that any shock to the banking system would be amplified, as indeed occurred when the banks failed and they were holding large amounts of worthless bank shares as collateral for loans to the banks' bankrupt owners.

### **The banks relied too heavily on wholesale funding**

Iceland's banks relied heavily on wholesale funding. Such funding was abundant and relatively inexpensive during the period in which they were expanding and could be more quickly mobilised than deposits, which was an important consideration given the ambition of the banks' expansion plans. The banks' average loan-to-deposit ratio rose quickly to a peak of 3.2 in 2005, although it was brought back down to 2.0 by the end of 2007 following an aggressive drive to expand foreign deposits through Internet-based banking, notably in the United Kingdom (Icesave) (Table 1.3, Figure 1.3). These ratios are high by international comparison for universal banks. For example, the ratio for HSBC, Europe's biggest bank,

Table 1.2. **International investment positions in OECD countries, 2007**  
As per cent of GDP

	International investment position	Net equity	Net external debt
<b>Iceland</b>	-105	129	-234
Greece	-94	-28	-66
Hungary	-92	-54	-39
Portugal	-90	-30	-60
New Zealand	-87	-30	-57
Spain	-70	-7	-63
Australia	-62	-13	-49
Poland	-50	-37	-13
Slovak Republic	-49	-48	-2
Turkey	-44	-29	-15
Mexico	-38	-37	-2
Czech Republic	-35	-48	13
Finland	-27	-31	4
Korea	-22	-25	3
United Kingdom	-21	15	-36
United States	-18	22	-39
Ireland	-16	-194	178
Austria	-15	-3	-12
Euro area	-14	-8	-6
Canada	-8	9	-17
Denmark	-7	28	-35
Sweden	-6	29	-35
Italy	-5	27	-33
Netherlands	2	15	-13
France	13	25	-11
Germany	27	11	16
Belgium	29	18	10
Japan	49	-6	54
Norway	55	34	21
Luxembourg	104	-2 667	2 772
Switzerland	139	18	122

Source: Central Bank of Iceland; IMF, *International Finance Statistics*.

has been between 0.84 and 1.0 in recent years. The problem with relying heavily on wholesale markets for funding is that they are less stable than deposits. Indeed, access to such funding can shut down altogether and quickly, as occurred as fears about the solvency of the Icelandic banks grew in the wake of the global financial crisis.

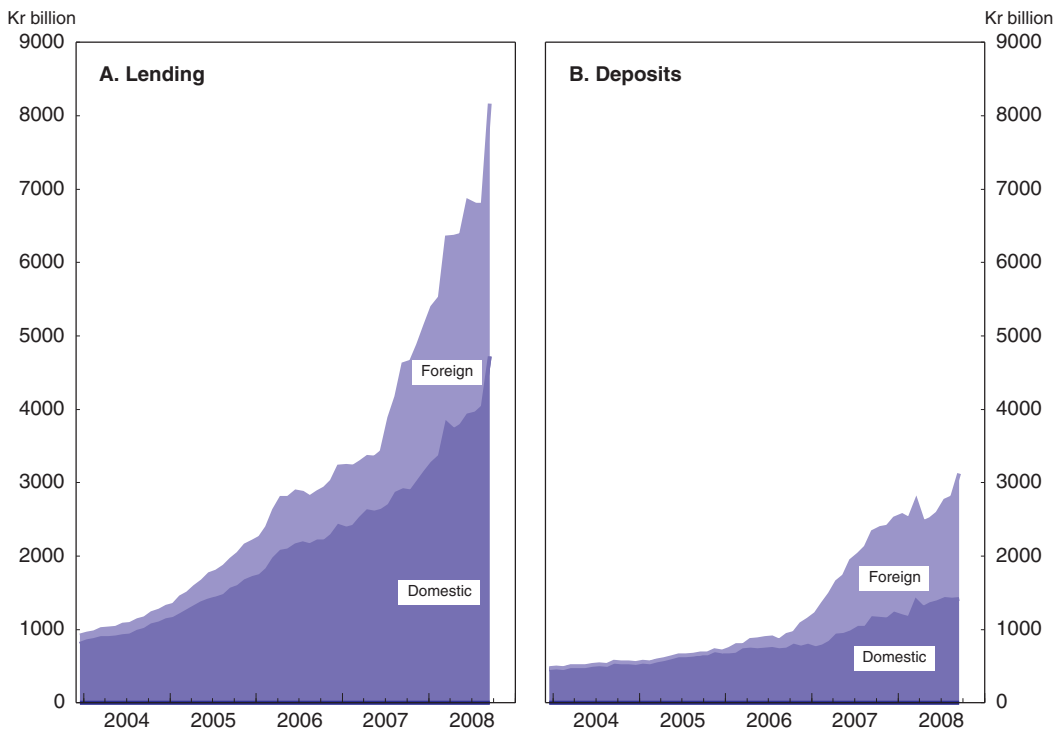
Table 1.3. **Domestic Money Banks' loan-to-deposit ratios**<sup>1</sup>

	Loans <sup>1</sup>	Deposits <sup>2</sup>	Ratio
2003	918.6	474.8	1.9
2004	1 314.0	539.2	2.4
2005	2 202.8	699.1	3.2
2006	3 224.2	1 139.3	2.8
2007	5 140.5	2 515.1	2.0
2008-September	8 168.4	3 123.3	2.6


1. End of year unless otherwise specified.

2. Billions of ISK.

Source: Central Bank of Iceland; OECD calculations.

Figure 1.3. **Lending and deposits by customer residence**

Source: Central Bank of Iceland.

StatLink  <http://dx.doi.org/10.1787/704276762718>

### **There were problems with large exposures, quality of capital, and adequately supervising the banks**

The three main banks had unusually large exposures to highly leveraged firms or individuals whose main activity was investing in shares or other venture capital or speculative activities (Jännäri, 2009). The Jännäri report notes that it is very unusual for banks as large as these to have so many large exposures of this nature. Moreover, some of the customers with large exposures had loans from more than one of the banks, raising systemic stability concerns. It was very difficult for the FME to supervise compliance with rules on large exposures and connected lending owing to the banks' complex and opaque ownership structures.

There were also concerns about the quality of the banks' capital. The controlling shareholders, who were highly indebted, had been allowed to borrow up to two thirds of their invested capital from the bank, with the shares in the bank being the collateral for the loans. When these shareholders and the banks got into difficulty, the loans had to be substantially written down, reducing the banks' own capital.

In addition, the FME was not able to supervise adequately such a large and complex banking system. According to the Jännäri report, "... the FME (Financial Supervisory Authority) staff was much too small, both in numbers and variety of skills, to supervise and regulate a banking system as large and internationally active as that in Iceland" (Jännäri, 2009, p. 7). Concerns in financial markets that the Icelandic banks were not as

closely supervised as other banks in the EU, despite prudential regulations being in compliance with EU and Basel rules, appear to have been well founded.

## Private sector balance sheets became vulnerable after rapid expansion

### A credit-induced asset price boom occurred

Domestic credit (from all domestic credit institutions, not just the banks) to the non-financial private sector grew at an annual average rate of 30% over the four years to the end of December 2007, when the banks were expanding rapidly (Table 1.4). Most of this growth was attributable to the banks, which substantially increased their market share. Domestic credit to non-financial companies grew at a much faster annual average rate than to households. The banks maintained a high share of credit to non-financial companies but doubled their market share of credit to households, although such credit remained a small part of the banks' total lending.

Table 1.4. **Domestic credit**  
% of GDP

	(DMBs) <sup>1</sup> Domestic Money Banks			Other domestic credit institutions			Total		
	Non-financial firms	Households	Total	Non-financial firms	Households	Total	Non-financial firms	Households	Total
2003	75	22	98	24	70	93	100	92	191
2004	92	33	125	30	61	91	122	94	216
2005	128	53	181	36	53	89	164	106	270
2006	159	61	220	47	52	99	206	113	319
2007	186	64	250	51	55	106	237	119	356

1. Domestic Money Banks are domestically registered banks.

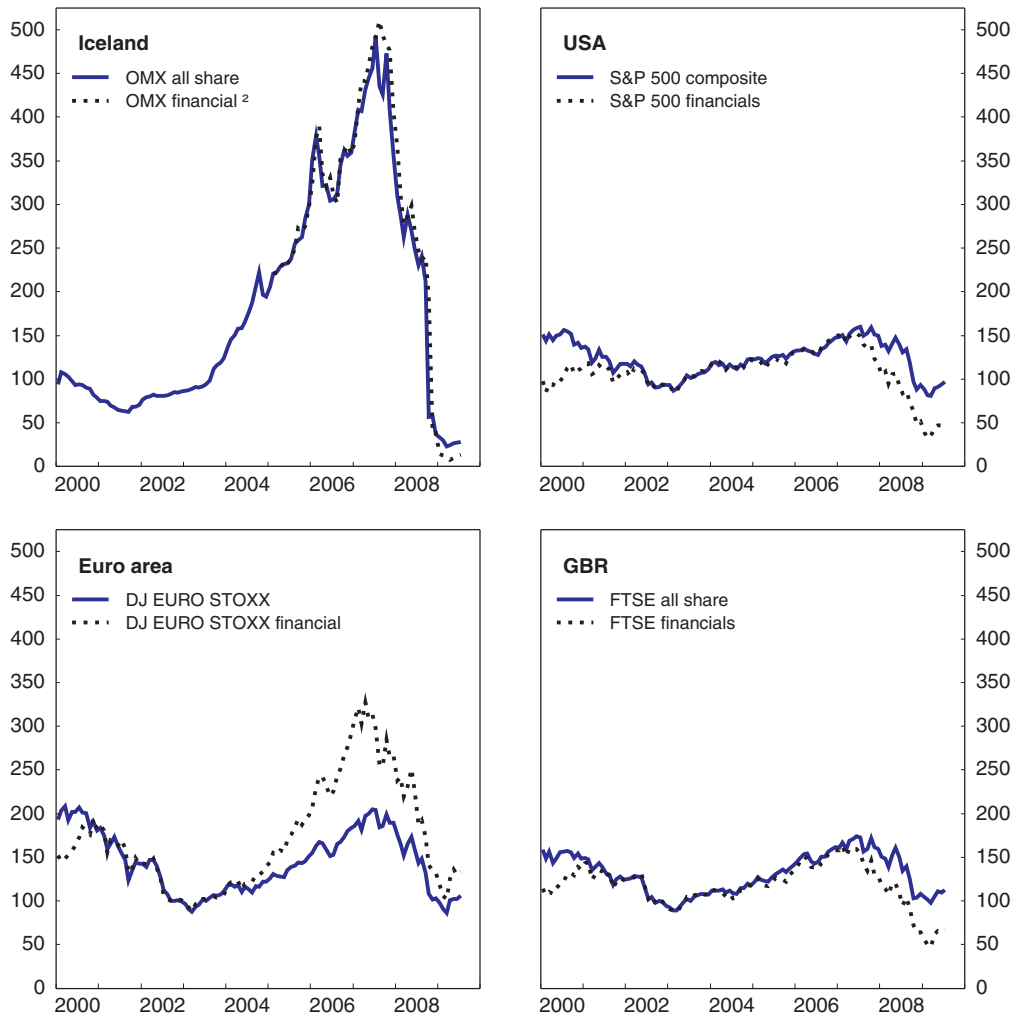
Source: Central Bank of Iceland, Statistics Iceland and OECD calculations.

High rates of domestic credit growth put strong upward pressure on domestic equity prices. The Icelandic stock-market (OMX Iceland All Share) rose by 390% over the four years to mid-2007, when it peaked (Figure 1.4). This increase far exceeded those in stock-markets in other OECD countries. Iceland's stock-market capitalisation relative to GDP soared from two thirds of GDP in mid-2003 to 2½ times GDP four years later (Figure 1.5). This large increase to a high level of stock-market capitalisation relative to GDP is suggestive of a large stock-market bubble having developed. This impression is reinforced if allowance is made for the fact that non-household operating surplus fell from 21% of GDP in 2003 to 16% of GDP in 2007, indicating that stock-market capitalisation increased by even more relative to (National Accounts based) corporate profits than to GDP.

House prices also rose sharply, although nowhere near as spectacularly as the increase in equity prices. Real house prices rose by 89% between the first quarter of 2000 and the fourth quarter of 2007, when they peaked (Figure 1.6). The increase was particularly pronounced in 2005, when the banks were aggressively expanding their share of mortgage lending (from a low base).<sup>2</sup> The increase in real house prices this decade was comparable to those that occurred in a number of OECD countries that also experienced house price booms. Real house prices have begun to fall in all of these countries, with the decline in Iceland being particularly rapid: half of the increase to the peak had been reversed by early 2009. The increase in house prices in relation to disposable income<sup>3</sup> was, in contrast, relatively modest by international comparison (Figure 1.7). This measure of affordability

Figure 1.4. **Stock-market developments**<sup>1</sup>


Index, 2003 = 100



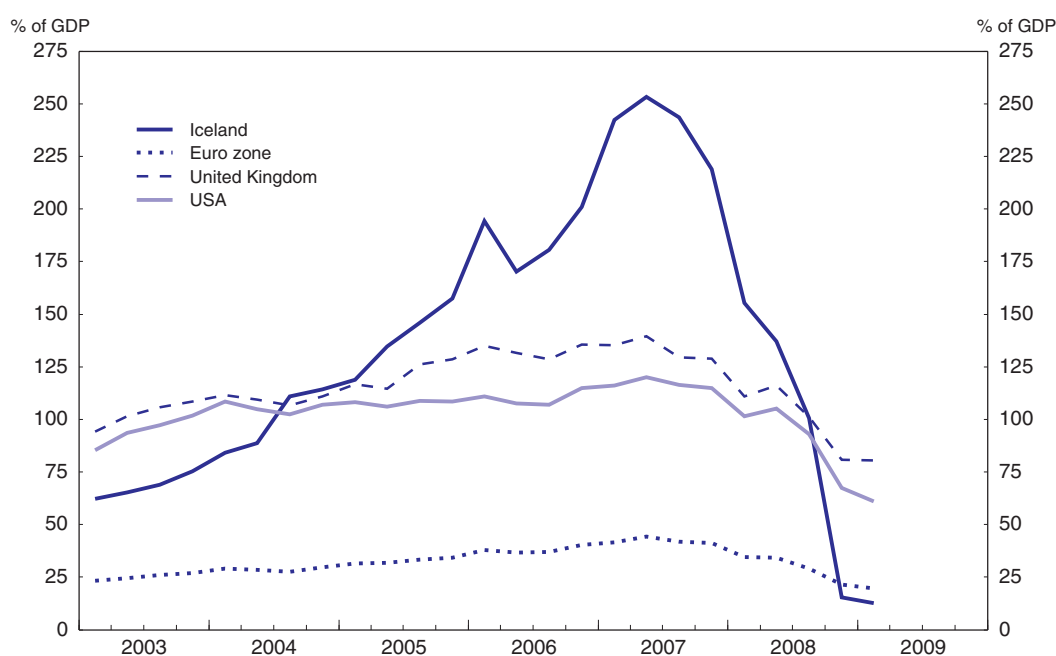
1. Mid-month data.

2. As OMX financial data start in mid-January 2005, they have been indexed to the value of the OMX all-share index at this time.

Source: Datastream.

StatLink  <http://dx.doi.org/10.1787/704310265374>

has been improving since 2006 and had regained the levels prevailing before the credit boom by 2008. The ratio of house prices to actual rentals rose considerably more than the ratio of prices to imputed rentals – it became much more expensive to own a house than to rent one, despite a fall in real interest rates –, indicating that house prices became highly overvalued (assuming that they were not undervalued to begin with) (Figure 1.8). This ratio had fallen back to the level at the beginning of 2003 by early 2009. On a similar basis, house prices also became overvalued in a number of other OECD countries in recent years (OECD, 2005, EO 78).<sup>4</sup>

Figure 1.5. **Stock-market capitalisation relative to GDP<sup>1</sup>**

1. For Iceland, capitalisation of the ICEX main list, other and First North; euro area: DJ EURO STOCX; United Kingdom: FTSE all shares; USA: Datastream index.

Source: Statistics Iceland; Datastream; OECD, *Analytical database*.

StatLink  <http://dx.doi.org/10.1787/704352445473>

### **Non-financial firms' debt increased markedly, exposing them to the risk of financial stress**

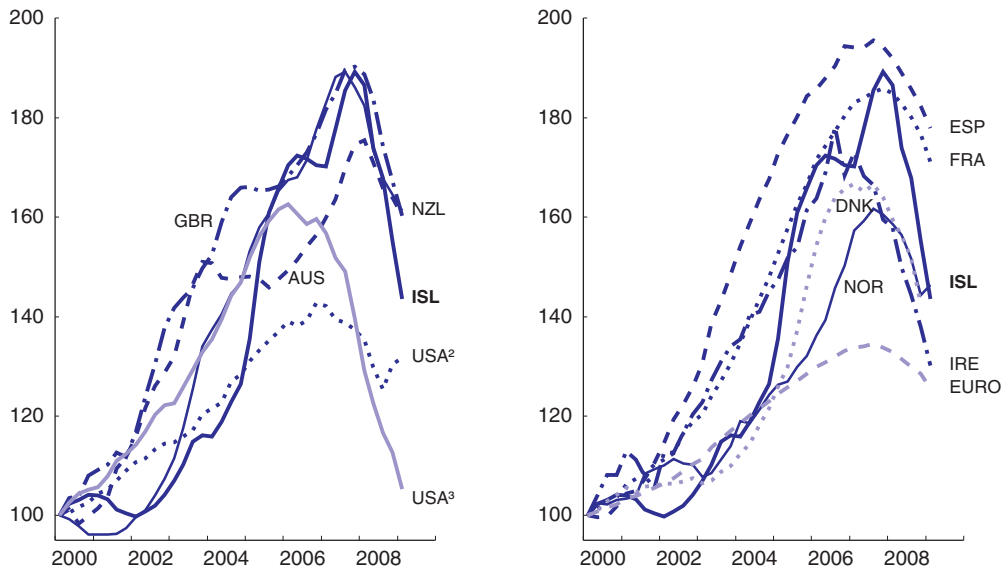
Stock-market gains provided collateral for non-financial firms to borrow to expand. Their total debt more than doubled as a share of GDP over the four years to the end of 2007, to 284% (Table 1.5). The increase in this ratio and the level reached are both high by international comparison; according to the IMF (2008b), this compares with 73% in the United States, 77% in the euro area (2005) and 278% in the United Kingdom (financial liabilities, which include equities<sup>5</sup>). Despite this large increase in debt, financial leverage (the ratio of total assets to market capitalisation<sup>6</sup>) remained steady (at 3.2-3.4) until 2006 thanks to the massive boom in stock-market valuations, but rose markedly in 2007 (to 4.1), when the stock-market began to fall. These financial leverage ratios are high by international comparison.<sup>7</sup> The risk of having high financial leverage ratios based on inflated asset values is that when they fall, firms no longer have enough collateral to support the current level of debt. They are likely to have access to further credit cut off and to have difficulty rolling over maturing credit lines. To stay afloat in these circumstances, firms must deleverage by selling assets, even at fire sale prices, and maximise operating cash surpluses.

It is likely that most of this increase in debt was attributable to the Icelandic investment companies that acquired such substantial external asset holdings. The increase in non-financial firms' external assets represented a high proportion of the total increase their debt (see Table 1.5). Moreover, most of the increase in external equity assets occurred through foreign direct investment, which the investment companies were




Figure 1.6. **Cumulative growth in real house prices**<sup>1</sup>

Index, 2000 Q1 = 100



1. Deflated by the harmonised CPI. For Australia, United States and New Zealand, the RBA index, all groups excluding housing and financial and insurance services, has been used.
2. Office of Federal Housing Enterprise Oversight (OFHEO).
3. Case Schiller.

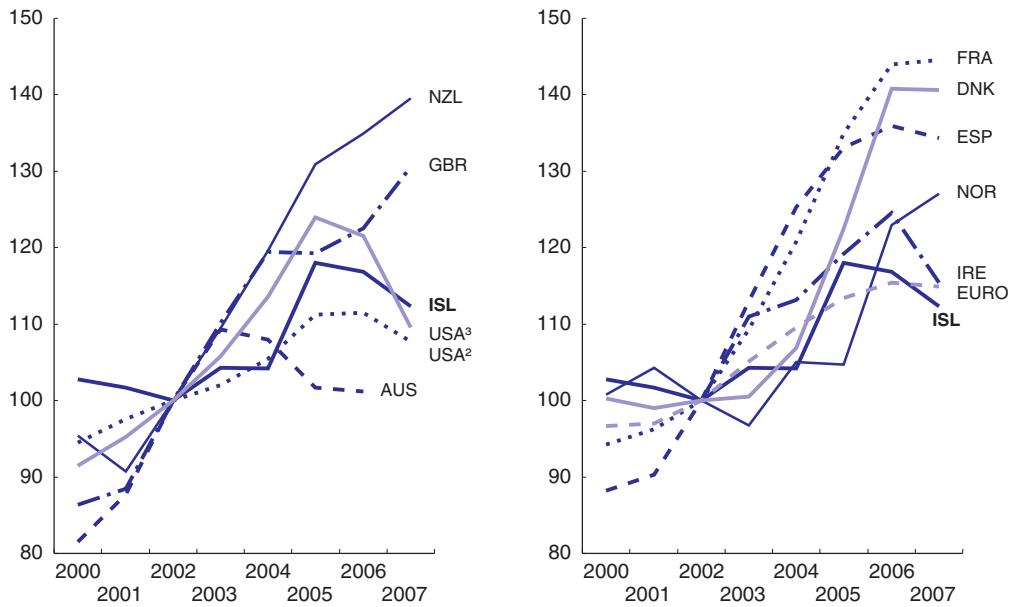
Source: Statistics Iceland; Reserve Bank of Australia and OECD *Economic Outlook* database.

StatLink  <http://dx.doi.org/10.1787/704417361321>

engaged in but was beyond the scope of most other Icelandic companies. In this case, the proportionate increase in debt of other non-financial firms was more modest than indicated by the gross data, suggesting that the need for deleveraging will also be less although not negligible given that debt was already high before the investment firms' international expansion and that not all of the increase in debt can be attributed to the acquisition of external assets. For the large investment companies, the deleveraging process is the most extreme possible – they are being liquidated. As this process proceeds, their debts will be eliminated through asset sales and writing off remaining unpaid loan balances.

There is also likely to have been a large increase in non-financial firms' foreign-currency denominated debts in recent years, again concentrated in Icelandic investment companies, although probably not in unhedged foreign-currency exposures for such firms in aggregate. As noted above, most of the increase in debt is likely to have been incurred by the investment companies. Borrowing in foreign currency would have given them the foreign exchange needed to buy external assets as well as providing a hedge against króna exchange rate risk. Unfortunately, the only data on non-financial firms' debt that are broken down into domestic and foreign currency components are for debt owed to domestic banks. If this were non-financial firms' only foreign currency debt, it is nowhere near enough to have financed the increase in external assets (see Table 1.5, low estimate). In this case, investment companies could account for all of the increase in foreign currency debt and non-financial firms as a whole would have substantially increased their exposure to foreign exchange risk by taking a large, long foreign-currency position (i.e., more foreign

Figure 1.7. **Cumulative growth in the ratio of house prices to disposable income**<sup>1</sup>  
Index, 2002 = 100



1. Household disposable income before interest payments.
2. Office of Federal Housing Enterprise Oversight (OFHEO).
3. Case Schiller.

Source: Statistics Iceland; Reserve Bank of New Zealand and OECD Economic Outlook database.


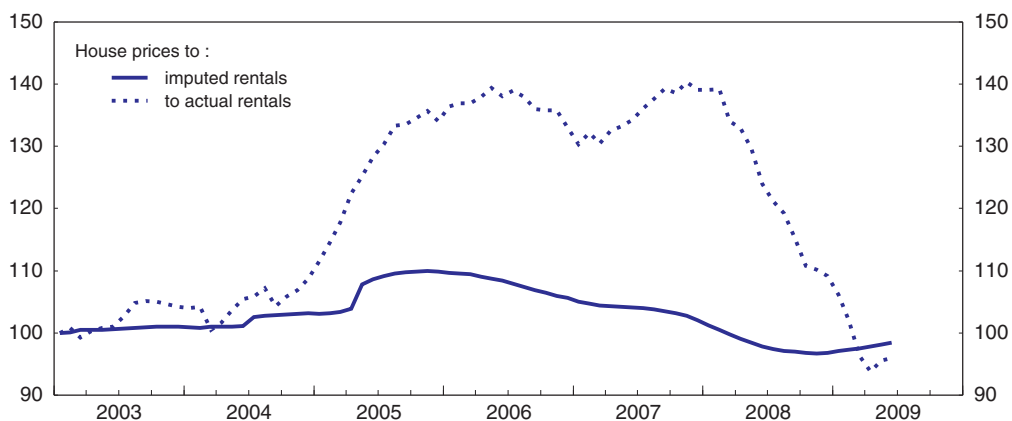

StatLink  <http://dx.doi.org/10.1787/704428551426>

Figure 1.8. **Ratio of house prices to actual and imputed rentals**  
Index January 2003 = 100



Source: Statistics Iceland.

StatLink  <http://dx.doi.org/10.1787/704471857651>

currency assets than liabilities) by the end of 2007. Alternatively, even if all of the debt to domestic credit institutions other than the banks and to non-residents were foreign-currency denominated, there would still only be a small part of the increase in foreign-currency debt that could not be accounted for by the investment companies (see Table 1.5, high estimate). Moreover, non-financial firms taken together would still have reduced their

Table 1.5. **Estimated debt and external assets of non-financial firms**<sup>1</sup>  
ISK billions

	Domestic debt			External debt <sup>4</sup>	Total debt	External <sup>5</sup> assets	Foreign currency debt <sup>6</sup>	
	DMBs <sup>2</sup>		Non-DMB <sup>3</sup> domestic credit institutions				Low estimate	High estimate
	Foreign- exchange linked	Other						
2003	323.7	309.0	204.7	173.8	1 011.2	208.1	323.7	611.2
(%GDP)	(38)	(37)	(24)	(21)	(120)	(25)	(38)	(83)
2007	1 382.8	1 035.0	666.9	614.7	3 699.4	2 179.4	1 382.8	2 664.4
(%GDP)	(106)	(80)	(51)	(47)	(284)	(167)	(106)	(204)
Change	1 059.1	726.0	462.2	441.0	2 688.2	1971.3	1 059.1	1 962.3
(%GDP)	(68)	(43)	(27)	(26)	(164)	(142)	(68)	(121)

1. As of December of each year.

2. Domestic Money Banks are domestically registered banks.

3. Non-DMB domestic credit institutions comprise: miscellaneous credit undertakings (including the Housing Finance Fund); pension funds; mutual funds and investment funds; and insurance companies.

4. External debt of non-financial firms is approximated by deducting the external debt of non-DMB credit institutions (as reported for each category listed in footnote 3 by the Central Bank of Iceland) from the external debt of "other sectors" (i.e. other than the monetary authorities, general government, and DMBs), as reported by the Central Bank of Iceland. For information, the external debt of "other sectors" increased from 22% of GDP in 2003 to 52% of GDP in 2007.

5. External assets of non-financial firms are approximated by using the same methodology as for external debt (i.e. by deducting the foreign assets of non-DMB credit institutions from the foreign assets of other sectors). The external equity assets of "other sectors" are obtained by deducting the DMBs' external equity assets from total external equity assets (general government has no external assets and it is assumed that the Central Bank does not have external equity assets). Other external assets of "other sectors" are given by the difference between their net external debt position and their external debt. For information, the external assets of 'other sectors' increased from 45% of GDP in 2003 to 207% of GDP in 2007.

6. It is assumed that all debt to non-DMB domestic credit institutions and all external debt are in Icelandic króna in the low estimate and in foreign currency in the high estimate.

Source: Central Bank of Iceland, Statistics Iceland and OECD calculations.

short foreign-currency position since 2003, albeit to a still significant level. As the investment companies are liquidated, most of the foreign-currency debts and assets will be eliminated, as discussed above. The remaining non-financial firms' balance sheets are likely to be less at risk from a depreciation of the króna than they were in 2003 but still at risk.

This discussion about foreign exchange exposures highlights lacuna in the data. It is important that the authorities find out quickly how much foreign-currency debt is owed by non-financial firms that are not already in receivership and the extent to which this debt is hedged in order to make an informed assessment about the likely impact of any further substantial currency depreciation on firms' balance sheets; increases in foreign-currency debt for companies that are being liquidated does not make any difference to their prospects of survival.

### **Household debt also rose, increasing the risk of financial stress**

Booming asset prices resulted in a large rise in household assets – approximately 70% of assets are subject either to real estate market risk or equity market risk, with the latter risk mainly being indirect through pension funds<sup>8</sup> – despite persistently negative household saving rates (Table 1.6). In all, household assets increased by one third as a share of GDP between 2003 and 2007, reaching over 400% of GDP in 2007. This increase was evenly split between real assets (essentially housing) and financial assets, each of which represents about one half of total assets.

Table 1.6. **Household net wealth composition and dynamics**  
% of GDP

	2003	2004	2005	2006	2007
<b>Composition</b>					
Real assets	150	163	190	190	200
Other assets	155	176	201	208	210
Total assets	305	339	391	398	410
Liabilities	92	94	106	113	120
Net wealth	213	245	285	285	290
<b>Dynamics</b>					
Change in net wealth		32.5	40.0	0.0	5.0
Saving before net interest payments	-4.7	-4.8	-6.0	-3.9	-1.9
Change due to returns in excess of GDP growth <sup>1</sup>		37.3	46.0	3.9	6.9
Implicit nominal rate of return		28.0	29.3	15.2	13.8
Implicit real rate of return <sup>2</sup>		25.4	25.3	10.8	6.8

1. This is calculated as the net wealth to GDP ratio in the previous year multiplied by the difference between the nominal rate of return on net wealth and the nominal rate of GDP growth.

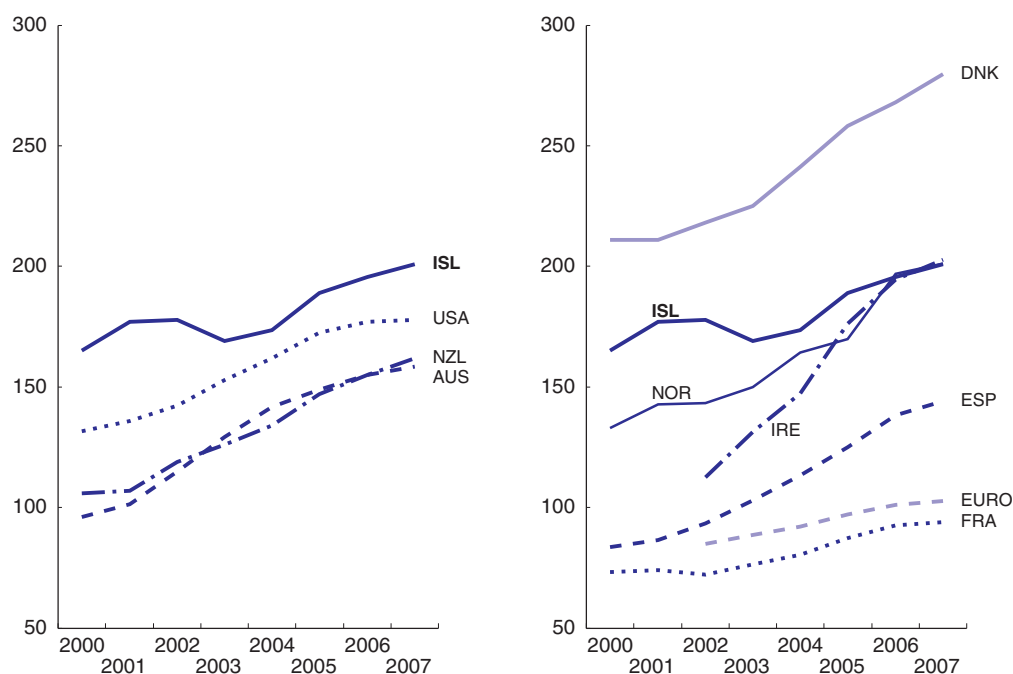
2. Implicit nominal rate of return deflated by the increase in the Consumers' Price Index.

Source: IMF (2008a) for assets, Central Bank of Iceland for liabilities, Statistics Iceland for all other data and OECD calculations.


The increase in assets provided collateral to support a marked increase in household debt, which rose from 169% of household disposable income before interest payments (household debt is serviced out of disposable income before debt repayments have been deducted, not out of the income that remains after debt servicing costs have been deducted) in 2003 to 201% in 2007 (Figure 1.9). This increase was large by international

Figure 1.9. **Household debt**

As a percentage of disposable income before interest payments



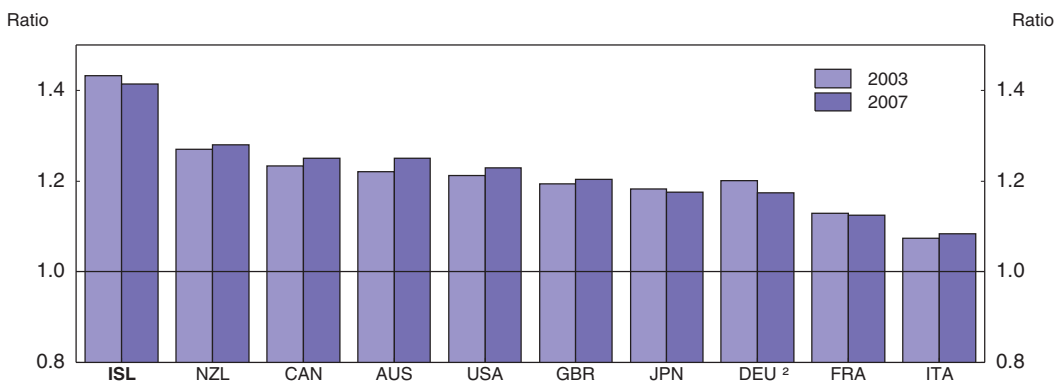
Source: Statistics Iceland; Reserve Bank of New Zealand and OECD Economic Outlook database.

StatLink  <http://dx.doi.org/10.1787/704502485877>

comparison, although it was exceeded in a number of other OECD countries. The level reached was on a par with that in Ireland and Norway and only exceeded in Denmark amongst OECD countries.

This increase in household debt was in line with that in household assets, leaving financial leverage (total assets divided by net wealth) unchanged at around 1.4 in 2007 (Figure 1.10). This leverage ratio is higher than in other OECD countries for which such data are available. Indeed, the riskiness of Icelandic households' balance sheets is even greater than indicated by these data because a substantial part (one third in 2007) of assets is in pension funds, which would be difficult for households to access to repay creditors if necessary. Such illiquid assets form a smaller share of household assets in most other countries, where there is less reliance on pension funds for retirement income. The risk of high financial leverage based on inflated asset values is that when they fall, households lose so much net wealth that they have to cut consumption back sharply to bring it into line with the lower expected level of lifetime income. They may even be constrained to reduce consumption expenditure by more than desired owing to reduced access to credit following their loss of net wealth (*i.e.*, collateral).


Figure 1.10. **Financial leverage of the household sector**<sup>1</sup>



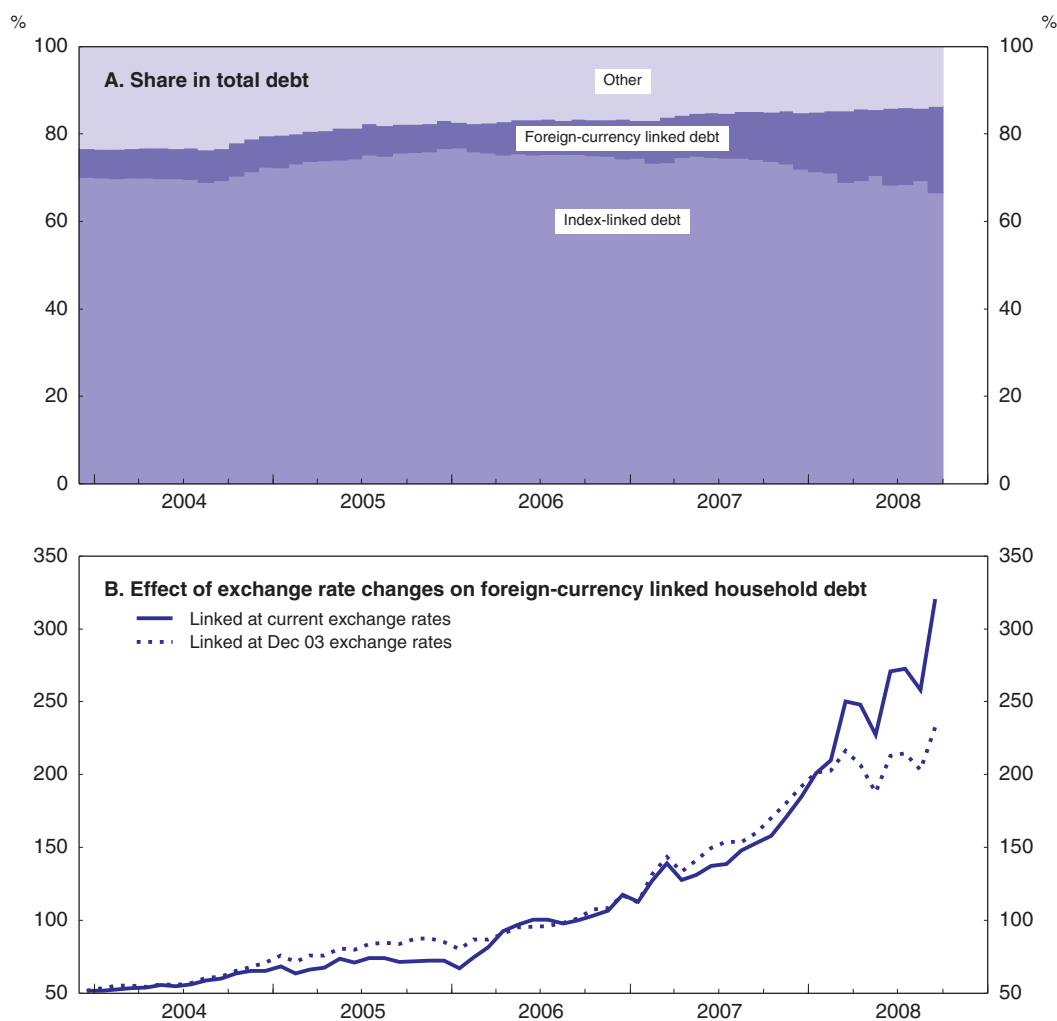
1. Financial leverage is defined as total assets divided by net wealth.

2. 2006.

Source: Central Bank of Iceland; Reserve Bank of Australia, Reserve Bank of New Zealand; OECD Economic Outlook database.

StatLink  <http://dx.doi.org/10.1787/704511842847>

An unfortunate aspect of the banks' drive for market share in household lending is that they promoted foreign currency lending – mostly in Swiss Francs and Japanese Yen –, even though few households had offsetting foreign-currency assets or sources of income. The banks did this to gain an apparent competitive advantage with unsuspecting households against the Housing Finance Fund (HFF), which benefited from a government guarantee but continued to offer mainly domestic currency loans (indexed to the CPI). The share of foreign currency debt in household debt doubled to 14% over the two years to early 2008 (Figure 1.11).<sup>9</sup> It went on to reach 20% of household debt by September 2008, mostly owing to exchange rate depreciation, highlighting the dangers of such borrowing for households.

Figure 1.11. **Composition of household debt**

Source: Central Bank of Iceland.

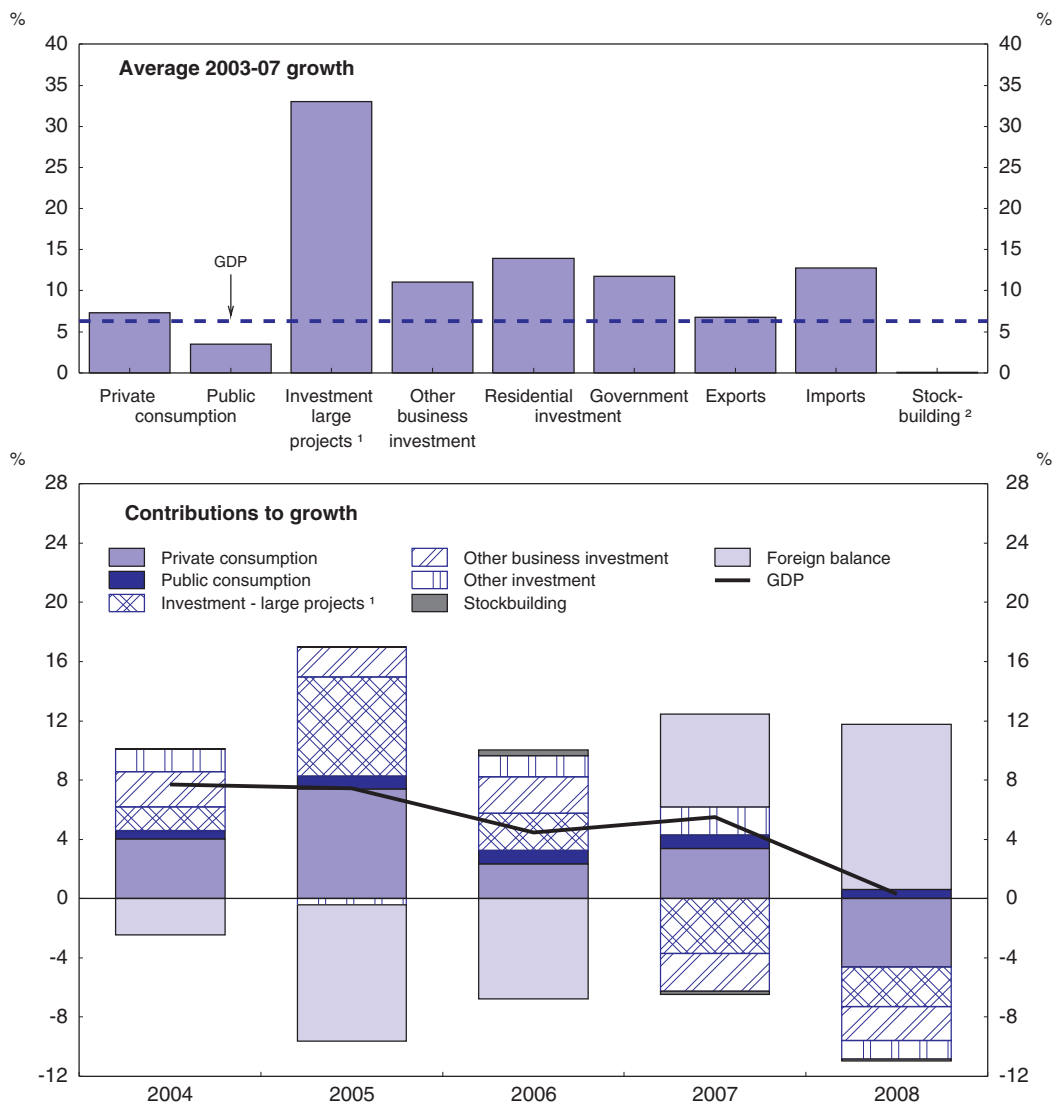
StatLink  <http://dx.doi.org/10.1787/704513241176>

## An unsustainable, domestic-demand led economic boom developed

### Economic activity boomed

Economic growth rose to an annual average rate of 6.3% over the four years to 2007, well above the rates recorded in previous economic recoveries (3.7% over 1985-89; 5.0% over 1995-99), despite the fact that output was not further below potential in 2003 (the output gap was -1.6% of potential GDP) than in 1985 or 1995, when the output gaps were -1.7% and -3.4% of potential GDP, respectively, according to OECD estimates. The surge in economic growth was led by an investment boom (Figure 1.12). Business investment soared, growing at an annual average rate of 19% over 2003-07. The most dynamic element of business investment was the large-scale projects in aluminium smelting and the associated expansion in electricity generation capacity. These projects reached up to 50% of business investment in some years. But other business investment also recorded very high growth as did government investment. Residential construction investment also grew strongly, as occurred in other countries with housing market booms. It reached a peak of


Figure 1.12. Real GDP growth



1. Ministry of Finance estimates.

2. Contribution to real GDP growth.

Source: OECD, National Accounts.

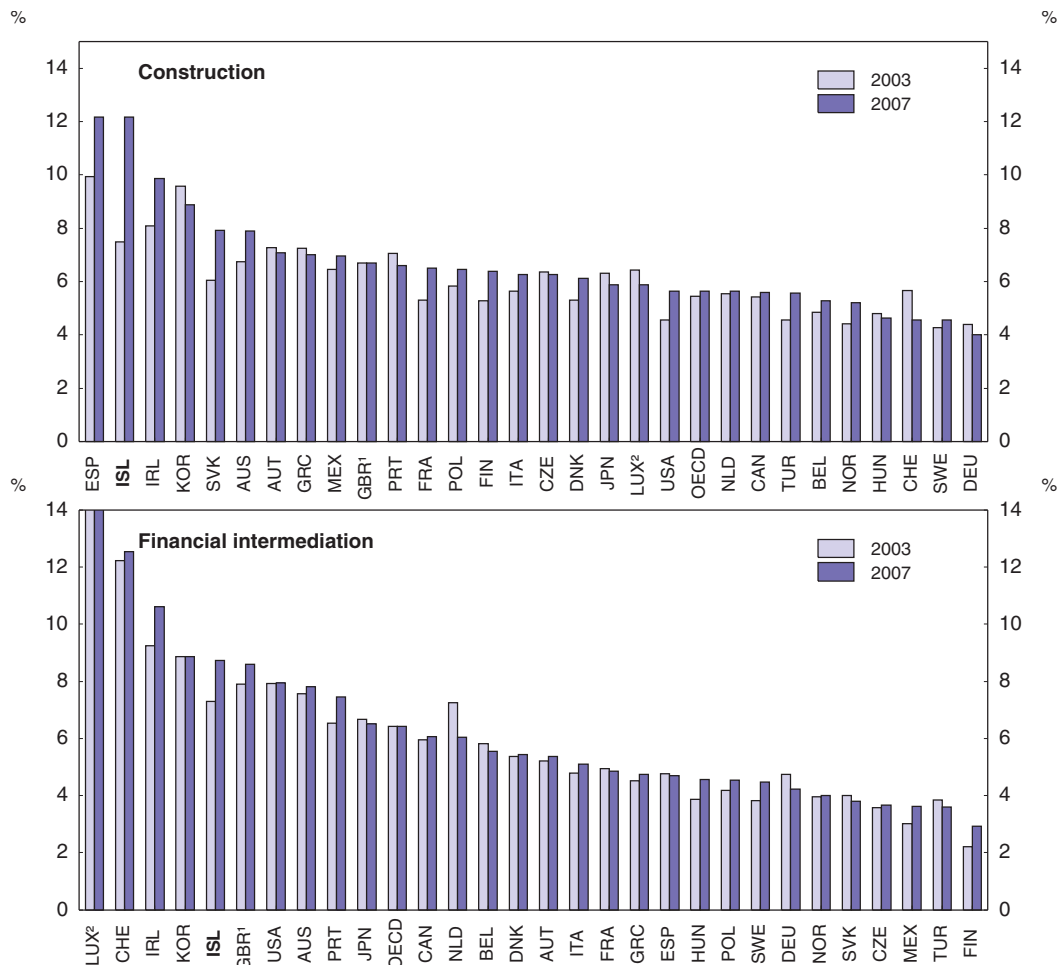
StatLink  <http://dx.doi.org/10.1787/704528387650>

7% of GDP, well above the historical average but only slightly higher than the OECD average at this time and well below the shares of GDP reached in Ireland (13%) and Spain (9%). Private consumption expenditure grew at a slightly faster rate than GDP over this period, being buoyed by strong growth in household disposable income. Indeed, the saving rate actually rose, albeit remaining negative, although caution is required in interpreting these data as there is not a complete household account in Iceland's National Accounts. Overall, the increase in domestic demand exceeded that in output as imports grew faster than exports. The OECD estimates that the output gap increased to 3.5% of potential GDP by 2007.



Financial intermediation and construction were by far the fastest growing sectors in Iceland over the four years to 2007, growing at annual average real rates of 19% and 14%, respectively. These sectors rose markedly as a share of nominal value added to levels that were the fifth and second highest among OECD countries, respectively (Figure 1.13). Drastic downsizing of the financial sector, which is now occurring, could see the sector's share in value added shrink by up to 4-5 percentage points if it were to fall to the lowest levels observed in other OECD countries. The overall loss in value added would depend on the difference in productivity between the financial sector and the other sectors to which resources are transferred. For example, if workers released from the financial sector had productivity only one half as high in the new sectors in which they work, the overall loss of value added from shrinking the financial sector could be about 2%. The high growth in the construction sector reflects the booms in both business and residential investment, with large project investment undoubtedly having played a big role. However, the sector's

Figure 1.13. **Share of the construction and financial intermediation sectors in value-added**



1. United Kingdom: 2003 and 2005.

2. For Luxembourg: 23.2 in 2003 and 27.3 in 2007.

Source: Central Bank of Iceland; OECD, National Accounts; Eurostat.

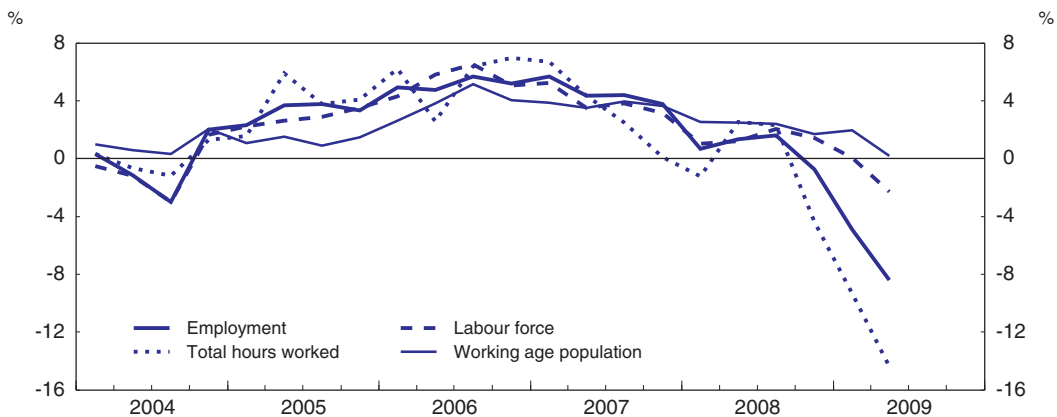
StatLink  <http://dx.doi.org/10.1787/704535477222>

prospects for 2010-11 are more favourable as substantial increases in large project investment are expected.


### **Overheating in the labour market was attenuated by high immigration**

Growth in total hours worked soared to over 6% (year-on-year) in late 2005-early 2006 reflecting employment growth (Figure 1.14). Labour force growth tracked employment growth quite closely – the unemployment rate was already low in 2003, providing little scope for employment growth without labour force growth – until late 2007, when employment growth started to fall much faster than labour force growth. The phenomenal surge in labour force growth, in turn, was attributable to large inflows of immigrants, mainly from the countries that joined the EU in 2004 (notably, Poland). The unemployment rate fell from around 3% at the end of 2003 to a trough of about 2% in late 2007-early 2008, but has since increased sharply.

Figure 1.14. **Growth in labour inputs**  
At annual rates



Source: Statistics Iceland.

StatLink  <http://dx.doi.org/10.1787/704546628261>

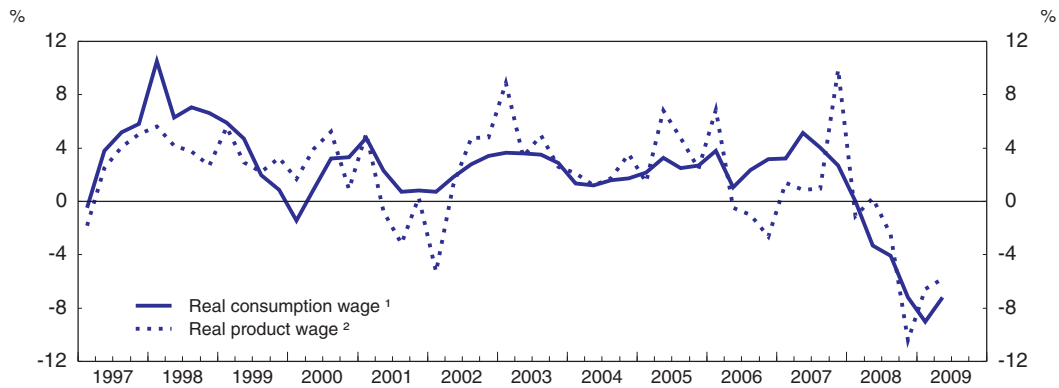
Real wage rate (i.e. nominal wage rates deflated by the CPI) growth picked up over the business cycle expansion to a high of around 5% in 2007, comparable to the rates recorded at the previous business cycle peak (Figure 1.15). Private sector real wage rates grew more quickly than public sector wage rates over 2006-07, temporarily reversing the long-term trend (Figure 1.16). Growth in real product wage rates (i.e., nominal hourly wage rates deflated by the GDP deflator) exceeded hourly labour productivity growth during the economic expansion, suggesting that the labour market was overheating; real wage rates fell in 2008, largely correcting this excess wage growth (Figure 1.17). Nominal wage growth picked up markedly during the expansion, reaching a peak of around 10% from the previous year in late 2006-early 2007 (Figure 1.18). These rates were slightly higher than in the previous business cycle despite the increase in real wage rates being similar (see Figure 1.15), pointing to the lack of progress made in reducing inflation.

### **Inflation rose and monetary policy credibility remained weak**

Following the adoption of inflation targeting in 2001, CPI inflation accelerated from a cyclical low of around 2% over the first half of 2003 to 5.2% on average over the four years

Figure 1.15. **Growth in real wage rates**


At annual rates



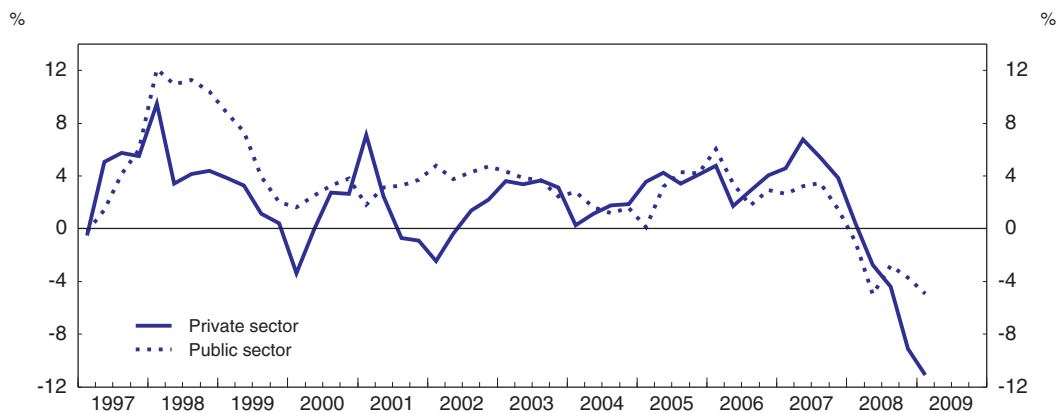
1. Change in the wage index deflated by the CPI.

2. Based on average for fixed hours earnings each month, deflated by the GDP deflator.

Source: Statistics Iceland.


StatLink  <http://dx.doi.org/10.1787/704550003245>Figure 1.16. **Growth in real wage rates in the private and public sectors**<sup>1</sup>

At annual rates

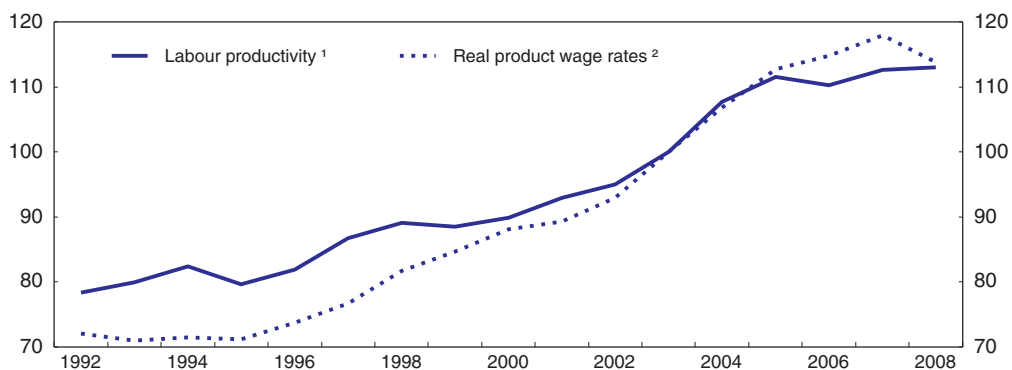


1. Change in the wage indices deflated by the CPI.

Source: Statistics Iceland.

StatLink  <http://dx.doi.org/10.1787/7045578124560>Figure 1.17. **Hourly labour productivity and real product wage rates**

Index, 2003 = 100



1. Real GDP divided by the product of total employment and average hours per week.

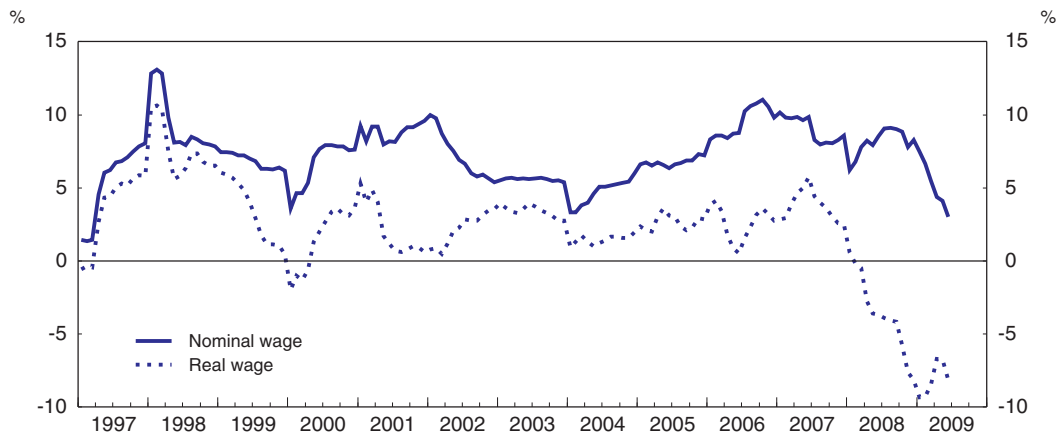
2. Compensation per hour worked deflated by the GDP deflator.

Source: Statistics Iceland.


StatLink  <http://dx.doi.org/10.1787/704643332312>

Figure 1.18. **Nominal and real wage growth**

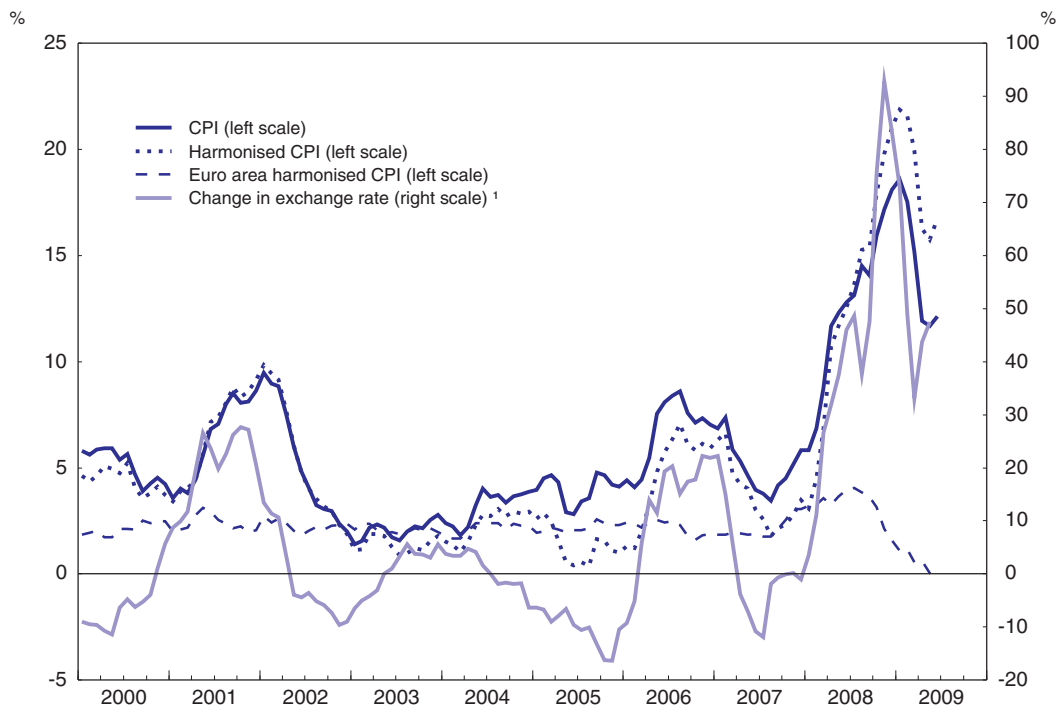
At annual rates



Source: Central Bank of Iceland.

StatLink  <http://dx.doi.org/10.1787/704647285257>

to the end of 2007, or about twice the official inflation target (Figure 1.19). This performance was a significant deterioration from the average annual rate of 3.5% over the previous eight years (i.e. to the December quarter of 2003). Inflation as measured by the harmonised consumer price index (HICP), which excludes owner-occupied housing costs, was just over 3%, somewhat higher than in the euro area, where inflation averaged 2.3%.

Figure 1.19. **Inflation**

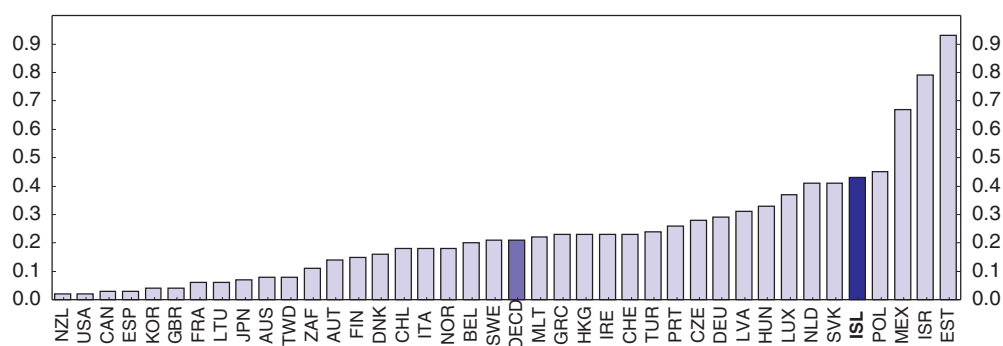
1. Króna per euro.

Source: Statistics Iceland; OECD, Analytical database.

StatLink  <http://dx.doi.org/10.1787/704677265718>


Inflation remained much more volatile in Iceland over the four years to the end of 2007 than in the euro area. The standard deviation of the quarterly annualised rate of HICP inflation over the four years to the December quarter of 2007 was 3.0% in Iceland compared with 0.9% in the euro area. These figures were virtually unchanged from those for the eight years to the December quarter of 2003. Such volatility makes it difficult for households and firms to distinguish between changes in relative prices and in inflation, reducing the efficiency with which resources are allocated and hence the economy's productive potential. While inflation tends to be more volatile in very small open economies (VSOEs), such as Iceland, than in larger developed economies, volatility in Iceland has nevertheless been much higher than in other VSOEs. Pétursson (2008) finds that the most important factor explaining higher inflation volatility in Iceland is high exchange rate pass-through (Figure 1.20). This is indicative of weak monetary policy credibility amongst other things and hence poorly anchored inflation expectations (Mishkin, 2008), as is evident in the way that inflation expectations have generally followed the movements in the exchange rate (Figure 1.21). The decline in the break-even inflation rate on government bonds since November 2008 despite the exchange rate having weakened somewhat could be an encouraging sign of greater monetary policy credibility although some survey-based measures remain high. Nevertheless, the large differences in measures of inflation expectations and their sensitivity to short-term economic news suggest that inflation expectations still need to be firmly anchored (Central Bank of Iceland, 2009).

Figure 1.20. **Exchange rate pass-through**<sup>1</sup>



1. Exchange rate pass-through is estimated as the cumulative effect of a 15% exchange rate shock after 8 quarters in a VAR model using the generalised impulse response approach. The estimation period is 1985-2005, except: Austria (1998), Czech Republic (1993), Estonia (1996), Hungary (1987), Iceland (1988), Israel (1987), Latvia (1995), Malta (1994), Mexico (1989), Poland (1992), Portugal (1997), Slovakia (1994) and Turkey (1995).

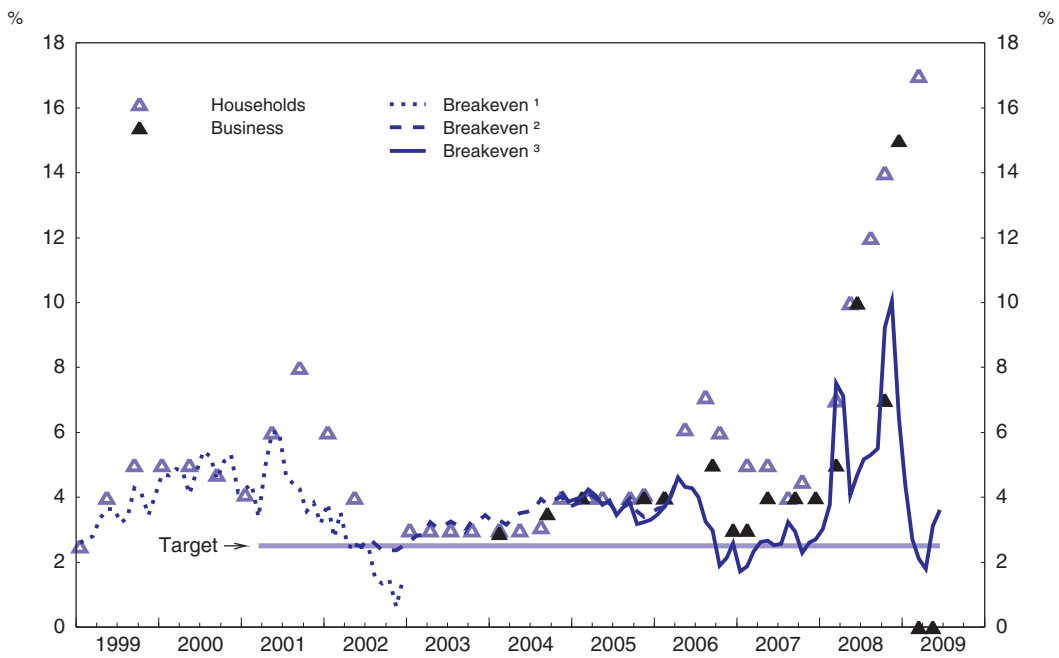
Source: Pétursson (2008).

StatLink  <http://dx.doi.org/10.1787/704707124012>

### **Government undertook some budget consolidation and eliminated government net debt**

General government net lending rose by some 8% of GDP over the five years to 2007, when it reached a surplus of 5½ per cent of GDP (Figure 1.22). Approximately two-thirds of this increase is attributable to higher revenues. Government property income, indirect taxes, and taxes on corporate profits all rose strongly as a share of GDP (Table 1.7), although taxes on corporate profits remained one of the lowest shares in GDP in the OECD – accordingly, the loss of corporate tax revenues from the collapse of the banking system

Figure 1.21. Inflation expectations

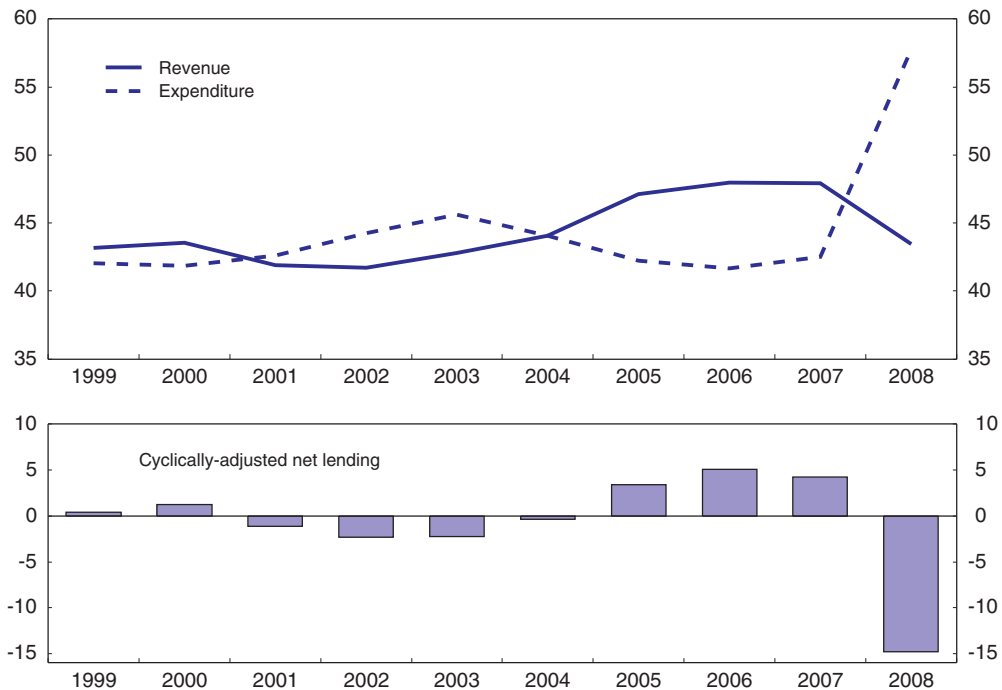


1. Spread between: RIKB 03 1010 and RIKS 03 0210 for January 2000 to April 2002.
2. Spread between: RIKB 13 0517 and RIKS 15 1001 for May 2002 to October 2004.
3. Spread between: RIKB 13 0517 and HFF 15 0914 since then.

Source: Central Bank of Iceland.

StatLink <http://dx.doi.org/10.1787/704737637013>

Figure 1.22. General government revenue, expenditure and net lending  
As per cent of GDP



Source: OECD, Economic Outlook database.

StatLink <http://dx.doi.org/10.1787/704833318613>

**Table 1.7. Decomposition of general government revenue and expenditure**  
Per cent of GDP

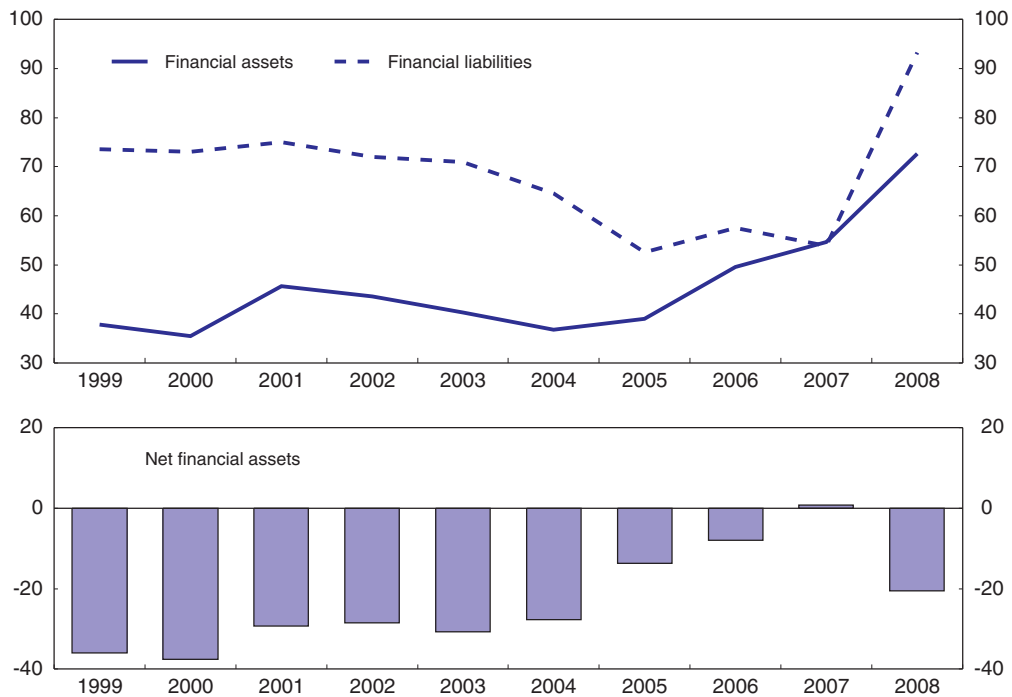
	2003	2004	2005	2006	2007	2008
<b>Total revenue</b>	42.8	44.1	47.1	48.0	48.2	43.5
Total tax revenue	33.6	34.8	37.4	38.1	37.9	33.1
Taxes on income, profits and capital gains	16.0	16.1	17.6	18.3	18.7	17.8
<i>of which</i>						
Payable by individuals	13.9	13.9	14.2	14.0	13.9	
Payable by corporations	1.2	1.0	2.0	2.4	2.5	
Taxes on sales and services	14.8	15.7	16.7	17.2	16.2	12.5
<i>of which</i>						
General taxes on goods and services	9.7	10.4	11.1	11.3	10.6	
Excises	3.3	3.4	3.7	3.7	3.6	
Social contributions	3.1	3.1	3.2	3.3	3.2	2.9
Grants	0.1	0.1	0.1	0.1	0.1	0.1
Other revenue	6.0	6.1	6.4	6.4	7.2	7.4
<i>of which</i>						
Property income	2.1	2.1	2.6	2.9	3.6	3.9
Sales of goods and services	3.5	3.5	3.5	3.2	3.2	3.0
<b>Total expenditure</b>	45.6	44.1	42.2	41.7	42.5	44.6
Current expense	43.9	42.0	40.9	39.5	40.1	42.0
Compensation of employees	16.3	15.7	15.6	15.3	14.9	14.8
Use of goods and services	11.3	11.1	10.7	10.6	10.9	11.0
Consumption of fixed capital	1.9	1.9	1.8	1.8	1.8	1.9
Interest	2.7	2.4	2.2	2.2	2.6	3.2
Subsidies	1.9	1.8	2.0	1.7	1.8	1.8
Grants	0.1	0.1	0.1	0.2	0.2	0.2
Social benefits	7.1	6.8	6.2	5.7	5.8	6.6
Other expense	2.5	2.2	2.3	2.1	2.2	2.6
Net investment	1.7	2.0	1.3	2.1	2.5	2.7

Source: Statistics Iceland.


cannot be too dramatic for the budget. Personal income taxes did not, however, rise as a share of GDP, despite the labour share of national income rising, as tax rates were cut. The largest contributions to the reduction in expenditure as a share of GDP were in compensation of employees and in social benefits. The OECD estimates that only one quarter of the increase in the budget balance over this period was cyclical, although there is considerable uncertainty about these estimates. Even though fiscal consolidation appears to have been considerable over this period, the government should have gone further, thereby providing a greater counterweight to the unsustainable boom in private domestic demand. The easing in fiscal policy in 2007, in particular, when the economy was well above potential and other macroeconomic imbalances in the economy were glaring, was inappropriate. Had greater fiscal consolidation been achieved, the increase in the current account deficit and appreciation of the real exchange rate would have been less than occurred (see below), reducing the economy's reliance on sustained foreign capital inflows and taking pressure off exporters. The structure of the economy would have remained closer to something that is sustainable.

In view of the subsequent banking and economic crisis, it is fortunate that government net debt fell so much over this period, from 31% of GDP in 2003 to a small net asset position (0.8% of GDP) in 2007, although, as noted above, it would have been preferable to have gone further (Figure 1.23).

Figure 1.23. **General government debt**  
As per cent of GDP



Source: Statistics Iceland.

StatLink  <http://dx.doi.org/10.1787/704845444245>

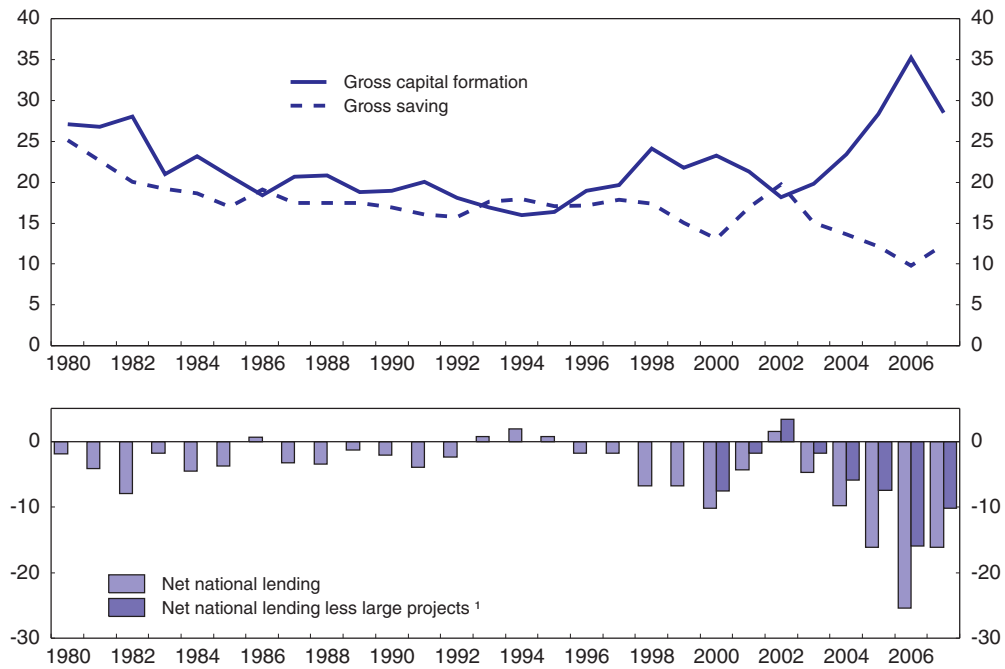
### **The current account deficit increased and the real exchange rate appreciated**

The current account deficit (or equivalently, national net lending deficit) soared from 5% of GDP in 2003 to 25% of GDP in 2006 (Figure 1.24). From a net lending point of view, most of the increase in the deficit reflects a rise in investment, of which around one half was related to large-scale energy intensive projects. Abstracting from these projects, the increase in investment is estimated to account for approximately two thirds of the rise in the adjusted deficit, from 2% of GDP in 2003 to 16% of GDP in 2006. Even abstracting from the large-scale projects, investment was higher than during the previous expansion and considerably greater than during the previous two decades. Saving fell somewhat more than in the previous upturn and was noticeably lower than before the mid-1990s. National net lending rose to minus 16% in 2007, mainly reflecting a decline in investment (large-scale project investment alone fell by 4% of GDP). In light of the improvement in government net lending in recent years, the deterioration in national net lending reflects an even larger fall in net lending of the private sector: such net lending fell by almost 20% of GDP between 2003 and 2007, to minus 21.5% of GDP.

Most of the increase in the current account deficit from 2003 to 2007 reflected a growing deficit on goods and services (Figure 1.25). There was, however, also a significant increase in the deficit on capital factor income, which doubled to 5% of GDP over this period. This increase reflects the growing dividends and reinvested earnings on non-residents' investments in Iceland, notably in large-scale energy related projects; Iceland residents' capital income net of interest payments to non-residents rose by about 3% of GDP over this period.



Figure 1.24. **National gross investment, gross saving and net lending**  
As per cent of GDP



1. Estimates of the large projects by the Ministry of Finance.

Source: Statistics Iceland.


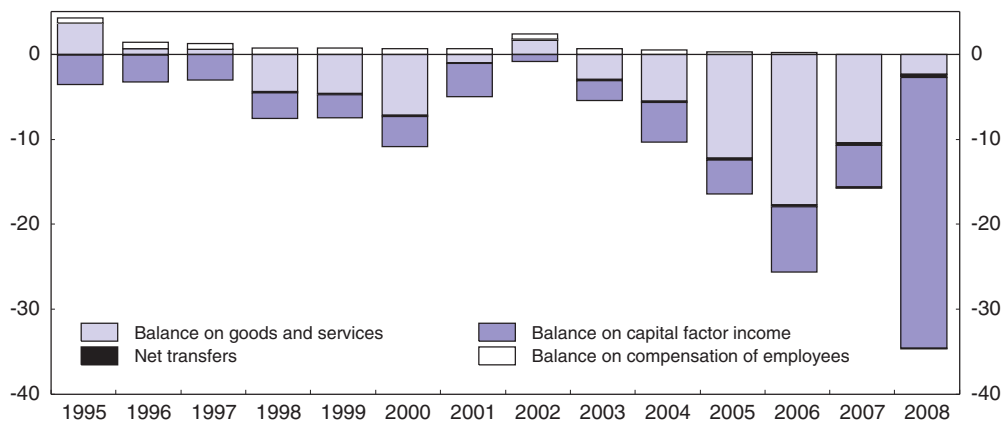

StatLink  <http://dx.doi.org/10.1787/704852420701>

Figure 1.25. **Contributions to the current account balance**  
As per cent of GDP

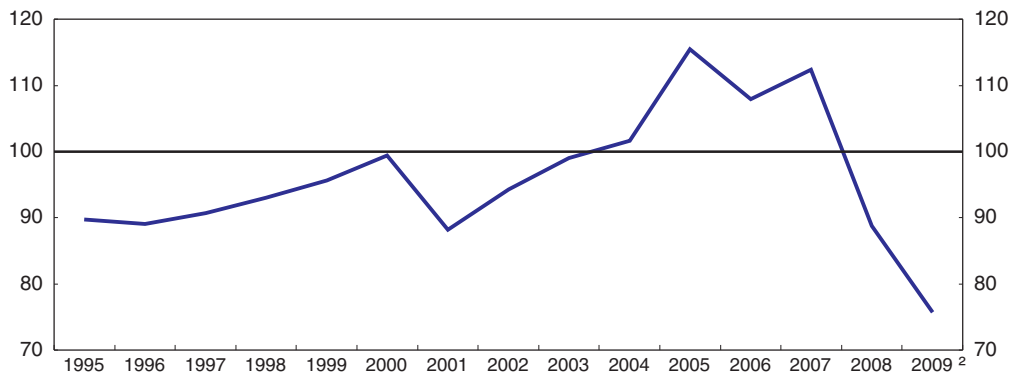


Source: Central Bank of Iceland.

StatLink  <http://dx.doi.org/10.1787/705010577234>


The real effective exchange rate (relative CPI-based) appreciated by 13% over the four years to 2007, taking it to 12% above the average value since 1980 (Figure 1.26). The IMF estimates that Iceland's real effective exchange rate was overvalued by 15-25% in the first half of 2007 (IMF, 2008a).

Figure 1.26. **Real effective exchange rate**<sup>1</sup>  
Index, 1980-2008 = 100



1. Based on relative CPIs.
2. First half 2009 estimates.

Source: OECD, *Main Economic Indicators*.

StatLink  <http://dx.doi.org/10.1787/705031483426>

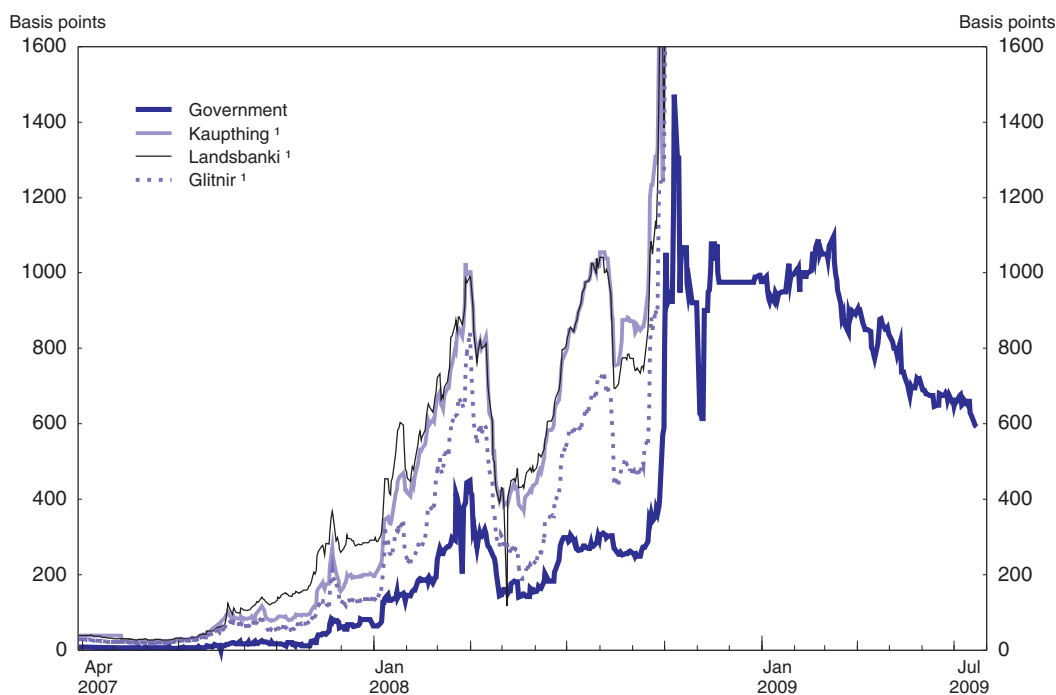
## The banks were unable to resist the deterioration in global financial markets

Trouble started mounting for Iceland's banks as soon as the global financial crisis began in the summer of 2007. They were known to be highly exposed to global equity markets through the loans that they had made to Icelandic investment companies and related entities. There were concerns about their complex ownership structures and potential problems with large exposures and connected lending, about them being less closely supervised than other banks in the EU, and about their reliance on wholesale funding at a time when wholesale funding markets were freezing. In addition, there were serious doubts about the capacity of the Icelandic government to be able to rescue such large banks in the event that they got into difficulty. In the financial environment that was unfolding, banking without such potential backing was becoming extremely dangerous. Reflecting these concerns, Credit Default Swap (CDS) rates on Icelandic banks' debt, and hence their borrowing costs, rose by 200-300 basis points by the end of the year (Figure 1.27), more than for most banks in Europe or the United States. Despite these difficulties, Icelandic banks massively expanded foreign lending between July and December 2007 (see Figure 1.3), at a time when many banks were obliged to honour credit lines to companies or Special Purpose Vehicles (SPVs) that were having difficulty raising funds.

The global financial crisis took a turn for the worse in the first months of 2008, culminating in the US government-backed takeover of Bear Stearns by JP Morgan in March. Icelandic banks' CDS rates soared in this period, reaching 800-1 000 basis points in late March (see Figure 1.27). These rates were much higher than for most other banks in Europe or the United States and effectively meant that wholesale markets were closed to Icelandic banks. As they all had large amounts of debt maturing over 2009-2011, and Glitnir also had a large bond maturing in October 2008 (Figure 1.28), their rollover risk had become acute.

The Icelandic banks therefore turned to the CBI and ECB discount windows for funding on a large scale. The ECB became very concerned about the relatively large amounts that the Icelandic banks were borrowing from the system through the Central Bank of Luxembourg and about the quality of the collateral offered.<sup>10</sup> A significant part of the

Figure 1.27. Credit default swap (CDS) rates



1. CDS rates reached 2 872.5, 2 579.4 and 4 840.6 basis points for Kaupthing, Landsbanki and Glitnir, respectively, in early October when the banks were placed in receivership.

Source: Datastream and Bloomberg.


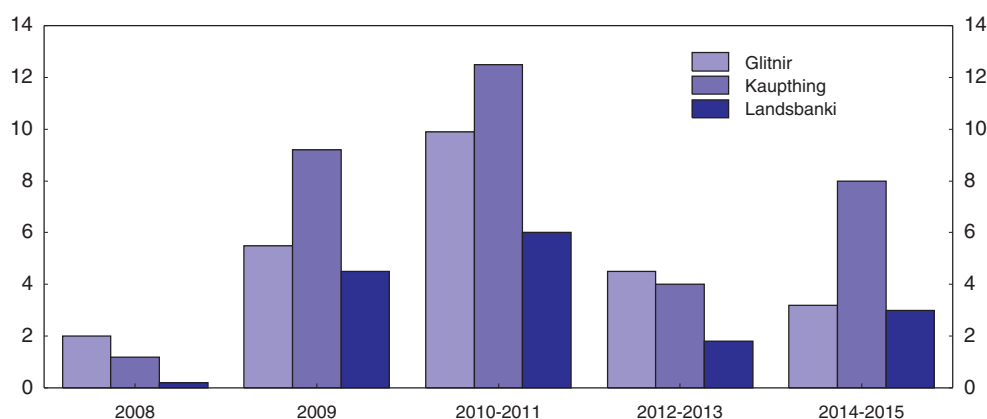
StatLink  <http://dx.doi.org/10.1787/705070760603>

Figure 1.28. Debt distribution of financial institutions

USD, million



Source: Central Bank of Iceland.

StatLink  <http://dx.doi.org/10.1787/705160568786>

collateral offered by the Icelanders consisted of claims against other Icelandic banks, so-called love letters. Furthermore, on the domestic front, in their operations with the CBI, the banks had used claims against each other or employed claims against Iceland's Icebank as collateral (i.e. they issued paper to Icebank, which issued its own paper to them, to be used as collateral for borrowing at the CBI) (Jännäri, 2009, p. 18). The ECB and the Central Bank

of Luxembourg required the use of such collateral to be scaled down, but two Icelandic banks subsequently exceeded the agreed limits.

At the same time, the UK Financial Services Authority (FSA) was becoming increasingly concerned about the large UK resident holding of deposits with Icesave, the UK branch of Landsbanki. The FSA held discussions with Landsbanki in February concerning its liquidity and in March initiated a plan to transfer Icesave accounts from branches to a UK subsidiary. Doing so would have brought Icesave under FSA supervision and would have transferred deposit guarantee liability from Iceland (Depositors' and Investors' Guarantee Fund, DIGF) to the United Kingdom. In fact, the transfer was never realised because Landsbanki was unable to transfer assets from its Luxembourg subsidiary to the UK operation without breaching debt covenants and because it could not satisfy FSA rules on large exposure limits.

As tensions in global financial markets eased following the actions of the US authorities to avoid failure of systemically important institutions such as Bear Stearns, Icelandic banks' CDS rates fell back significantly but still remained high. The near-death experience of the Icelandic banks during the first months of 2008 underscored the need for stronger government backing for the system. To strengthen such support, Parliament approved legislation empowering the government to borrow up to ISK 500 billion to bolster the reserves of the CBI. However, the authorities soon discovered that they could not borrow at reasonable rates – the CDS on government debt was 200-300 basis points – and in the end borrowed little.

Following the collapse of Lehman Brothers in mid-September, global financial markets deteriorated by more than at any time since the 1930s. The sale of a subsidiary that Glitnir had planned to use to finance the repayment of the bond maturing in October fell through and, with no other private funding possible, the bank was facing default. It requested help from the government, which agreed to pay € 600 million for a 75% stake in the bank. The value of Glitnir shares crashed, exposing Landsbanki to large losses as it had accepted large amounts Glitnir shares as collateral for loans extended to Glitnir's owners.

The UK FSA was very concerned about Icesave accounts, from which heavy withdrawals were occurring. On Friday 3 October, it required 200 million pounds be paid to an account at the Bank of England by Monday 6 October to meet further outflows from these accounts. The ECB also asked the Icelandic banks to reduce their debts with it. The Ministry of Business Affairs (MoBA) sent a letter to the UK authorities stating that the Icelandic government stood ready to support the DIGF, so that it would be able to meet the minimum compensation amounts stipulated by the EU Deposit Guarantee Schemes Directive in the event of the failure of Landsbanki. The government and the CBI refused Landsbanki's request to lend it 200 million pounds. They did, however, agree to lend Kaupthing € 500 million as it was able to post better quality collateral and was judged to have a greater chance of survival.

Parliament passed emergency legislation on Monday 6 October, allowing the FME to intervene in the banks' operations and take them over; this legislation had been under preparation since the spring. The next day, the FME took control of Landsbanki and Glitnir. On the following day, the UK authorities froze assets relating to Landsbanki in the UK.<sup>11</sup> The FSA also determined on the same day that the Kaupthing subsidiary Kaupthing Singer Friedland (KSF) was in breach of liquidity regulations and prevented it from accepting further deposits and obtained a court order to place it into administration. Thereby

Kaupthing was also effectively taken out of business and the FME took control of the bank and nominated a resolution committee on 9 October.

The government partitioned the failed banks into new banks, which took over domestic deposits and loans booked through domestic branches, and old banks to be liquidated. The aim of making this split was to enable the domestic payments system to continue functioning, which occurred. The new banks are to compensate creditors of the old banks for any excess of assets over liabilities transferred. The government will recapitalise the new banks when the compensation instruments have been issued to the old banks.

## Aftermath of the collapse of Iceland's main banks

### **Government had incurred substantial net debts as a direct result of the failure of the banks**

Net government (and central bank) debt has increased as a direct result of the failure of the banks by around 13% of GDP. Most of this figure reflects funds advanced to the banks by the CBI and, to a much lesser extent, the Treasury. Following the failure of the banks, it transpired that the CBI had made substantial loans to banks through its discount window based on very weak collateral, as noted above. When the banks failed, the CBI was holding ISK 270 billion (18.4% of GDP) of this paper, since written down to ISK 95 billion. The Treasury also made such loans to the primary dealers (i.e. the banks that failed), resulting in further losses of ISK 17 billion (1.2% of GDP) and accounting for the remainder of the increase in net debt so far as a direct result of the failure of the banks. In addition, the government will incur debt to meet minimum EU deposit guarantee requirements on Landsbanki's Icesave accounts in the United Kingdom and the Netherlands. The UK and Netherlands governments reached an agreement with the Icelandic government in June 2009 under which they will lend ISK 630 billion (US\$4.95 billion) to Iceland's DIGF at an annual interest rate of 5.5% to cover these obligations. The DIGF will not have to make repayments for seven years, but must pay off the loan within 15 years. The aim of this arrangement is to enable the receivers to sell Landsbanki assets in an orderly fashion, thereby maximising their value. Any loan repayments in excess of asset realisations will be paid by the Icelandic government. Assuming a 75% recovery ratio, the CBI estimates that the present value of the cost to the Icelandic government of meeting this obligation is ISK 240 billion (17% of estimated GDP in 2009). The government also fully guaranteed domestic deposits. It is uncertain how much this commitment will cost.

To avoid such losses in any future banking crisis, controls on the quality of collateral offered at the CBI's discount window will need to be strengthened and government authorisation obtained for such large use of the discount window that the CBI's solvency is threatened.

### **A Stand-By Arrangement was agreed with the IMF**

In the wake of the crisis, the government sought an IMF Stand-By Arrangement (SBA) to help to build confidence in the recovery programme and to obtain necessary foreign currency funding at a reasonable cost – such borrowing in private international capital markets would have been prohibitively costly given high CDS rates on Iceland government debt (they were still around 900 basis points in spring 2009). The SBA, which was agreed in November 2008, foresees external financing of US\$5.1 billion, of which US\$2.1 billion comes from the IMF (40% was made available immediately and the balance is to be paid out

in eight equal instalments subject to quarterly reviews) and the balance from other neighbouring countries, and lasts two years. In addition, the United Kingdom and the Netherlands agreed in principle to lend the Icelandic authorities the money needed for them to cover EU minimum deposit guarantees on Icesave accounts in these countries, with the terms of the loans being finally agreed in June 2009, as noted above. The SBA is in support of an economic policy programme that is aimed at addressing the following key challenges:

- *Prevent a further sharp depreciation of the króna to reduce the risk of adverse balance sheet effects, which would harm the economy.* This risk reflects the high leverage of the economy and very high share of foreign-exchange denominated and inflation-indexed debt. To this end, monetary policy was tightened to make króna assets more attractive to hold and the capital controls introduced by the government in the wake of the crisis were maintained.
- *Ensure medium-term fiscal sustainability by launching a strong medium-term fiscal consolidation programme starting in 2010.* While the expansionary measures in the original 2009 budget had to be reversed, no consolidation measures were required in 2009 except insofar as the starting position deteriorated (by ISK 20 billion, 1.3% of GDP) from what was originally envisaged (mainly owing to higher unemployment benefit payments). To this end, personal income tax rates and various excise taxes have been increased in 2009, additional taxes have been introduced and government expenditure cut back (see Chapter 2). Consolidation measures of around 3% of GDP per year are required over 2010-2013.
- *Develop a comprehensive bank restructuring strategy, including measures to ensure fair valuation of assets, maximise asset recovery, and strengthen supervisory practices.* Settling claims by depositors and other creditors in a fair, collaborative, and best-effort manner was considered to be essential to preserve Iceland's integration in the international financial system and to restore access to international capital markets.

### ***Restoring the smooth functioning of the banking system will contribute to the success of the recovery programme***

The new banks are not in a position to intermediate normally between lenders and borrowers: they have no capital and there is considerable uncertainty about the value of their assets and consequently of the compensation instruments that they must issue to the old banks to compensate creditors for any excess of assets over liabilities transferred to the new banks. Some of these problems should soon be resolved. The government reached agreement in July 2009 with the Resolution Committees of the old banks on the terms on which compensation agreements will be finalised, which is expected to occur by mid-August. It was conditionally agreed that the Resolution Committees of Glitnir and Kaupthing should have majority ownership of the new banks, which would involve these Committees capitalising Islandsbanki and New Kaupthing as part of the compensation agreement. The government and the Resolution Committee of Old Landsbanki agreed to a further period to allow completion of due diligence by the Resolution Committee, its advisors and creditor representatives and the finalisation of the terms of a bond instrument to be issued by New Landsbanki in connection with compensation. This bond is also expected to be issued in mid-August. The government will recapitalise the new banks as soon as the compensation agreements have been finalised. Recapitalisation will be achieved by the issue of new government bonds to the new banks. Each bank will be

prudently capitalised with a core tier 1 ratio of approximately 12%. In aggregate, it is expected that the total capitalisation will amount to approximately ISK 270 billion (19% of estimated GDP in 2009). In the event that both Glitnir and Kaupthing complete their share subscription agreements as described above, this amount would be reduced to approximately ISK 200 billion. These levels of capital commitment are significantly lower than the estimated commitment of ISK 385 billion at the time of the original transfer of assets and liabilities to the new banks in October 2008, leading to a lower fiscal cost and impact on gross state debt than originally envisaged.

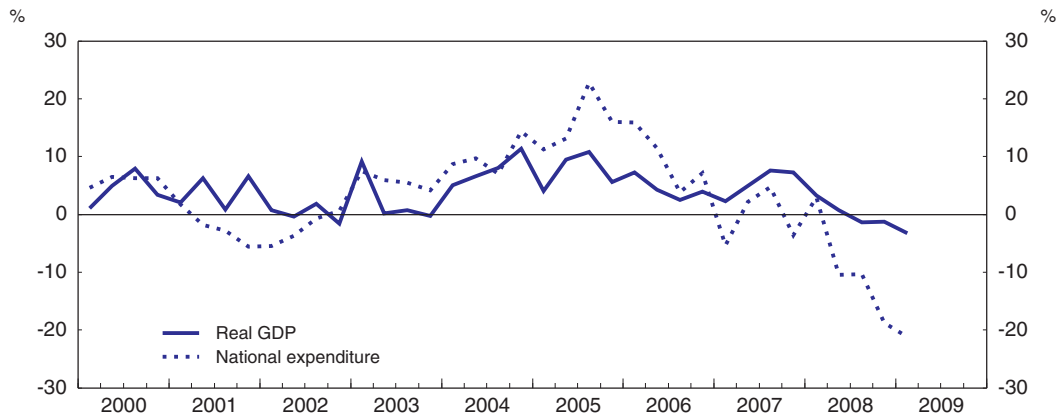
While the banks' assets have been substantially written down based on the valuations used to reach the final compensation agreements and the banks themselves will have relatively high capitalisation levels in recognition of the considerable uncertainty over the value of their assets, it may still be necessary to move bad assets into an asset management company to reduce uncertainty about the strength of the banks' balance sheets. The banks' physical operations (personnel and branch networks) also remain oversized for the Icelandic market, reducing their profitability. The banks' owners would benefit from scaling back these operations, which could even entail mergers (provided that this does not undermine competition in banking services). In this regard, it will be important that the government uses its ownership stakes in the banks to maximise the sustainable value of this investment rather to pursue other objectives (such as avoiding redundancies in the banking sector), which could stand in the way of the necessary bank consolidation. All of these measures would help to prepare the banks for full privatisation within the next few years.

A major problem with the structure of the new banks is that they have sizeable foreign currency denominated assets (although they will be considerably reduced once the full extent of write-downs to the investment groups is known), but almost no foreign currency liabilities. This exposes them to exchange rate risk and imposes negative carry costs (króna interest rates being significantly higher than foreign currency rates), albeit diminishing as domestic interest rates decline. These costs add to the adjustment burden required to respect the SBA fiscal consolidation programme. Once the exchange controls on capital movements are removed, however, the banks will be able to restore a hedged foreign-currency position and thereby eliminate the negative carry. It would be unfortunate if the banks were to seek to eliminate their foreign-currency risk exposure, which is likely to be short lived, by forcing clients such as exporters with hedged foreign-currency loans into króna loans, thereby creating a new foreign-currency exposure. Given that the real value of the króna appears to be well below its equilibrium value, such a foreign currency exposure could well end up inflicting heavy losses on exporters.

### ***The economy plunged into a deep recession but is expected to begin to recover in 2010***

Adjustment to the deteriorating economic environment began before the banks failed. Domestic demand growth, which had already fallen to moderate rates in 2007, plunged from the second quarter of 2008 (Figure 1.29). This followed the serious aggravation of the global financial crisis in the first quarter of 2008, culminating with the US government-backed rescue of Bear Stearns in March 2008. These events had curtailed access of the Icelandic banks to global capital markets. All private components of domestic demand were shrinking in year-on-year terms from the second quarter of 2008, with business investment and residential investment leading the way. GDP growth, however, declined less than domestic demand growth reflecting buoyant exports and falling imports.

Figure 1.29. **Growth in domestic demand and GDP**  
At annual rates



Source: Central Bank of Iceland.

StatLink  <http://dx.doi.org/10.1787/705167301732>

Labour-market adjustment lagged the economic downturn, as typically occurs. Employment growth slowed markedly, but was still relatively high in the third quarter of 2008 (see Figure 1.14). Together with a significant slowdown in immigration, this contained the increase in unemployment, from 2% in the third quarter of 2007 to 2½ per cent one year later. Nevertheless, real wage growth slowed markedly (see Figure 1.15), reflecting a surge in inflation that was not compensated in nominal wage rates (see Figure 1.18).

Inflation soared to 13.9% in the third quarter of 2008 from 3.8% one year earlier (see Figure 1.19). This increase resulted from the large depreciation of the króna exchange rate (29%) that had occurred since the global financial crisis began in the third quarter of 2007. As noted above, exchange rate pass-through into the domestic inflation rate is high in Iceland, reflecting low monetary policy credibility, amongst other things.

Following the failure of the banks, the contraction in all components of domestic demand deepened markedly. Consumers slashed spending in the face of falling real incomes, a large loss of wealth and an urgent need to deleverage. Residential investment fell sharply and firms drastically pruned general business investment expenditure in the face of a bleak economic outlook, the breakdown of financial intermediation, and the need to deleverage. Imports fell to such an extent that the trade balance jumped to close to zero; the current account deficit, however, widened to a record level (35% of GDP) owing to huge foreign losses by Icelandic investment companies, which resulted in a very large factor income deficit (32% of GDP). Deep cuts in employment and working time were made, pushing up the unemployment rate to 7.1% by the first quarter of 2009. Consumer price inflation increased further to 18.6% in the wake of the additional currency depreciation (the króna effective exchange rate depreciated by a further 27% between the third quarter of 2008 and the second quarter of 2009) associated with the failure of the banks, but had fallen to 12.2% by June 2009 as the effects of the depreciation started to dissipate, the fall in housing prices intensified (housing prices enter the CPI directly in Iceland through the user cost of owner-occupied housing services component), and the increasingly depressed economic conditions weighed on firms' pricing power. Wages have adjusted quickly to the crisis, falling by 6¼ per cent in real terms in the year to May 2009.



On the basis of macroeconomic policies that are consistent with the IMF programme, and assuming that the smooth functioning of the banking sector is restored by the end of the year, the OECD projects a deep recession this year, with GDP shrinking by around 7%, and a gradual recovery beginning next year as large energy-related projects get underway (Table 1.8). The unemployment rate should rise to a peak of 10% in 2010 while inflation should fall to around 2½ per cent. A further improvement in the trade balance should bring the current account near balance in 2010, despite a large factor-income deficit.

Table 1.8. **Short-term economic developments and prospects**

	2005	2006	2007	2008	2009	2010
	Current prices ISK billion	Percentage changes, volume (2000 prices)				
Private consumption	610.6	3.9	5.6	-7.7	-16.2	-1.9
Government consumption	252.6	4.0	4.2	2.8	-2.2	-3.3
Gross fixed capital formation	291.3	21.7	-12.8	-21.8	-51.3	7.0
Final domestic demand	1 154.5	8.4	0.0	-9.0	-21.0	-0.9
Stockbuilding <sup>1</sup>	-0.9	1.1	-0.6	-0.4	1.0	0.1
Total domestic demand	1 153.7	9.4	-0.6	-9.3	-18.6	-0.8
Exports of goods and services	323.9	-4.9	7.7	7.1	-1.0	0.8
Imports of goods and services	451.3	10.4	-1.0	-18.0	-26.3	1.2
Net exports <sup>1</sup>	-127.4	-6.1	6.2	10.6	12.1	-0.1
GDP at market prices	1 026.3	4.5	5.5	0.3	-7.0	-0.8
GDP deflator		9.0	5.6	12.2	9.2	3.6
<i>Memorandum items</i>						
Consumer price index		6.7	5.1	12.7	10.8	2.4
Private consumption deflator		7.5	4.7	14.0	11.4	2.4
Unemployment rate		2.9	2.3	3.0	8.4	9.9
General government financial balance <sup>2</sup>		6.3	5.4	-14.3	-10.7	-7.2
Current account balance <sup>2</sup>		-25.0	-15.4	-34.6	-3.0	-1.1

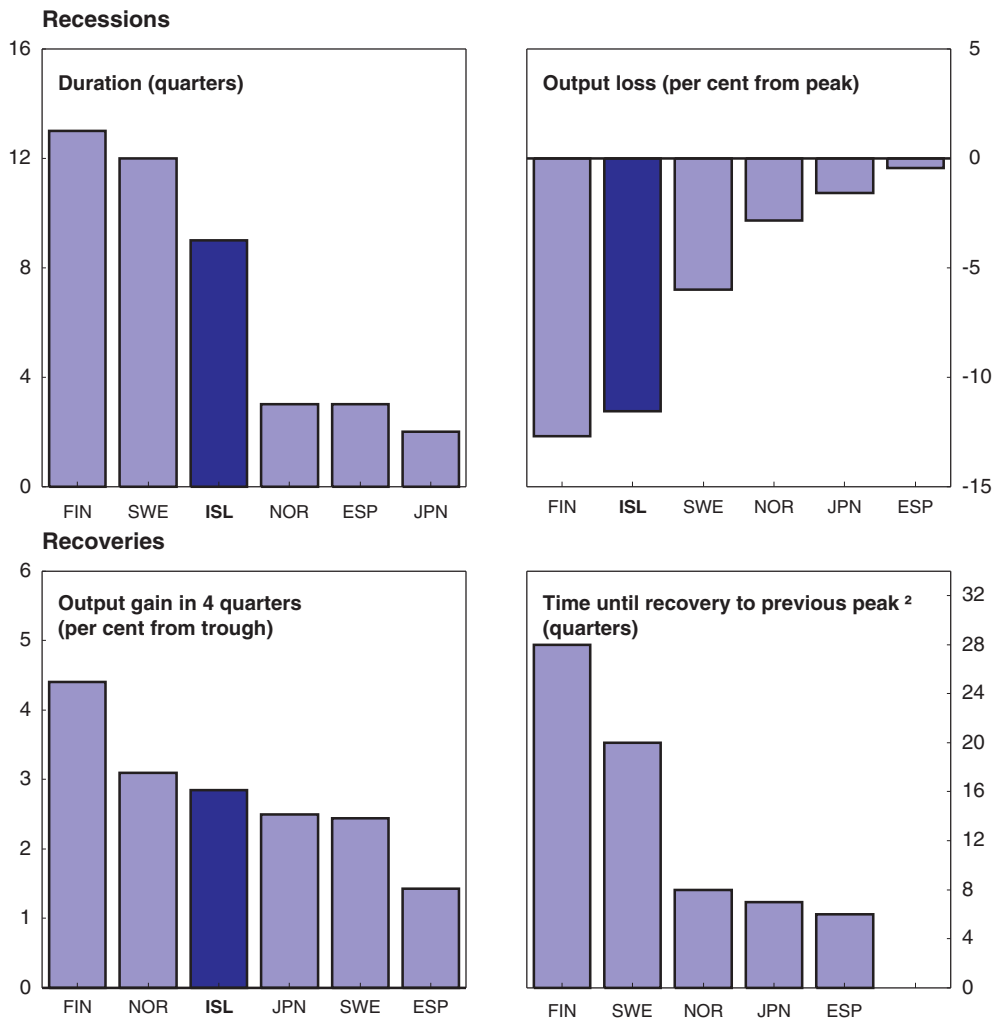
National accounts are based on official chain-linked data. This introduces a discrepancy in the identity between real demand components and GDP. For further details see OECD *Economic Outlook Sources and Methods* ([www.oecd.org/eco/sources-and-methods](http://www.oecd.org/eco/sources-and-methods)).

1. Contributions to changes in real GDP (percentage of real GDP in previous year), actual amount in the first column.

2. As a percentage of GDP.

Source: OECD *Economic Outlook 85* database.


Compared with the completed recessions in the other developed countries that have had big financial crises in recent decades – the “Big Five” financial crisis countries identified by Reinhart and Rogoff (2008) – the OECD estimated recession in Iceland is amongst the longest and is one of the deepest (Figure 1.30). The strength of the projected recovery from the trough is comparable to those in most of the other countries. Based on the experience of these countries and the scale of the drop in output from the peak, which is comparable to that which occurred in Finland in the early 1990s, it could take six or seven years for output in Iceland to recover to the peak reached in the third quarter of 2007.

Figure 1.30. **Recessions and recoveries: Iceland and the "Big Five" financial crisis countries**<sup>1</sup>

1. The "Big Five" financial crisis in recent years identified by Reinhart and Rogoff (2008) include Finland (1990-93), Japan (1993), Norway (1988), Spain (1978-79) and Sweden (1990-93).

2. The time to recovery to the previous peak for Iceland extends well beyond the OECD projections horizon, which presently ends in 2010 Q4. At this time, the OECD projects that around 20% of the drop from the peak will have been recovered.

Source: OECD, National Accounts.

StatLink  <http://dx.doi.org/10.1787/705252712577>

## Prudential supervision and regulation need to be strengthened

The global financial crisis has exposed weaknesses in prudential supervision and regulation in most countries. An important theme to emerge from studies of what went wrong is that the absence of effective macro-prudential supervision allowed major risks to the stability of the financial system to grow unchecked (Box 1.2 for definitions of macro- and micro-prudential supervision). In Iceland, these risks developed further than in other countries, which in the end proved fatal. Weaknesses in micro-prudential supervision have also been exposed, particularly in Iceland, which also need to be corrected.

### Box 1.2. **Macro- and micro-prudential supervision\***

Macro-prudential supervision is aimed at limiting the distress of the financial system as a whole in order to protect the overall economy from significant losses in real output. While risks to the financial system can in principle arise from the failure of one financial institution alone if it is large enough, the much more important systemic global risk arises from a common exposure of many financial institutions to the same risk factors. Macro-prudential analysis must therefore pay particular attention to common or correlated shocks and to shocks to those parts of the financial system that trigger contagious knock-on or feedback effects.

Micro-prudential supervision, which has traditionally been the focus of attention of supervisors, aims to limit the distress of individual financial institutions, thus protecting the customers of the institution in question. By preventing the failure of individual financial institutions, micro-prudential supervision attempts to mitigate the risk of contagion and the subsequent negative externalities in term of confidence in the financial system.

\* This box is based on the de Larosière (Chair) (2009) report.

A key lesson from the global financial crisis is that macro-prudential supervision cannot be effective unless it can somehow impact on supervision at the micro-level (de Larosière Group, 2009). Iceland had a financial stability regulator, the CBI, but its role was limited to issuing warnings about threats to financial stability. There was no legal basis for translating these warnings into changes in micro-prudential policy settings to restrain bank behaviour that was putting financial stability at risk.

The report by the former Finnish bank supervisor, Mr. Jännäri, which was commissioned by the authorities to recommend improvements in prudential regulation and supervision, contains recommendations concerning both macro- and micro-prudential supervision. The major recommendations are reproduced in Box 1.3.

### **Macro-prudential supervision needs to impact micro-prudential supervision to contain the build-up of systemic risk**

#### ***Common exposure of the main banks to the same risk factors***

The three main banks were all pursuing the same core expansion strategy – borrowing abroad, primarily in wholesale markets, to finance highly-leveraged Icelandic investment groups' purchases of equity assets abroad (primarily through outward foreign direct investment). In most cases, collateral for these loans was shares in the companies bought. This strategy indirectly exposed the banks to equity market risk – when global equity markets deteriorated sharply following the failure of Lehman Brothers, these investment groups had become insolvent and the value of any collateral that they had posted was greatly diminished, resulting in large credit losses for the banks. The fact that the banks had mainly borrowed in wholesale markets added to their woes because such financing was unavailable following the failure of Lehman Brothers. The banks had also grown to be too big for the Icelandic government to rescue. Banking under these conditions became very risky during the global financial crisis.

The banks also greatly expanded lending to other Icelandic residents, fuelling an unsustainable boom in domestic demand. While these residents' collateral appeared to

**Box 1.3. Major recommendations of the Jännäri Report on prudential regulation and supervision**

1. Decrease the number of ministries that have a hand in financial legislation or that are otherwise involved in the financial markets.
2. Merge the CBI and the FME, or at least bring them under the same administrative umbrella (as in Finland and Ireland).
3. Give more discretionary powers to the FME and encourage it to use its powers more forcefully.
4. Create a national credit registry at the FME to diminish credit risks in the system and to provide a better overview of large exposures at the national level.
5. Lay down tougher rules and, subsequently, apply strict practice on large exposures, connected lending and quality of owners, using discretionary best judgment when necessary.
6. Conduct more on-site inspections to verify off-site supervision and reports, particularly on credit risk, liquidity risk and foreign exchange risk.
7. Review and improve the deposit guarantee system, closely following the developments with the EU.
8. Participate actively in international cooperation on financial regulation and supervision, particularly within the EEA and EU.

support such a build-up in debt, this collateral had been grossly inflated by an asset price boom. Tightening credit conditions, even before the final crash in October 2008, had resulted in sharply lower share prices and real housing prices, eroding residents' capacity to support such high debt levels. The decline in asset values since then, and hence in firms' equity capital and households' net wealth, has been precipitous, necessitating rapid deleveraging. While such lending did not play a key role in the demise of the banks, it will cause credit losses for the banks going forward.

The banks also became indirectly exposed to foreign exchange risk, even though they were fully hedged themselves. They made foreign-currency denominated loans to residents who were not themselves fully hedged. As noted above, it is unclear the extent to which unhedged foreign-currency loans were made to non-financial firms as the bulk of foreign-currency loans were probably made to investment firms, which were acquiring foreign assets. Even so, there is evidence of some firms having borrowed in foreign currency without having matching foreign-currency assets or revenues, for example in the construction sector. The foreign-currency loans made to households, which were usually denominated in Swiss Francs or Japanese Yen, were not hedged. In light of the large depreciation of the króna since the beginning of 2008, the banks are likely to incur large credit losses on foreign-currency loans to residents that were not hedged.

***To restrain the build-up of systemic risks, macro- and micro-prudential supervision must interact***

The CBI, which is the financial stability regulator, warned about some of these risks but had no means of translating the warnings into action at the micro-prudential supervision level. At the same time, the micro-prudential regulator (the FME), which is charged with supervising individual financial institutions, had no legal basis for modifying

its practices to head-off systemic risks that did not arise from the potential failure of an individual financial institution. If such a scenario is to be avoided in the future, it will be necessary to give a legal basis for tightening prudential supervision settings to counter a build-up in systemic risk, such as by implementing countercyclical capital adequacy requirements and imposing additional capital requirements on foreign-currency denominated lending to entities for which such borrowing is not hedged. In addition, the CBI will need to have timely access to the required information from the FME, which did not always occur. Putting such a reform into practice could require merging the CBI and the Financial Services Authority (FME), or at least bringing them under the same administrative umbrella (as in Finland and Ireland), as planned.

### ***Micro-prudential supervision needs to be strengthened***<sup>12</sup>

As noted above, the three main banks had unusually large exposures to highly leveraged firms or individuals whose main activity was investing in shares or venture capital or speculative activities. At the end of June 2008, there were a total of 23 exposures over the 10% limit of own funds (6 to 10 in each bank). These exposures constituted 94-174% of each bank's own funds. The Jännäri Report considered that it was very unusual for banks as large as these to have so many large exposures of this nature and judged bank behaviour in this respect to have been highly imprudent. Indeed, based on information on exposures between 3 and 10% of own funds collected in July 2008, it appears that the true extent of large exposures was even greater because some of these smaller exposures appear to have been connected to the exposures over the 10% threshold. While the large exposures were within the generous limits (25-800% of capital) provided for in the Basel and EU frameworks, the Jännäri Report notes that these limits were never intended to be used by large banks for highly leveraged international deals: rather, they had been set this high to allow small local banks to assist local clients in need of funding for investment in productive capacity. The Jännäri report concludes that stronger regulation and stricter practice are needed in respect of large exposures and notes that the Basel II framework will facilitate this tightening in regulation and supervision. As some of the customers with large exposures had loans with more than one of the banks, raising systemic stability concerns, the Jännäri Report also recommends that a national credit register be established to monitor this risk better.

The problem of large exposures (and connected lending) was aggravated by the banks' complex and opaque ownership structures, which made it very difficult for the FME to ascertain with legal certainty the true extent of large exposures (and connected lending). The Jännäri Report notes that the pattern used by some of the major investor groups to disguise true, effective ownership is a sign of poor corporate culture and recommends tighter rules on transparency, more vigilance, and greater discretionary powers for the supervisors to counter such practices.

While the banks appeared to be well capitalised, some of this capital was of doubtful quality. The highly leveraged controlling shareholders had been allowed to borrow up to two thirds of their investment in the banks against the collateral of their shares in the banks. When these shareholders incurred catastrophic equity market losses, the loans had to be written down sharply, revealing that the banks had less capital than supposed. The Jännäri Report judged these practices as highly imprudent and recommended tighter rules and supervision against such arrangements in the future.

As noted above, the banking system had also become too large and complex for the FME to supervise effectively. It had neither the quantity of staff nor the variety of skills needed. In addition, it faced high staff turnover (often at double digit rates), partly caused by conditions of employment being much less attractive than at the banks. The banks had successfully lobbied to prevent the FME from getting the funding increases that it needed. While the FME's resources are likely to be adequate to supervise the smaller and simpler banks that will emerge from the restructuring process, it will be important not to allow the banks to become too big and complex again for the FME to be able to fulfil its supervisory duties effectively.

When the government disposes of its equity stakes in the banks, it will be important not to repeat the same errors that were committed when the banks were privatised at the beginning of the decade – controlling stakes in the banks should not again be sold to local investor groups, but rather shares should be sold to diversified shareholders or to reputable foreign banks. Moreover, it will be important to ensure that local investor groups do not subsequently acquire control of the banks. This calls for tougher rules and stricter practice on the quality of bank owners (the framework in Iceland for approving qualifying holdings' in banks is described in Jännäri, 2009, pp. 33-34), as recommended in the Jännäri Report. In particular, the Jännäri report recommends that the financial situation and soundness of the applicant be thoroughly scrutinised and that the funding of the proposed ownership be fully disclosed to the FME. The Report goes on to state that the FME should use boldly its right to refuse a qualifying holding in cases where it is convinced that such a holding would impede the efficient supervision of the bank in question. In addition, the Report recommends that the FME should be more courageous in using its discretionary powers with the law being changed if necessary to facilitate this process.

Entry of foreign banks into Iceland's domestic market could be highly beneficial for Icelanders, notably by giving access to much needed expertise and strong international banking networks. In addition, such banks would be unlikely to abandon their relatively small Icelandic subsidiaries if they got into difficulties as this would be very costly to the international bank's reputation, relieving the Icelandic taxpayer of the burden of rescuing banks. Other small countries, such as New Zealand, have found that having a banking system that consists almost entirely of well-run fully-owned subsidiaries of foreign banks particularly advantageous during a period of global financial turmoil – these banks continue to be well regarded in financial markets, facilitating ongoing access to capital markets on favourable terms.

#### Box 1.4. **Recommendations to improve the financial system**

##### **Reforms to limit fiscal costs in any future banking crisis**

*Review and improve the deposit guarantee system, closely following developments within the EU, to protect the taxpayer from new large costs.*

*Strengthen controls on the quality of collateral offered at the Central Bank of Iceland (CBI) discount window to ensure that the CBI, and hence the taxpayer, is never again left holding collateral of little value if banks fail. At a minimum, the mechanisms by which banks “manufactured” capital should not be allowed to work again. Government authorisation should be required for a substantial expansion of the use of discount window facilities that have the potential to threaten CBI solvency.*

**Box 1.4. Recommendations to improve the financial system (cont.)****Reforms to restore the smooth functioning of the banking system**

*Move bad assets into an asset management company to reduce uncertainty about the strength of banks' balance sheets arising from uncertainty about the extent to which assets will eventually have to be written down.*

*Streamline the banks to make them profitable. This is likely to entail downsizing and merger (provided that this does not undermine competition in banking services).*

*The government should not require the banks to resolve their short-term currency mismatch and associated negative carry problems by obliging clients to switch their foreign-currency loans into króna loans where that would create a foreign-currency exposure for the clients. Given that the the real value of the króna appears to be well below its equilibrium value, such a foreign currency exposure could well end up inflicting heavy losses on exporters.*

**Reforms to strengthen prudential regulation and supervision**

*To restrain the build-up of systemic risks in the future, macro-prudential supervision should have timely access to the required information and should be given a legal basis to restrain bank behaviour. To implement this reform effectively, it may be necessary to merge the CBI, the macro-prudential supervisor, and the Financial Services Authority (FME), the micro-prudential supervisor, or at least bring them under the same administrative umbrella, as planned.*

*Bank supervisors should not again allow the banking system to become too large and complex for them to be able to carry out their supervisory duties effectively.*

*Bank supervisors should lay down tougher rules, and subsequently apply stricter practice on large exposures, connected lending and quality of owners, using discretionary judgement when necessary, as recommended in the Jännäri report.*

**Notes**

1. No data are available on the breakdown of the three main banks' consolidated liabilities between residents and non-residents.
2. The effects of the structural changes in the domestic mortgage market (greater access to credit and lower mortgage rates) on domestic housing prices were analysed in Elíasson and Pétursson (2009). They predicted in this paper, which was originally written in 2005-06, the housing bubble and its subsequent collapse.
3. Disposable income is measured before the deduction of interest payments as the aim is to measure affordability rather than how much disposable income remains after paying interest costs, most of which are related to housing loans.
4. Direct comparisons between Figure 1.8 and Figure III.5 in OECD (2005) are difficult to make because the formulas used for calculating the user cost of capital were somewhat different. The Icelandic measure allows for real capital gains but not for taxes, in contrast to the OECD measure, and measures depreciation differently (an inverse geometric form in Iceland, a constant rate in the OECD calculations).
5. Total financial liabilities (including equities) of non-financial companies in Iceland to the domestic credit system, which are the figures comparable to those for the United Kingdom, rose from 138% of GDP in 2003 to 297% of GDP in 2007.
6. Stock-market capitalisation of non-financial firms in Iceland has been approximated by deducting from total stock-market capitalisation (as reported by the Central Bank of Iceland) the stock-market capitalisation of the three main banks (Kaupthing, Landsbanki, and Glitnir), as reported in their annual reports.

7. By way of comparison, the median financial leverage ratio for S&P 500 industrial companies at the end of 2008 was 2½.
8. Pension fund assets comprise approximately one third of total household assets. Pension funds' share of equities in total assets in turn was approximately one third over this period, indicating that households' indirect holdings of equities through pension funds represented about one ninth of their total assets; approximately 40% of pension funds' equities were domestic. Households' other holdings of equities amounted to about 10% of total assets.
9. This analysis is based on data for the DMBs and Miscellaneous Credit Undertakings, the most important of which is the Housing Finance Fund (HFF). These two groups of institutions accounted for 86% of household borrowing from the credit system at the end of 2007.
10. This and the next five paragraphs draw heavily on Jännäri (2009).
11. The UK authorities did so using the powers under the UK Anti-Terrorism, Crime and Security Act 2001. The freezing order was made under separate provisions from the anti-terrorist ones. These other provisions confer the power to freeze assets where the UK authorities believe action has been taken, or is likely to be taken, that is to the detriment of the UK economy (Jännäri, 2009).
12. This section draws extensively from the Jännäri (2009) Report.

### **Bibliography**

- Central Bank of Iceland (2009), *Monetary Bulletin*, 2009/2.
- Danielsson, Jon, and Gylfi Zoega (2009), "The collapse of a country", <http://riskresearch.org/>.
- De Larosière (Chair) (2009), "The high-level group on financial supervision in the EU – Report", [http://ec.europa.eu/internal\\_market/finances/docs/de\\_larosiere\\_report\\_en.pdf](http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf).
- Eliasson, L and T. Pétursson (2009), "The residential housing market in Iceland: analysing the effects of mortgage market restructuring", *Housing Studies*, 24, 25-45.
- IMF (2008a), *Iceland: 2008 Article IV Consultation*.
- IMF (2008b), *Iceland: Financial Stability Assessment – Update*.
- Jännäri, Kaarlo (2009), *Report on banking regulation and supervision in Iceland: past, present and future*, [http://eng.forsaetisraduneyti.is/media/frettir/KaarloJannari\\_\\_2009.pdf](http://eng.forsaetisraduneyti.is/media/frettir/KaarloJannari__2009.pdf).
- Mishkin, Frederic (2008), "Globalization, macroeconomic performance, and monetary policy", NBER Working Paper 13948.
- OECD (2005), *OECD Economic Outlook*, No. 78, December, Paris.
- Pétursson, Thórarinn (2008), "How hard can it be? Inflation control around the world", Central Bank of Iceland Working Paper No. 40.
- Reinhart, Carmen and Kenneth Rogoff (2008), "Is the 2007 US sub-prime crisis so different? An international historical comparison", NBER Working Paper No. 13761.



## ANNEX 1.A1

## Progress in structural reform

Past recommendations	Actions taken and current assessment
<b>A. Financial markets</b>	
Charge the Housing Financing Fund (HFF) a fee reflecting the cost of the government guarantee, explore the possibility of the HFF wholesaling mortgages.	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>B. Educational and training</b>	
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 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.
<b>C. Health care</b>	
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.	Steps have been taken to increase competition in the provision of services where that is appropriate, such as the recent tendering of an institutional short-term health service for the elderly with emphasis on rehabilitation. Given the small size of the health care system and the need for specialisation, scope for privatisation and greater competition in hospital services to enhance efficiency is limited.
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.	User patient fees in hospitals were introduced in 2008 but were withdrawn in 2009, as the government does not share the view that the absence of co-payments leads to overconsumption.
Further reduce reliance on costly hospital care, which is high by international standards, by eliminating excess hospital beds and promoting home care rather than nursing homes.	In 2008, a new system regarding admissions to nursing homes was introduced with the objectives of decreasing the demand for nursing homes as well as of increasing the options for the elderly and assisting them to live in their homes. As a result of this, elderly persons are expected to spend less in nursing homes
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 expanding activity-based funding arrangements that reward productivity.	A new Act on Health Insurance came into force in 2008, with the stated objectives of strengthening the role of the state as a buyer of health care and improving methods of negotiation and payment for services. A new institution, Sjúkratryggingar Íslands (Icelandic Health Insurance), was established to this end. An ongoing project is focusing on how to improve the efficiency of public health care providers, <i>inter alia</i> by extending DRG analysis (Landspítali, the biggest hospital in Iceland, has grouped its output based on DRG for a number of years) to smaller hospitals.
Reduce the high cost of pharmaceuticals by promoting competition and the use of generic drugs. In particular, cost sharing should be modified so as to provide incentives for the supply and purchase of cheaper drugs.	In 2008, legislation was introduced to open up the pharmaceutical market and facilitate access to mail-order pharmacies. This year, in two therapeutic groups, reimbursement rules were modified so that general reimbursement is only given to the most cost effective medicines. Further improvements in cost efficiency could be made by extending these arrangements to other therapeutic groups.

Past recommendations	Actions taken and current assessment
<b>D. Public sector management</b>	
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 intends to adopt multi-year budget frames.
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 cyclicalities of local revenues in order to smooth the path of local expenditures over the business cycle.	Negotiations have started but no agreement has been reached.
Accelerate the introduction of outcome-based budgeting, performance measurement and management reforms in the public sector.	Progress in these respects has remained slow.
<b>E. Taxation</b>	
Tax cuts should be matched with appropriately sized reductions in public spending. Increase user fees, in particular in the education and health-care sectors.	Preceding the crisis, large tax cuts were made without introducing any spending offset. In 2008, capital gains taxation was abolished for shares and the corporate income tax rate was cut from 18% to 15% to strengthen Iceland's attractiveness as an international business location. Under the pressure of the deteriorating outlook for public finances, fiscal stabilisation measures are now being taken or planned, including a number of tax measures. At the same time, temporary rules allow deferred (and sometimes even reimbursable) payments of VAT and customs duties during 2009.
<b>F. Product market competition</b>	
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.
Reduce agricultural support, especially in the area of policies that provide incentives to increase production. Eliminate administered prices for dairy products.	A new agreement between the government and sheep farmers took effect in 2008. Under the agreement, the amount of support is projected to decrease by 1% per year in real terms until 2013. As of June 2009, sheep farmers are no longer required to export when total production exceeds domestic demand.
Reduce the remaining ownership restrictions, notably in the energy and fisheries sectors.	A committee was set up to study the matter but went into abeyance owing to opposition to easing ownership restrictions in the fisheries sector.
<b>G. Environment</b>	
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 new government has stated that it plans to introduce a comprehensive framework for the evaluation of new investment projects. However, new investments projects have recently been launched without conducting comprehensive cost-benefit analyses.

## Chapter 2

# Challenging times for monetary and fiscal policies

*Monetary and fiscal policies face huge challenges: the banking sector has collapsed; the economy is in the midst of a deep recession; the exchange rate has plunged; capital flows have been frozen; inflation is elevated; public debt has risen; source of revenues have disappeared; social needs have increased; and the unemployment insurance fund has been nearly depleted. Against this difficult background, this chapter discusses what policy makers should do in order to restore balance in the Icelandic economy and lay out the foundations for a sustainable recovery. The key recommendations are to seek entry in the euro area and implement the fiscal consolidation measures necessary to comply with the IMF programme.*

In the wake of the collapse of the banking sector, monetary and fiscal policy challenges have grown hugely. On the monetary front, the IMF programme, capital controls and very high interest rates have helped to stabilise the financial situation, although at a high economic cost. On the fiscal side, the wide deficit must be reduced rapidly and sustainably, and the large national debt will have to be lowered substantially. This chapter looks first at monetary policy, examining the roots of unsatisfactory inflation outcomes in the past and suggesting a new orientation to take once capital controls have been lifted. The key recommendation is that, if it were to become an EU member, Iceland would be advised to seek entry into the euro area as soon as feasible, so as to reap the economic benefits. In the short term, policy credibility should be strengthened as much as possible to allow the inflation-targeting regime to be revived, consistent with the ultimate goal of euro adoption. The chapter then considers the orientation of fiscal policy, which faces the prospects of high public indebtedness, double-digit public deficits and rising debt servicing costs, requiring a lengthy period of consolidation. As planned, this calls for an aggressive multi-year fiscal consolidation programme, which is also necessary in preparation for an eventual euro adoption. The challenge will be to raise taxes without unduly harming growth, and cut expenditures at the time when social needs are most acute.

### The limits of monetary policy in a very small open economy

#### ***Icelandic monetary policy has struggled to deliver stable inflation and exchange rates***

Iceland has struggled with high and volatile inflation for a very long time. At least since the early 1990s and until 2001, monetary policy was seeking to control inflation with the exchange rate serving as a nominal anchor. The increase in international capital flows that characterised financial market developments during the 1990s, however, frequently put the managed floating exchange-rate framework under considerable pressure, as the maintenance of the exchange-rate target often came at the cost of domestic stability. Indeed, growth fluctuations were pronounced and inflation was volatile. As discussed in previous *OECD Surveys of Iceland*, a flexible exchange rate was thought to be an important adjustment mechanism for an economy particularly vulnerable to supply-side shocks. Additional interest rate flexibility was also considered to be helpful to this regard. Furthermore, the maintenance of the exchange rate peg was costly at times, and became increasingly difficult. These were the main reasons which prompted Iceland to adopt inflation targeting in 2001.

In March 2001, Iceland allowed its currency to float freely and switched to an inflation-targeting framework (Central Bank of Iceland, 2001). The move was inspired by the successful experience of other countries, including some also subject to external shocks and to exchange rate pressures. It was thought that the announcement of an explicit inflation target and the adoption of state-of-the-art practices, such as the publication of a quarterly inflation forecast, would provide the necessary credibility to improve the stability to the Icelandic economy. The inflation-targeting framework was strengthened over time.

In particular, the communication strategy adopted by the Central Bank of Iceland (CBI) at the beginning of 2007 was nearly state of the art. Following the lead of the Reserve Bank of New Zealand, the Norges Bank of Norway and the Riksbank of Sweden, the CBI began publishing its conditional expectation of the path of interest rates. Disclosing the policy forecasts enhanced transparency and was thought to make it easier for monetary policy to influence interest rates at the long end of the yield curve, which are primarily driven by expectations on how the policy rate will evolve over time. Similarly, the CBI adopted the practice of discussing alternative macroeconomic scenarios, with the aim of clarifying the reaction function of monetary policy, and thus making it more predictable and effective.

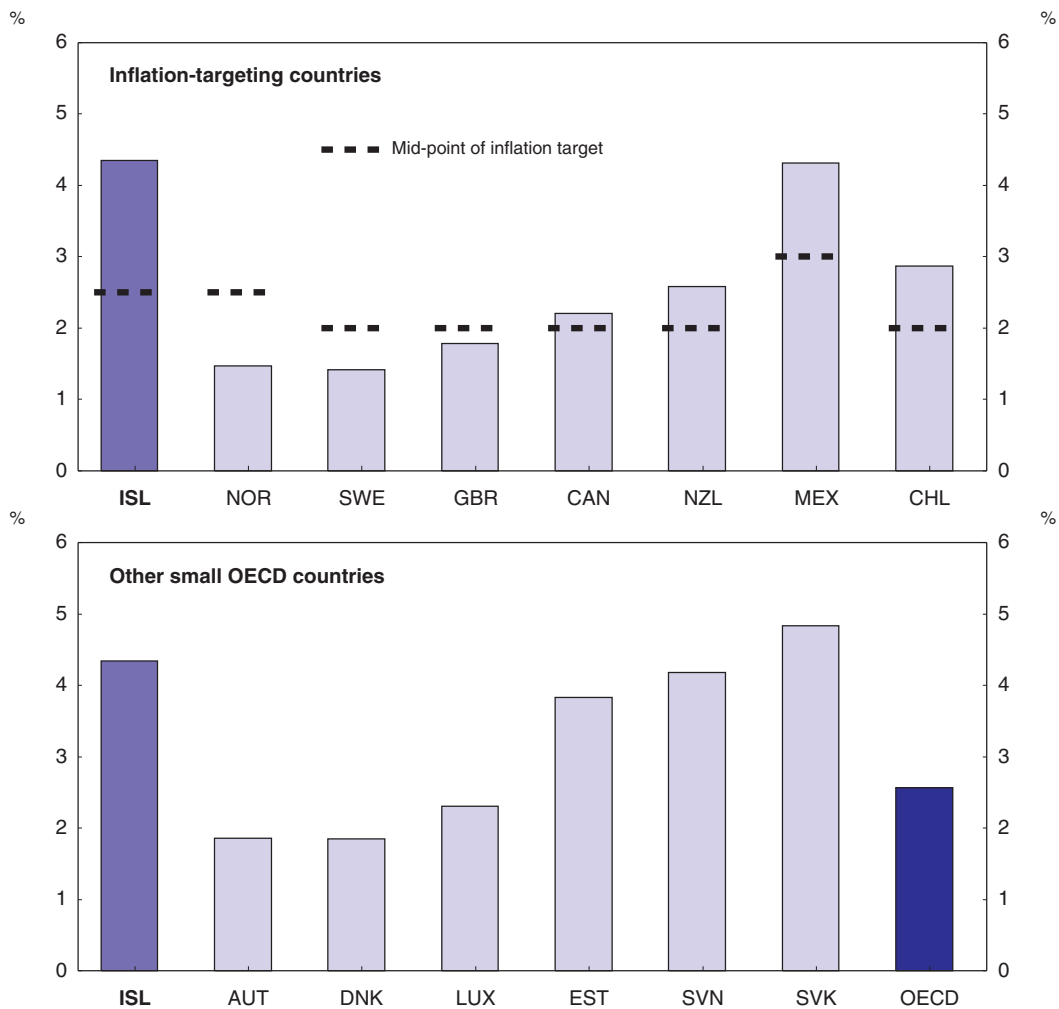
### **The conduct of monetary policy was not flawless**

One of the potential advantages of the inflation-targeting framework over a discretionary approach to monetary policy is that it should strengthen the expectation channel of the monetary policy transmission mechanism. A pre-condition for this mechanism to work is the high credibility of the monetary authorities, which, in turn, requires a perception that the central bank will not be influenced by political factors. However, studies carried out before the regime switch showed that Iceland ranked near the bottom amongst industrialised nations in terms of central bank independence (Fry *et al.*, 2000; Pétursson, 2000). Iceland scored particularly low on the emphasis given to price stability in its charter. Creating a more independent central bank was therefore crucial to make inflation targeting operative. However, the appointment of a former Prime Minister as the head of the reformed CBI in 2005 and the habit of the members of government of openly commenting on the interest rate decisions sent the opposite message.


Another condition for the expectation channel to work is that the monetary authorities act, and be perceived to act, decisively to attain the inflation target. However, inflation has exceeded the official target from 2004 onwards, and over the 2001-2007 period, inflation averaged nearly twice the CBI's target. Even before the spike in prices associated with the sharp devaluation of the króna late in 2008, Iceland's inflation performance did not compare favourably with those of other inflation-targeting countries and most other OECD-member countries (Figure 2.1). A notable exception is the group of Eastern European countries, a number of which have since joined or sought entry in the euro area.

In terms of inflation volatility, the performance of Iceland appears even worse (Figure 2.2). Inflation volatility was mostly due to a high degree of nominal and real exchange rate volatility. This is in contrast with the experiences of other open economies (Bravo-Ortega and di Giovanni, 2006) and other small economies (Devereux and Lane, 2003; and Pétursson, 2008), suggesting that the authorities were too willing to tolerate large exchange-rate fluctuations. The combination of high and volatile inflation made real activity less stable (Figure 2.3). Arguably, it also lowered the economy's productive potential, by making it more difficult for households and firms to distinguish between changes in relative and in overall prices and thereby reducing the efficiency with which Iceland's limited resources were allocated.

While the unsatisfactory inflation performance was partly due to unavoidable errors in forecasting, both the OECD and the IMF noted that the conduct of monetary policy showed a tendency to respond too timidly to the worsening inflation outlook (OECD, 2006; IMF, 2007; OECD, 2008). The interest-rate decision taken in December 2005 provides a case

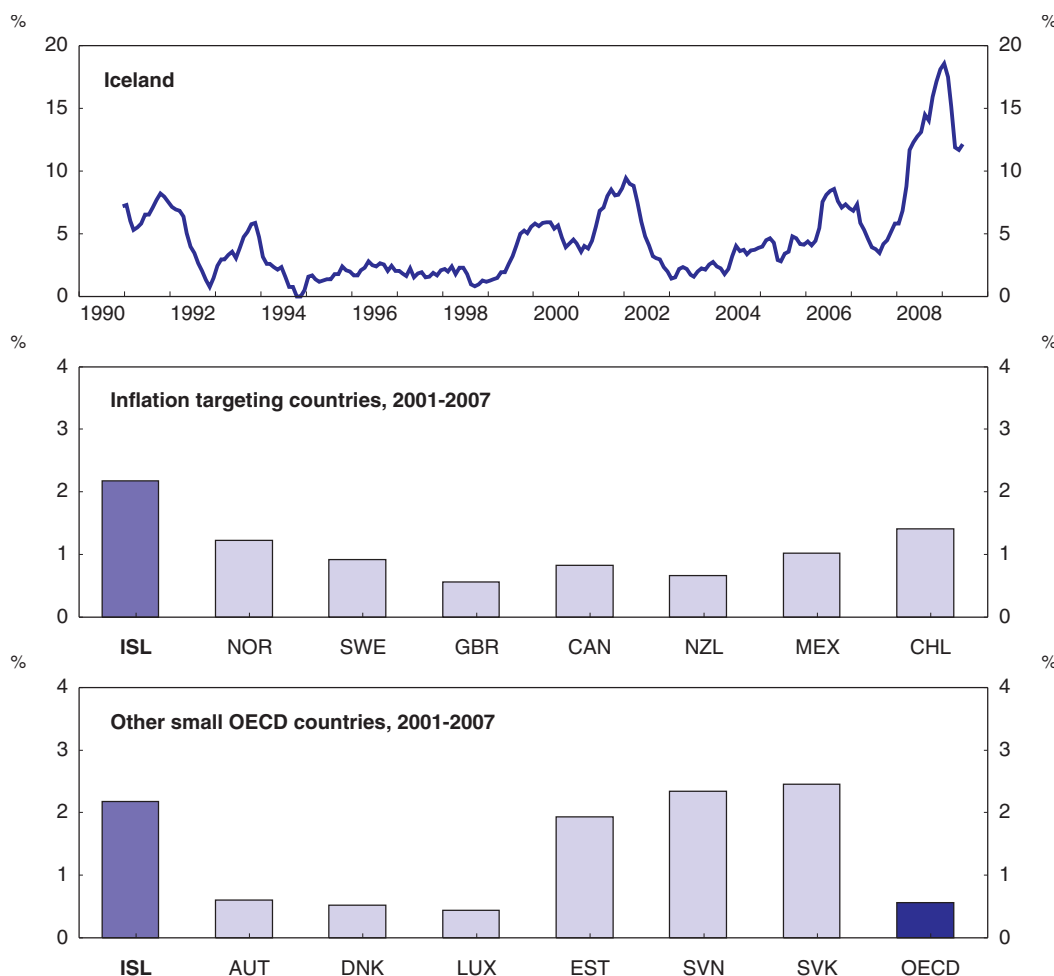
Figure 2.1. **Average annual inflation rate, 2001-2007**

Source: OECD, Main Economic Indicators.

StatLink  <http://dx.doi.org/10.1787/705272040623>


in point. At that time, the CBI was projecting two-year-ahead inflation to be just below 4%, the threshold above which the CBI is required to prepare a detailed report explaining the reasons for the deviations from the target. Despite the elevated inflationary pressures and an overheated economy, however, the policy rate was increased by only 0.25 percentage point. As concluded in the 2006 Survey, “the Central Bank’s announcements do not seem to be credible. The public does not seem to believe its statement that it will do whatever is necessary to hit the target.”

Nevertheless, as discussed in Chapter 1, the relative inflation performance of Iceland improves significantly when compared using an internationally comparable measure, such as the harmonised index of consumer prices (HICP). The main difference between the HICP and Iceland’s official inflation measure is that the latter includes the price of owner-occupied housing. Statistics Iceland computes such a 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 mortgage rates. The housing price index is thus a function of

Figure 2.2. **Volatility of inflation**<sup>1</sup>

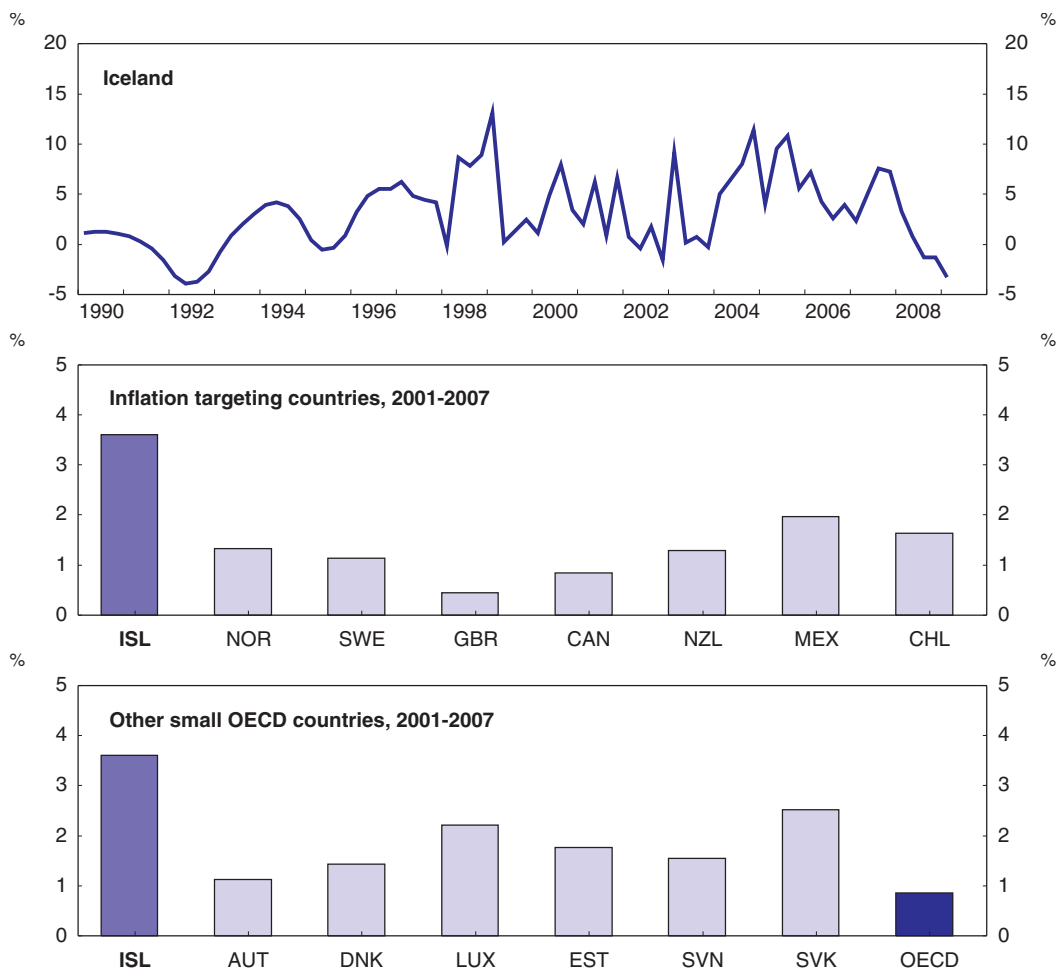
1. Measured as the standard deviation of year-on-year percentage change of the monthly consumer price index.

Source: OECD, *Main Economic Indicators*.

StatLink  <http://dx.doi.org/10.1787/705284688602>


actual housing prices and current mortgage rates. Accordingly, a pronounced increase in house prices, as was experienced by Iceland until mid-2007, boosts the official inflation rate. Indeed, the housing component accounted for more than half of the price increases recorded over the boom years (Figure 2.4). By contrast, measured according to the HIPC, the average annual rate of inflation over the 2001-2007 period was 2.9%, not far from the average rate for the euro area over the same period (2.2%). However, the fact remains that the official measure of inflation was repeatedly well above the official target, which undermined credibility.

In short, the new regime failed to establish a solid reputation for Iceland as an inflation-averse country, and therefore did not succeed in stabilising the economy which is the primary task of monetary policy. The lack of adequate credibility is clearly reflected in inflation expectations, which remained poorly anchored according to all available measures, as shown in Chapter 1 (Figure 1.21). Mishkin (2008) argues that the inflation-fighting credibility of the central bank exerts considerable influence on the degree of

Figure 2.3. **Volatility of real GDP growth**<sup>1</sup>

1. Measured as the standard deviation of the year-on-year percentage change in real GDP.

Source: OECD, Analytical database.

StatLink  <http://dx.doi.org/10.1787/705315723232>

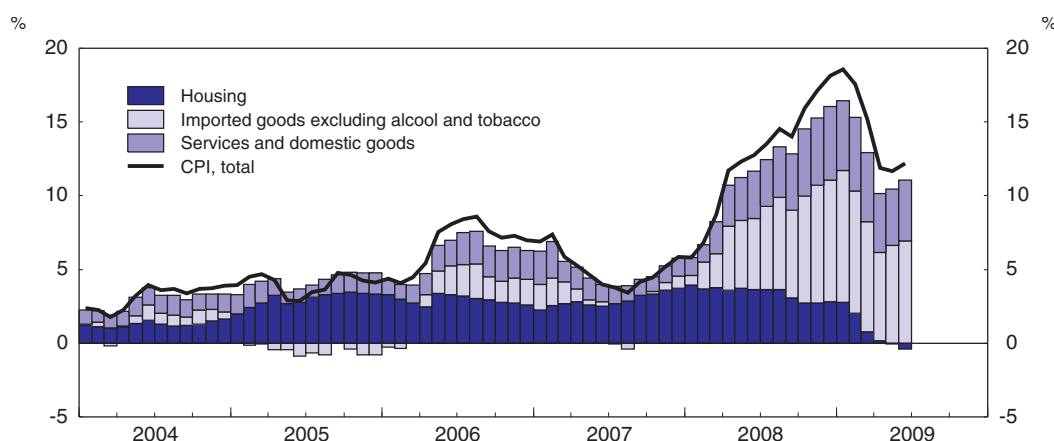
exchange-rate pass-through to consumer prices, which, not surprisingly, has remained particularly elevated in Iceland (Pétursson, 2008).

### **It is difficult to conduct monetary policy in a very small open economy**

While the Iceland's inflation problems were surely related to the conduct of monetary policy and lack of credibility, independent monetary policy may not be an effective stabilisation tool in a very small open economy, such as Iceland. First, as noted, the degree of exchange-rate pass-through to consumer prices is particularly high, which makes the exchange rate a very important channel for the transmission for monetary policy to real activity. While this means that monetary policy is not impotent, it also implies that a strict stance squeezes the export sector while benefitting the domestic sectors and consumers through lower import prices. Perceptions of hardship in the export sector and more generally the uneven burden of monetary policy inevitably turn out to be a source of strong criticism of the monetary authority. Several commentators have argued that such political-



Figure 2.4. **Main components of official CPI inflation**  
12-month rate



Source: Statistics Iceland and Central Bank of Iceland.

StatLink  <http://dx.doi.org/10.1787/705346483447>

economy concerns limit the room for monetary policy manoeuvre and therefore enhance the case for fiscal policy playing a more prominent short-run stabilisation role (Schmidt-Hebbel, 2006). However, in Iceland, fiscal policy did not always play this role. While substantial fiscal surpluses were accumulated and net debt was nearly eliminated, fiscal policy, especially with the benefit of hindsight, did not always adequately counter the overheating of the economy during the boom period. Looking forward, fiscal policy will need to be devoted for some years to restoring a sustainable position in the wake of the collapse of the banking sector.

Second, as could not be better exemplified than by the unfolding of events in Iceland during the course of 2008, monetary policy, defined as the setting of the short-term policy interest rate, is a hopeless tool to stabilise a very small open economy facing a mismanaged financial liberalisation process and powerful developments in global capital markets (Eliasson and Pétursson, 2009). As examined in Chapter 1, the competition between the government-controlled Housing Financing Fund (HFF) and the newly privatised banks led to a race-to-the-bottom in the mortgage market: real interest rates fell, credit standard deteriorated, and foreign-currency loans became widespread. This fuelled a housing bubble, which began deflating in 2007 and then burst as Iceland's financial system collapsed. The mismanagement of the domestic financial system also contributed to a disconnection between short- and long-term interest rates. In other words, a potentially important mechanism for the transmission of monetary policy, the mortgage-rate channel, was broken. Interest rates in Iceland were obviously also affected by the developments in the global financial market. The "savings glut" and a search-for-yield fed a massive carry trade, which left unsupervised by the domestic authorities, fuelled up an already overheated economy. Carry-trade investors arguably exploited the efforts of the CBI to achieve its inflation target by increasing the influx of capital as inflationary pressures mounted, reassured that short-term interest rates would increase, or at least remain high, for the foreseeable future (for a critical assessment of how inflation targeting can transform bad news on inflation into good news for the currency, see Clarida and Waldman, 2008). Finally, when the global financial markets seized up in the aftermath of the failure of Lehman Brothers and the domestic banking sector collapsed, there was not

much the CBI could do to prevent the sharp depreciation of the króna, the jump in prices and the plunge of economic activity.

It is important to draw some lessons from Iceland's experience over the past decade. First, successful implementation of an independent monetary policy is bound to result in serious pressures being placed on the export sector. Second, fiscal policy will also have to play a prominent role as a short-term stabilisation tool, although, over the near term, the fiscal policy stance will have to be strongly pro-cyclical in order to adequately confront the challenges posed by financial crisis and the collapse of the economy. And above all, macro- and micro-prudential supervision of the financial system will need to be greatly improved by taking decisive measures such as those recommended at the end of Chapter 1. Without that, monetary policy will continue facing an impossible task. A small open economy with its own currency and a fragile financial sector is prone to experience further booms and busts, no matter what the stance of monetary policy will be. The crisis shows that it will also be crucial that the global financial system becomes better regulated and more resilient, an issue that is, however, outside of the control of Icelandic policymakers.

### The future of monetary policy

This section considers the requirements for Iceland's monetary policy framework. For the time being, policy will be governed by the IMF programme and the overriding immediate need to stabilise the financial market. Even so, the authorities can take action to rebuild monetary policy credibility. For the longer term, this section argues that Iceland should adopt the euro, and discusses the policy requirements and difficulties of such a project. Since there will be a period of transition between the end of the current regime of capital controls and euro adoption, the inflation targeting-framework that has been *de facto* suspended should be resuscitated, although the success of this will depend critically on rebuilding credibility and ensuring a stable domestic financial system.

#### **Short-term objectives of monetary policy**

##### ***Restrictions on capital movements should be gradually removed as soon as feasible***

The collapse of the banking sector led to a recalibration of the monetary policy objectives. The effective exchange rate plunged 40% in early October 2008 with respect to its level at the beginning of the year. The domestic authorities and the IMF agreed that stabilising the króna was a fundamental element of the programme for economic recovery. Consequently, exchange controls on capital movements were introduced to prevent a disorderly outflow of capital held by foreigners (about 40-50% of 2009 GDP). According to CBI estimates, as of April 2009, non-resident holdings included ISK 204 billion (14% of 2009 GDP) in domestic deposits, ISK 60 billion (4% of 2009 GDP) in CBI certificate of deposits, ISK 205 billion (14% of 2009 GDP) in nominal bonds, and ISK 162 billion (11% of 2009 GDP) in inflation-indexed bonds (Central Bank of Iceland, 2009). Preliminary estimates by the CBI also indicate that roughly 40% (approximately ISK 250 billion) of the total holdings are held by so-called "impatient" investors, i.e. investors that would "rush to exit" if they could (Central Bank of Iceland, 2009). If a disorderly outflow occurred, the exchange rate would fall sharply, undermining policy credibility and perhaps driving many firms and some households into bankruptcy owing to their un-hedged foreign exchange positions. A substantial share of the foreign currency borrowing appears to have been done by the Icelandic investment firms to finance their foreign equity asset purchases. About 50% of corporate borrowers with foreign currency denominated debt do not have foreign

currency earnings. In addition, some 20% of households have foreign-exchange denominated mortgages. However, little is known, for both firms and households, about the extent of un-hedged positions. In preparation for the progressive removal of capital controls, the authorities should obtain information on the extent of outstanding foreign currency exposures, which requires information on both foreign currency loans and sources of revenue, so as to be able to properly assess the risks arising from a possible further depreciation of the exchange rate following the removal of exchange controls.

The capital controls also have protected the domestic banking system from the risk of large withdrawal of deposits by residents wishing to transfer their assets abroad. As well, by disallowing investments abroad, the controls have effectively forced domestic creditors to lend to domestic borrowers. Consequently, the market interest rates – at least for those borrowers who continued to have access to credit – have not increased as much as would have been warranted by the higher risk perceptions. Over the course of 2008, Iceland's sovereign debt was downgraded to nearly speculative grade by the major credit rating agencies. Nevertheless, the Housing Financing Fund – the government-controlled mortgage lender – has been able to raise funds at rates which, in real terms, have not been too far off, on average, from those prevailing before the burst of the crisis.

The authorities intend to gradually remove the capital controls within the two-year life of the IMF programme. Above all, the removal of the restrictions is a necessary step to restore Iceland's credibility. However, they should be lifted only when a medium-term fiscal consolidation plan is well underway, the banking sector has been put back on its feet, and there are adequate international reserves. To guard against the risk that the foreign investors might move their króna-denominated assets out of Iceland, the CBI and the IMF envisage liberalising the capital account initially only for new flows. Controls would remain on non-resident króna holdings until the position improved enough to remove these controls as well. This solution is technically feasible, but very complicated. With this in mind, the authorities should remove restrictions on new capital flows only when it is safe to do so, and, in any case, not before the banking sector has been stabilised. Partial removal of capital controls could also facilitate the complete removal of the controls over the existing non-resident króna holdings without causing further major disruption, since even partial removal would, if new foreign investment were successfully forthcoming as envisaged, generate competitive returns in Iceland. In these circumstances, the value of the króna might no longer be seen as a one-way bet, particularly given that the real exchange rate is currently well below its long-term average. Accordingly, the government should remove the capital controls that block non-resident króna holdings as soon as feasible.

### ***Stabilising the króna while the conditions for removing the capital controls are put in place***

A tight monetary policy stance is needed to support the external value of the króna, since capital controls do not work perfectly. This means that, *de facto*, monetary policy has, at least temporarily, shifted from an inflation-target to an exchange-rate target. In the words of the Central Bank's Governor Oygard (2009): "Current monetary policy is guided by the interim objective of stabilising the exchange rate, while the inflation target remains the long-term goal." In any case, it should be noted that under the current circumstances exchange rate stability is, perhaps more than ever, an important factor in re-establishing price stability. Given the weak state of the Icelandic economy and the economic distortions

accompanying capital controls, both are currently indispensable elements of a strategy to support a sustainable recovery.

Despite this aggressive and unorthodox policy response, the króna has been quite volatile in 2009, and the effective exchange rate has depreciated a further 12% by early July, relative to the beginning of October 2008. The 12-month inflation rate, after peaking at 18.6% in January, has decelerated sharply, dropping to 12.2% in June. As inflationary pressures began to subside, some lowering of interest rates was justified, although the extent of the decline in real rates has not been large. At the same time, however, much of the decline in inflation can be imputed to base effects in the housing price component (Figure 2.4) and underlying inflation has remained well above the (long-term) inflation target of 2½ per cent. In any case, until the conditions for removing the capital controls are put in place, monetary policy should continue to focus on stabilising the króna, which reduces the room for further interest rate cuts.

### ***Rebuilding policy credibility***

It is essential that the CBI improve its credibility. To this end, the Central Bank should make clear that it stands ready to do what is necessary to achieve its objectives. For instance, the CBI should take full responsibility for the tight monetary policy stance, explaining clearly that this is needed to support the capital controls and prevent a catastrophic outflow of capital. By taking this sort of ownership, it can demonstrate that it understands that tough policy choices will be needed in the years ahead and that it is prepared to implement them. By the same token, politicians and other government officials should refrain from publicly commenting on monetary policy implementation, as distinct from policy goals, which are properly in the political sphere.

The amendments to the Act on the CBI introduced in February 2009 are a welcome step for strengthening credibility (Box 2.1). The establishment of a Monetary Policy Committee (MPC) and new qualification requirements for the governor and deputy governor should improve the governance structure of the Central Bank. Publication of the minutes of policy rate meetings will improve transparency and thus the effectiveness of monetary policy. It is equally important that coherent actions follow these organisational changes. For example, leading political figures should not be nominated as members of the MPC. A more independent central bank would also need to become more accountable. The Act's requirement that the MPC report to the Parliament on its work twice a year is welcome and consistent with practice in several OECD countries. The new government is also planning to transfer the supervision over the CBI from the Prime Minister's office to a new Ministry of Economic Affairs, which will also be responsible for the Financial Supervisory Authority (FME), Statistics Iceland and economic policy. This arrangement should improve coordination of monetary policy and financial supervision.

Another measure that the government can take to improve the credibility of the CBI would be to change the targeted inflation measure. As mentioned above, the official CPI includes a component for owner-occupied housing services which is closely tied to market housing prices. This is problematic for at least two reasons. First, research by top academics indicates that central banks should target measures of inflation which put more weight on prices which move sluggishly and exclude asset prices such as housing, but which can take account of the imputed rents from these assets (*e.g.* Aoki, 2001; Woodford, 2003). Second, Icelandic mortgages are typically issued at fixed real rates for terms of up to 40 years, and therefore they are only slightly affected by the monetary policy

### Box 2.1. The new Central Bank Act

One of the main legislative initiatives by the Icelandic interim government in the period ahead of the May 2009 elections was to amend the Central Bank Act. The new Act made several changes to the administrative structure of the CBI. The changes were intended to ensure that the Bank has a qualified senior management, thereby ensuring professional and objective decision-making concerning the application of the Bank's monetary policy control mechanisms. Two principal substantive changes were introduced by the Act.

- First, it abolished the Board of Governors and it replaced it with a single, professional Governor who is in charge of the Bank's operations. The procedure for appointing the Governor and the Deputy Governor of the Central Bank was also modified. The new procedure requires public advertisement of the positions and minimum professional qualifications. The term of both positions is five years and the same person can only be appointed Governor or Deputy Governor twice.
- Second, the Act established a Monetary Policy Committee (MPC) within the Bank, with the task of taking decisions on the application of the Bank's monetary policy control mechanisms. The MPC is comprised of the Governor, the Deputy Governor, one of the Bank's executives responsible for formulating or implementing monetary policy and two outside experts in the field of economic and monetary policy appointed by the Prime Minister for a five-year term.

One of the stated goals of the new Act was to render the Central Bank more independent from political considerations, which often appeared to have been a major factor in appointments to the Board of Governors. The qualifications stipulated for appointment as Governor and as Deputy Governor of the CBI, and the legal obligation to advertise applications for the position, were intended to preclude the possibility of such considerations taking precedence in these appointments.

The Act also stipulated that minutes of the meeting of the MPC have to be made public, and in accordance with the Act the MPC has decided to publish the minutes of its policy rate meetings two weeks after each decision. Furthermore, the MPC was required report to the Parliament on its work twice each year.

stance. In other words, the CBI has been targeting a price index which not only is sub-optimal according to leading academics but also includes a component over which its policy rate has a very limited influence. Not surprisingly, no other central bank in any OECD-member country targets an inflation measure which is affected by market housing prices to the extent witnessed in Iceland's official CPI.

It could be argued that the measure adopted by the CBI may be preferable to those adopted elsewhere, since it automatically incorporates "leaning against the wind" considerations in an inflation-targeting framework. However, as the recent debacle has revealed, the approach of targeting an index very sensitive to housing prices did not work: it just made the inflation goal more difficult to achieve, and thus less credible. This recommendation does not mean in any way that monetary policy should ignore price developments of housing and other assets. To the contrary, as has been clearly demonstrated by unfolding events in Iceland and the rest of the world since mid-2007, monetary authorities ought to pay much more attention to such prices (Yellen, 2009).

One way to properly take into account the price of the service flow of owner-occupied housing would be to switch from a user's cost of capital approach to a rental equivalence

approach, as practiced in the United States and in other OECD countries (Christensen et al., 2005). However, that solution does not seem a viable solution in Iceland since, once social housing is excluded, the rental market is extremely thin. For the time being, the only readily available solution would be to adopt the HICP as the relevant measure of inflation, since this measure is not affected by housing prices. (Eurostat is in the process of introducing an owner-occupied housing component into its price basket based on building materials and replacement costs, which should improve the HICP one implemented.) The HICP also has the advantage of being internationally comparable and it is also the measure of inflation that would have to be targeted for entry to the euro area. Last but not least, it would be preferable to switch the target at a time when HICP inflation is running above CPI inflation, as is currently the case, since this would not risk undermining CBI credibility. For this reason, the authorities should take action without delay to adopt the HICP as the targeted inflation measure.

### ***Long-term objectives for monetary policy***

#### ***Drawing lessons from the past***

Once capital controls are removed, which should be done as soon as feasible, the authorities will have to implement an alternative monetary policy framework. While a number of measures have been taken and could be taken to improve the operation of monetary policy, the history of both a managed floating exchange rate and inflation targeting suggests that independent monetary policy may not be a good option for Iceland in the longer term.

Another concern is that carry traders may one day return, complicating the implementation of monetary policy. Also with this in mind, some observers have suggested that access to a global reserve currency is the only viable solution in today's globalised financial markets.

Unilateral adoption of a foreign currency, such as the euro, as has at times been advocated in some policy circles, does not appear to be a viable solution in Iceland. The conversion to euros and the loss of seigniorage would be costly for public finances. The domestic banking sector would also lose access to a reliable discount window, and thus would become prone to bank runs. And, perhaps above all, the transfer of national sovereignty to the European Central Bank (ECB) without political legitimacy would be unlikely to survive over the long run (Buiter, 2000). Last but not least, the ECB has clearly stated its opposition against any unilateral "euroisation" of the Icelandic economy and the OECD recommended against it in the 2008 Survey.

#### ***The case for joining the euro area***

Seeking to join a monetary union – for practical purposes, the euro area – appears to be the only durable solution. The process towards euro-area membership is going to be complicated and will take some time. During the transition period, both monetary and fiscal policy will have to be subordinated to meeting the criteria for euro-area entry. In this respect, however, Iceland is relatively well placed. The fiscal consolidation the authorities have already committed to (see below) and the existing inflation-targeting framework are both consistent with the ultimate goal of euro adoption. Moreover, Iceland is already a member of the European Economic Area (EEA) and, as such, many of the pre-conditions for EU membership – a necessary step along the road toward the euro – are already in place. A

number of other countries have gone through the application process in the past, with some also making intelligent use of the membership goal to implement important, but otherwise politically difficult, structural reforms. The process will also serve to give political legitimacy to a decision which, it should not be forgotten, involves relinquishing national sovereignty on certain matters, such a monetary policy, to a super-national entity. And political legitimacy would also come from having a voice in the EU's and the ECB's decision-making processes, which would not be the case under unilateral "euroisation".

The harmonisation of Iceland's agriculture and fisheries policies to those prevailing in the European Union represents the main challenge for EU membership negotiations. Liberalising trade in agricultural goods and, more importantly, reaching an agreement over the management and exploitation of Iceland's fisheries are both likely to entail some costs. Iceland's fishing industry is an important economic sector – accounting, in recent years, for 7% of GDP and over 30% of merchandise exports – and is part of the country's national identity. In addition, its fisheries policy is often regarded as a model to follow; while, by contrast, the EU common fisheries policy (CFP) has produced unsustainable fish stocks and a weak fisheries sector. A 1997 OECD assessment on the fisheries management systems of its member countries concluded that "the [EU] fisheries sector is characterised by overfishing, lower production and income than could have been obtained and the existence of a latent sectoral crisis" (OECD, 1997). In April 2009, the European Commission published a consultative green paper on the CFP which finds that 88% of the EU's stocks are overfished and that in several EU countries the cost to public budgets of subsidising fishermen "exceeds the total value of the catches" (EC, 2009). The green paper, which is part of a plan aimed at reforming the CFP by 2013, also suggests that the EU should learn from countries, such as Iceland, where fisheries are managed based on individual transferable quotas, i.e. fishermen hold individual rights that can be sold or leased to others (albeit with some limitations). In sum, if Iceland applies for EU membership, negotiations over this contentious issue would likely be difficult, but there seems to be scope for both improving the CFP and finding an acceptable compromise over Iceland's fisheries.

Assuming that a compromise on fisheries can be reached and that the EU application is successful, membership in the European Economic and Monetary Union (EMU) would entail significant benefits. Iceland would finally have a stability-oriented monetary policy and share the seignorage revenues of the Eurosystem, while its banks would gain full access to the reliable discount window of the ECB. Especially for Iceland, with its history of high and volatile inflation, euro area membership appears the most logical strategy to stabilise the economy. Moreover, the CBI credibility could immediately gain from a firm political decision to quickly join the EMU. In the past, at least since the times of the European Monetary System (EMS), other inflation prone-countries, such as Italy, Spain, Portugal and Greece, have found that participation in cross-country monetary arrangements has served as an effective disciplinary device and facilitated the conduct of monetary policy (Giavazzi and Pagano, 1988).

Entry to the euro area would also eliminate the exchange rate risk and open access to the large euro capital market, which should lower Iceland's real interest rates towards euro area levels. This would reduce the government's debt servicing costs – which, as discussed later in this chapter, will be very helpful given the dire situation of public finances – as well as ease balance sheet adjustment for the private sector. Lower interest rates would also stimulate capital investment, which would increase labour productivity. While it is difficult

to quantify by how much the Iceland's real interest rates might fall as a result of euro area membership, the experiences of past applicant suggest that the effects are large. For instance, a recent study of the Slovak Republic's successful bid finds that the exchange rate premium, which during 2006 still amounted to around 1%, fell to zero immediately after entry was approved (Huefner and Koske, 2008). At the same time, financial supervision, as recommend in Chapter 1, should be strengthened to ensure that low interest rates do not spur another unsustainable credit boom.

Another advantage of entry to the euro area is that sharing of a common currency would reinforce trade linkages with other euro-area economies. A common currency among partner countries is seen as "a much more serious and durable commitment" (McCallum, 1995). Amongst others, it rules out future competitive devaluations, and facilitates foreign direct investment and the building of long-term relationships. In a seminal paper, Rose (2000) finds a large positive effect of a currency union on international trade. By using a gravity model on a panel covering 186 countries during 1970-90, Rose finds that countries sharing the same currency trade three times as much as they would with different currencies. Frankel and Rose (2000) extend the framework of Rose (2000) and use a panel covering 200 countries plus dependencies. Their main findings are that: currency union more than triples trade among partner countries. Rose and Van Wincoop (2001) find instead that euro-area entry would spur trade by more than 50%, a considerably smaller estimate. Research by Melitz (2001) and Persson (2001) argues for even lower estimates. The minimum point estimate from Persson is a 13% increase in trade from currency unification with a preferred estimate of around 40%. Melitz's estimates are higher. Applying the gravity trade model approach to Iceland, Breedon and Pétursson (2005) find that Iceland's trade could increase by about 60% and that the trade-to-GDP ratio could rise by 12 percentage points should Iceland join the European Union and EMU. More recent research by Flam *et al.* (2008) – a comprehensive report on the euro area aimed at assessing whether Denmark, Sweden and the United Kingdom should join the EMU – confirms that euro-area entry has boosted trade between members of the currency union and also finds that the effect has increased over time. According to their calculations, trade within the euro area is 24% higher on average after 1999 than in the preceding years, whereas the trade between the euro area and outside countries has risen by only half of that, or 2%. Other research shows that the elimination of exchange rate volatility – which has been especially pronounced in Iceland – has fostered product differentiation in European trade. For instance, Fontagné and Freudenberg (1999) apply a different methodology than the gravity models and find that after entry in a monetary union intra-industry trade occurs more in horizontally differentiated goods (two-way trade in varieties) than in vertically differentiated goods (two-way trade in qualities). In sum, while there are different views concerning the size of the possible trade gains following monetary unification, the benefits for Iceland would most likely be considerable.

Euro-area entry also entails some drawbacks. Above all, monetary conditions will not always be suited to the national circumstance and Iceland would lose the flexibility to use the exchange rate to adjust to idiosyncratic shocks. Exchange rate flexibility has been very helpful in the current episode because it has facilitated some beneficial cuts in real wages. Studies of the synchronisation of the Icelandic business cycle with that of the euro area yield mixed results. This chapter contributes to this literature by investigating how synchronised the Icelandic and euro-area business cycles have been during the past decade (Box 2.2). The main result of this analysis is that country-specific shocks tend to



### Box 2.2. How synchronised is Iceland with the euro area?

The optimal currency area (OCA) literature emphasizes synchronisation of economic shocks as one of the main conditions for countries to benefit from monetary integration. This box employs standard empirical methods to shed some light on this issue based on the work carried out by the Secretariat in the context of the 2009 *Survey of Estonia* (OECD, 2009a; for a more complete account, see Brixiova *et al.*, 2009). Two main features are examined: first, the structure of the economy; and second, the economy's underlying shocks.

#### Structural similarity and correlation of economic activity between Iceland and the euro area

The likelihood of synchronisation of shocks and the business cycles should increase with greater structural similarity of production. Over the 1997-2007 period, the correlation of Iceland's real GDP growth with the euro area has been very low, especially relative to the core countries. On this measure, however, some more recent EU member countries do not seem any better (Table 2.1). Correlation of Iceland's and euro-area HICP inflation has been low but not so much, especially when compared with those of other countries at the periphery. Another indication that the structure of Iceland's economy differs significantly from that in the euro area is the very low share of intra-industry trade in Iceland. Given that Iceland's exports are concentrated in aluminium and fish, the last observation should not be surprising. In any case, according to these measures, it appears that shocks and the business cycles of Iceland and the euro area are only loosely synchronised.

Table 2.1. **Correlation coefficients with euro area real GDP growth and inflation, 1997-2007**

	Real GDP growth	Inflation
ISL	<b>0.05</b>	<b>0.38</b>
DEU	0.92	0.76
FRA	0.89	0.92
NLD	0.79	0.29
FIN	0.79	0.23
IRL	0.51	0.43
GRC	-0.05	0.18
SVK	-0.27	-0.24
SVN <sup>1</sup>	0.53	-0.12

1. 1998-2007 for HICP inflation.

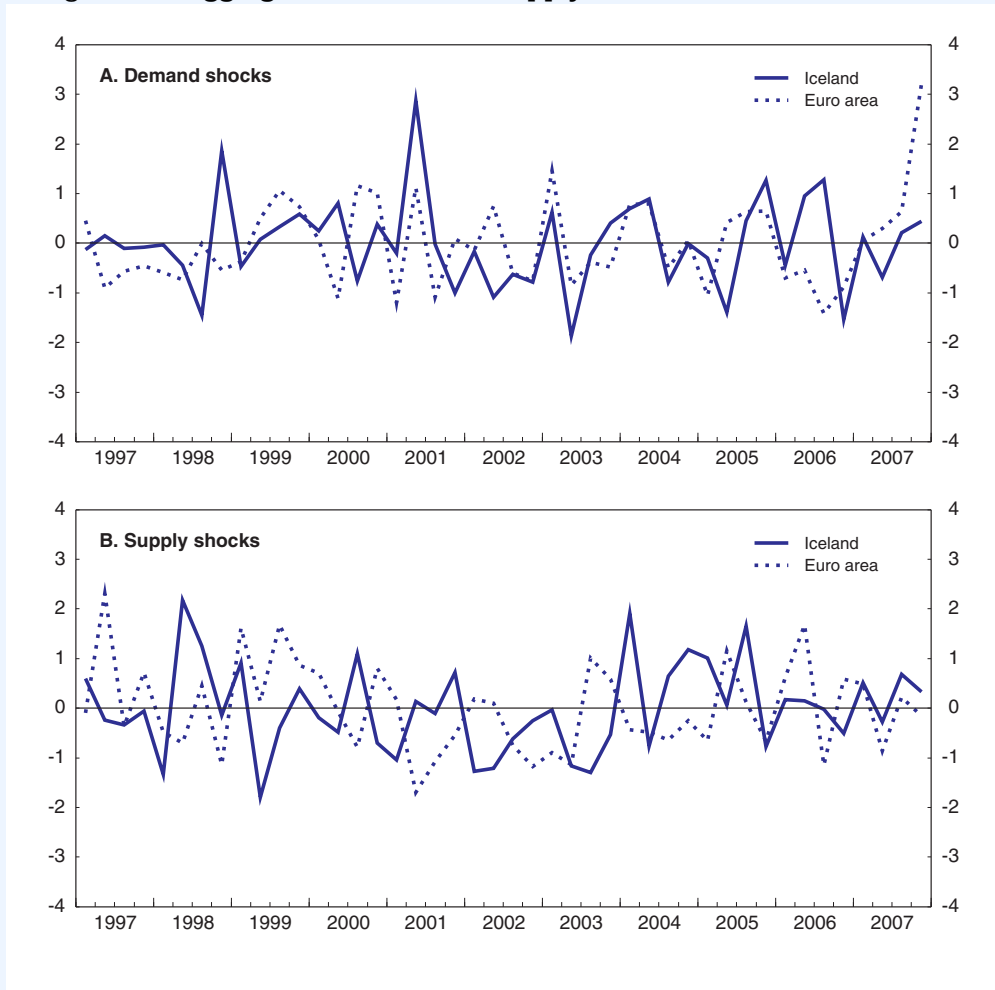
#### The symmetry of shocks between Iceland and the euro area

Despite the fact that the structure of Iceland's economy differs from that of the euro area, it is possible that the aggregate shocks influencing the two economies may be fairly similar. A standard aggregate-demand aggregate-supply model, consisting of output growth and changes in inflation, is utilised to recover the underlying demand and supply shocks in Iceland and to determine their correlations with those of the euro area and a control group.\* Output is measured as real GDP, while inflation as the quarterly percentage changes in the HICP. (As discussed earlier in the chapter, Iceland's official CPI is not comparable to the euro-area HICP.) Following the methodology proposed by Bayoumi and Eichengreen (1992), a 2x2 structural VAR model is identified posing four simple restrictions. Two of these restrictions are simple normalizations of the variance of the shocks; a third restriction comes from assuming that demand and supply shocks are orthogonal; and the final restriction, is that demand shocks have only temporary effects on output. These restrictions also imply that demand shocks will raise prices in both the short and the long run, while supply shocks will lower prices.

### Box 2.2. How synchronised is Iceland with the euro area? (cont.)

The results indicate that the correlation of the demand shocks between Iceland and the euro area have been positive but low, while supply shocks appear to have been uncorrelated (Figure 2.5 and Table 2.2). For robustness, the VAR model is estimated for longer and shorter time periods but the qualitative results do not change. These findings confirm the presumption that, especially with regard to supply shocks, the business cycle in Iceland differs from that in the euro area.

Figure 2.5. Aggregate demand and supply for Iceland and the euro area



Source: OECD, Main Economics Indicators.

StatLink  <http://dx.doi.org/10.1787/705356408505>

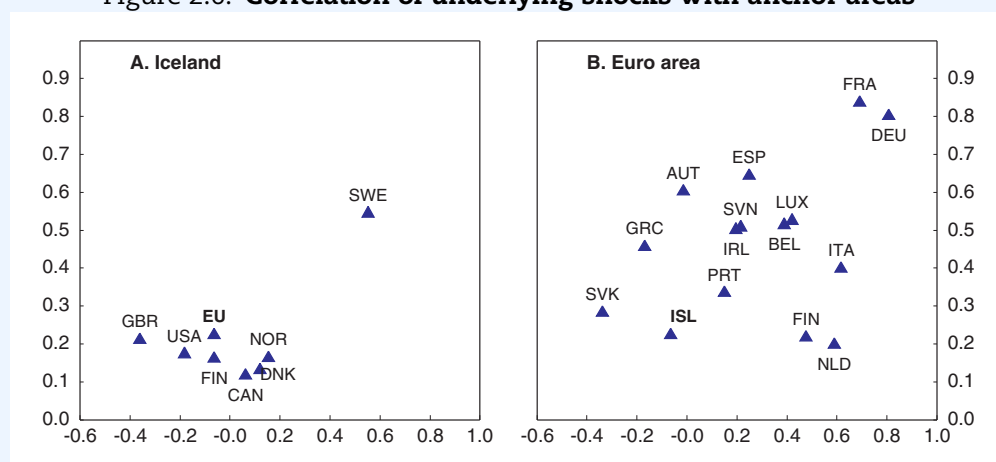
At the same time, comparisons with other countries suggest that the match between Iceland and the euro area may be above a minimum threshold. First, the correlations of the shocks to Iceland with those in other economies also appear to have been relatively low, with the notable exception of Sweden (see Table 2.2; Figure 2.6). Second, there are a number of countries inside the euro area which have also been hit by idiosyncratic shocks (see Figure 2.6). In conclusion, this simple analysis finds low synchronisation of cycles between Iceland and the euro area, but this does not appear to be a sufficient condition to discourage Iceland's entry into the euro area.

## Box 2.2. How synchronised is Iceland with the euro area? (cont.)

Table 2.2. Correlation coefficients of underlying shocks between Iceland and selected countries, 1997-2007

	Demand shocks	Supply shocks
Euro area	0.23	-0.06
USA	0.18	-0.18
Norway	0.17	0.15
Finland	0.17	-0.06
United Kingdom	0.22	-0.36
Canada	0.12	0.06
Sweden	0.55	0.55
Denmark	0.14	0.12

Figure 2.6. Correlation of underlying shocks with anchor areas



Source: OECD, National Accounts.

StatLink  <http://dx.doi.org/10.1787/705365807471>

\* Special thanks go to Roselyne Jamin, Margaret Morgan and Patrice Ollivaud for assistance with programming the VAR decomposition algorithm.

prevail in Iceland. At the same time, the predominance of asymmetric shocks does not seem to be too different than in some current EMU members (e.g. Portugal and Slovak Republic). Furthermore, on the same measure, there seems to be no better candidate with which to form a monetary union (with the exception of Sweden, which, at least for the time being, does not seem to be interested).

The relatively low synchronisation of cycles with the euro area, however, implies that the ECB monetary policy might be suboptimal for Iceland's conditions at times and lead to excessive volatility of prices and output. To avoid excessive volatility, Iceland would need to rely on alternative adjustment mechanisms. Above all, it is important that labour mobility and wage flexibility remain high. While the labour market is flexible overall – even if the OECD Employment Protection Legislation (EPL) index casts some doubts on the actual extent of the flexibility (Box 2.3) – with high participation rates, easy of entry for migrants,

### Box 2.3. How loose is Employment Protection Legislation (EPL) in Iceland?

Employment protection legislation refers to all types of employment protection measures concerning hiring (*e.g.* conditions for using temporary or fixed-term contracts, training requirements) and firing (*e.g.* redundancy procedures, mandated notice periods and severance payments, special requirements for collective dismissals). While these restrictions are intended to improve job security, they also render the labour market less flexible since they impose additional costs for adjusting the level of employment. The OECD EPL index provides a quantitative assessment of the degree job security by focusing on three main areas: employment protection of permanent workers against individual dismissal; regulation of temporary forms of employment; and specific requirements for collective dismissals. For Iceland, the index was recently computed for the first time using 2008 as a reference for the institutional settings. However, no major legislative change has been introduced in Iceland over the past several years, making the 2008 EPL index also a good approximation for earlier periods.

According to the EPL index, Iceland is characterised by an overall protection for workers which is only slightly below the OECD average and not too far off from Denmark, Sweden and Finland (Figure 2.7). Distinguishing between the three main employment categories, protection for permanent worker is very close to the OECD average, temporary work arrangements are less tightly regulated than in most OECD economies, and collective dismissals are relatively strict.

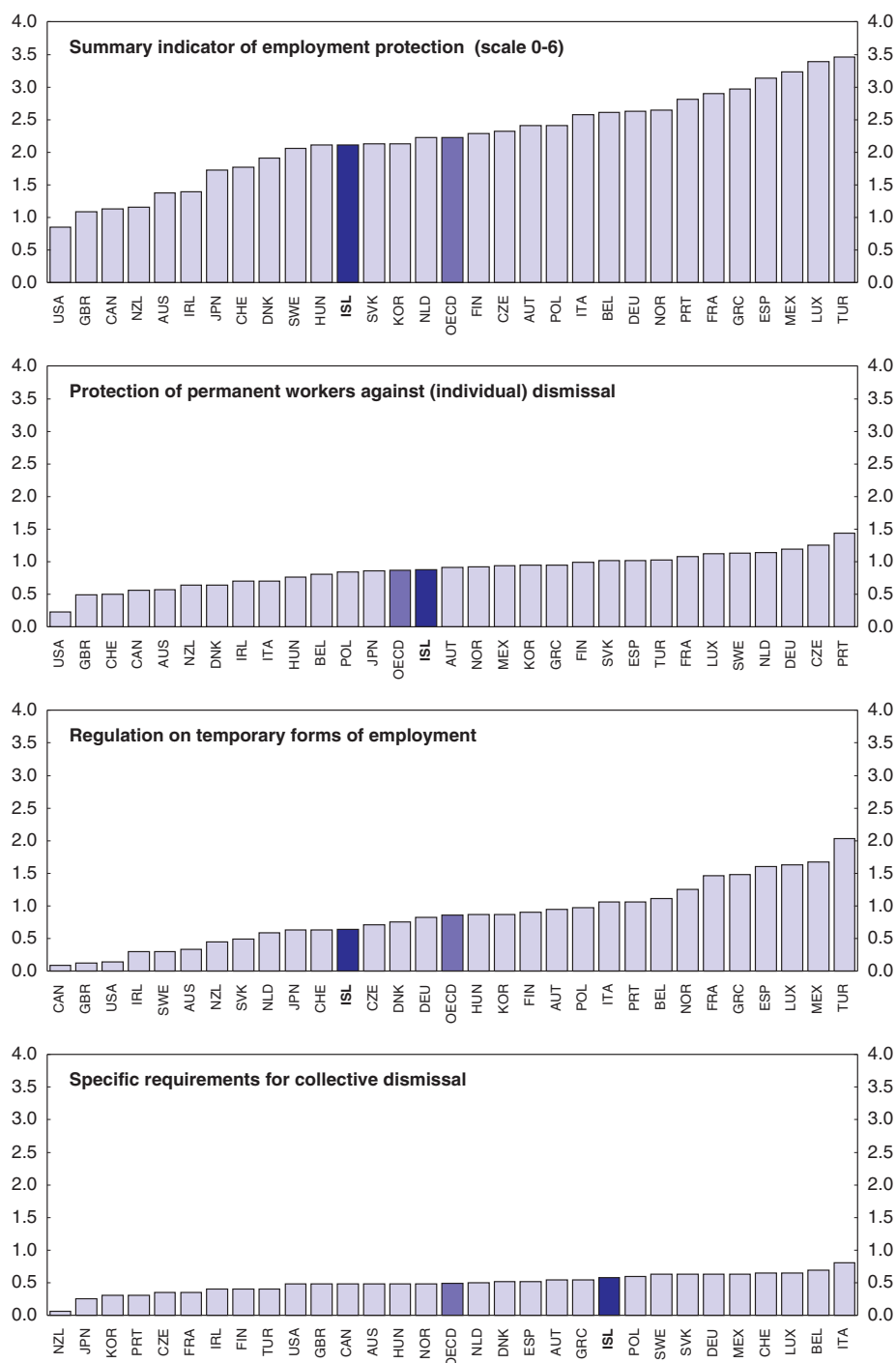
The fact that Iceland's EPL index is only slightly below the OECD average was a bit of a surprise since its labour market performance has typically been outstanding by international comparison. There are indeed many elements of Iceland's labour market institutional settings that make it very flexible. Above all, there is no legal right to severance pay and employment relationships can be generally terminated without giving reason. Temporary work arrangements can be made for all types of work and fixed-term contracts can be renewed without restrictions for periods up to 24 months.

At the same time, notification requirements tend to be relatively strict for all employment contracts, and thus restrict employers' flexibility. For example, regular employees with five years of service are entitled to three months' notice. Affiliates of the two largest private sector trade union federations – and 88% of Icelandic workers belong to a union – are generally entitled to even longer notice periods. In case of collective dismissals, employers also need to consult with the unions and provide them with the opportunity to suggest ways to avoid or limit the layoffs and their impact. Even temporary work agencies have to notify and report regularly to the Directorate of Labour. And workers employed by temporary work agencies enjoy the same rights of regular workers, including the pay and benefits stipulated in collective agreements.

In the typical OECD country, a high EPL score is associated with lower employment rates, especially for individuals at the margin of the labour market (OECD, 2004; Nickell and Layard, 1998). In Iceland, however, the participation rates of all types of workers – including younger, older and female workers – is very high (if not the highest) by international standards. This suggests that the not-so-low EPL score does not seem to have had any noticeable adverse effects in Iceland.

### Box 2.3. How loose is Employment Protection Legislation (EPL) in Iceland? (cont.)

Figure 2.7. OECD indicators of employment protection, 2008<sup>1</sup>



1. 2009 for France and Portugal.

Source: OECD, PMR database.

StatLink  <http://dx.doi.org/10.1787/705381771712>

### Box 2.3. How loose is Employment Protection Legislation (EPL) in Iceland? (cont.)

While addressing the shortcomings found by the EPL assessment should not be a top priority for Icelandic policy makers, it is important that they keep a watchful eye to ensure that those features – not captured by the EPL index – that have ensured satisfactory labour market outcomes in the past continue to operate in the future. The high degree of real wage flexibility exhibited in the past provides a case in point. Real wage cuts, as in the current downturn, have significantly contributed to macroeconomic adjustments in the face of negative supply shocks. Until now, real wages cuts came about through higher inflation rather lower nominal wages. If Iceland joins the euro area, however, nominal wage flexibility would have to become an important mechanism for adjusting to idiosyncratic shocks. Furthermore, it possible that the not-so-low EPL – in combination with a high degree of unionisation, as is the case in Iceland – may hinder the ability of employers to cut nominal wages when necessary.

Another reason for Iceland policymakers to be concerned about their country's EPL score is that it may have negative repercussions on product market competition. As for the labour market, the prospect of euro-area entry enhances the case for flexible and well functioning product markets. Research has found that strict EPL causes inefficient firms to stay longer in the market and hoard labour as they face high costs of reducing their workforce. This tends to reduce the entry and exit of firms, thereby lowering product market competition. In addition, if introducing new technologies implies that parts of the labour force have to be shed, strict EPL has the potential to affect a firm's innovation strategy (Bassanini and Ernst, 2002; Gust and Marquez, 2002).

strong work incentives and unemployment benefits of short duration by international standards, Iceland is now facing a massive increase of unemployment for the first time in recent history. Despite the political pressures that the sharp deterioration of labour markets is likely to generate, it is important, especially with the prospect of euro-area entry in a not-so-distant future, to avoid introducing policies that would undermine the good functioning of the labour market. Over time, higher replacement rates and longer duration for unemployment benefits would contribute to a sustained rise in unemployment and hinder macroeconomic adjustment. Other adjustment mechanisms should be improved: capital ought to be able to move freely – in any case the capital restrictions will presumably have to be removed well before euro-area entry – and fiscal policy ought to become more counter-cyclical. Furthermore, given that Iceland's economy is highly specialised in the production of aluminium and fisheries, more unorthodox stabilisation mechanisms, such as hedging against price fluctuations of these commodities, should be considered.

While the euro area may not currently fit all the criteria of an optimal currency area (OCA) for Iceland, positive links between income correlation and trade integration may improve business cycle correlation over time (Frankel and Rose, 1997). According to the so-called "endogeneity of OCA hypothesis", a country's suitability for entry into a currency union may have to be reconsidered if satisfaction of OCA properties is endogenous; i.e. if countries satisfy OCA properties *ex post* even if they do not *ex ante*. Amongst others, a recent study by Alesina, Barro and Tenreyro (2002) provides some support to this hypothesis, as currency unions are found to increase co-movements of prices and, perhaps, also of output. On the other hand, a competing theory postulates that as countries become more integrated, they will also specialise in those activities for which

they have a comparative advantage (Bertola, 1993; Bayoumi and Eichengreen, 1999). According to the so-called “Krugman specialisation hypothesis”, members of a currency area are therefore likely to become less diversified and more vulnerable to supply shocks; and consequently their incomes will be less correlated (Krugman, 1993). While there is still no agreement in the literature over which of these two competing theories should prevail (Mongelli, 2002), it nonetheless remains difficult to argue that an economy of roughly 300 thousand individuals constitutes an optimal currency area. In any case, further studies more focussed on Iceland may contribute to the public discussion and reinforce the case for EU and EMU memberships. To this end, the Central Bank’s announcement that it intends to update its 1997 report on the establishment and effects of the EMU and prepare a new analytical report comparing alternative models of flexible exchange-rate regimes with various fixed-rate structures is to be welcomed.

### *The road towards the euro poses challenges*

Euro-area entry would not automatically follow membership in the European Union. As all current EMU members, Iceland would also have to satisfy the Maastricht’s Treaty convergence criteria. These criteria require that each successful applicant achieves stability and convergence for: inflation; exchange rate; public finances; and interest rates. Most of these requirements could be satisfied without considerable efforts by a developed economy such as Iceland provided that a reasonable degree of macroeconomic stability is achieved (which should be desirable irrespective of the decision of joining the EU and the euro area). At the same time, the road towards the euro will pose some challenges and policy makers ought to be aware of them (Brook, 2005).

First of all, the Maastricht Treaty requires achieving price stability before euro-area entry. More specifically, the HICP inflation rate of a successful applicant ought to be no higher than 1.5 percentage point above the average inflation rate of the three “best-performing” EU-member states in terms of price stability. In addition, the achieved degree of inflation convergence should be sustainable. To this end, once the capital account has been liberalised, the authorities should resuscitate and, as recommended above, suitably modify the – temporarily dormant – inflation-targeting framework. Accordingly, the inflation target should be set in conformity with ECB definition of price stability; i.e. of HICP inflation “below, but close to 2%”. This will not to be easy to attain and may require difficult decisions. At the same, the price stability goal seems within reach, considering that Iceland’s HICP inflation averaged only 0.7 percentage point above that in the euro area over the 2001-07 period and that participation in the ERM2 itself should support the CBI’s credibility.

Nevertheless, the definition of “best performing” in the context of price stability creates some uncertainty about the reference value. Initially, the “three best-performers” were simply identified as the three EU countries with the lowest inflation rates. In 2004, however, the Commission decided to exclude Lithuania on the basis that “countries with negative inflation are not considered to be best performers in terms of price stability” (European Commission, 2004). This leaves open the question of whether countries with positive, but very low, inflation rates would be considered best performers; a scenario which might well materialise, if the global recession were to endure longer than currently anticipated. In any case, the definition of price stability provides a moving target for compliance with the criterion, since the composition of countries that meet the “best-performing” criteria will change over time, and their inflation rates cannot be predicted

with certainty. In the past, the reference value has ranged between a low of 1.9% in the second quarter of 1999 and a high of 3.3% in the second quarter of 2002. For this reason, the Icelandic authorities would have to be prepared to adjust the CBI inflation target as needed. The successful bid of Slovakia to join the EMU indicates that inflation targeting is a reasonable framework to conduct monetary policy towards euro-area entry. At the same time, the domestic authorities ought to stand ready to promptly react to the challenges that they will inevitably have to face (Brook, 2005; Huefner and Koske, 2008).

The Maastricht Treaty also requires stabilising the exchange rate before euro-area entry. The criterion for exchange rate convergence entails that the króna participate in the European exchange-rate mechanism (ERM2) for at least two years before euro-area entry. During this period, the króna ought to remain within 15% bands around a central parity exchange rate which is to be determined. The domestic authorities should therefore pay close attention that the chosen central parity be sustainable. Under the current circumstances, there is much uncertainty about what the equilibrium exchange rate of the króna might be. While the real exchange rate is considerably below its past average, it is not possible to rule out a further drop of the króna when restrictions on foreign exchange transactions are lifted. For this reason, it would be preferable to let the currency float after the capital controls have been removed, and enter ERM2 only once the exchange rate has stabilised.

The Icelandic authorities might have to face a tension between the price stability and the exchange rate stability objectives. Balassa-Samuelson considerations should not be as prominent as they have been for EMU applicants from Eastern Europe, since Iceland's GDP per capita is already in line with that of the euro area (Brook, 2005). However, aluminium and fisheries account for most of Iceland's exports; consequently, its exchange rate tends to follow those of other commodity producers, which the euro area is not (Figure 2.8). It is therefore conceivable that sharp movements in commodity prices might push the value the króna outside the ERM2's bands.

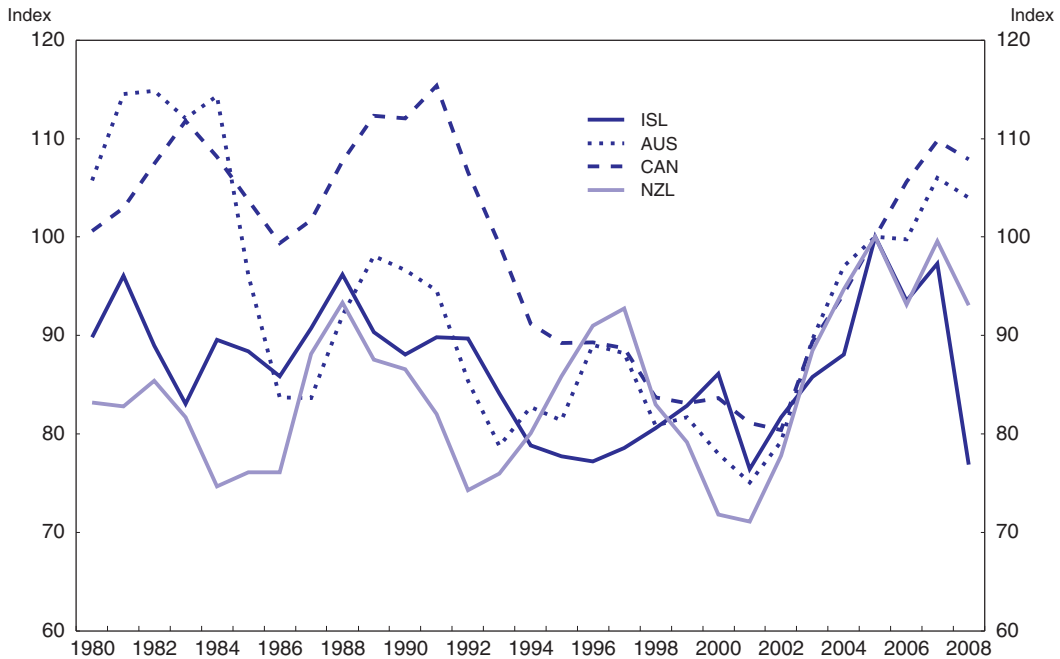
The Maastricht Treaty fiscal criterion euro-area entry requires that each successful applicant achieve a budgetary position without an excessive deficit – which is normally defined as a deficit that exceeds 3% of GDP – and that its gross debt be below, or approaching, 60% of GDP. Currently, Iceland is far from meeting either. According to the most recent projections, in 2009, Iceland's public deficit will be well above 10% of GDP and its gross debt will be about 100% of GDP. As discussed in Chapter 1 and later in this chapter, Iceland has entered an SBA with the IMF in November 2008, which requires fiscal consolidation measures of approximately 3% of GDP per year through 2013. This plan, which the Icelandic government is committed to respect, is expected to yield a primary surplus by 2011 and a surplus by 2013, thus putting public debt on a strong downward path. In sum, the process of fiscal consolidation will surely be difficult but it will be consistent with the EMU application process. Indeed, a policy of euro adoption would facilitate the task of policy makers by making clear the stakes involved in ensuring a sustainable fiscal position.

The fourth and final Maastricht criterion of interest rate convergence should not pose additional challenges, as long as monetary and fiscal policies are carried out consistent with euro-area entry. Complications, nevertheless, might arise if the sovereign risk premium were to rise more than currently envisaged, which might occur if the capital




Figure 2.8. **Real effective exchange rates in Iceland and other commodity producers<sup>1</sup>**

2005 = 100



1. CPI measured.

Source: OECD, Main Economic Indicators.

StatLink  <http://dx.doi.org/10.1787/705384361273>

controls were to be maintained for several years or no mutually satisfactory agreement could be reached with the creditors of the failed banks.

In conclusion, euro-area membership appears to be the best solution for Iceland among its long-term options for monetary policy. The road toward the euro will require difficult decisions, such as the negotiations over Iceland's fisheries. Once inside the euro area, however, the economy should noticeably benefit from the enhanced macroeconomic stability and the reduction in real interest rates. At the same time, some new problems will emerge (starting with the need to keep "changeover inflation" – e.g. from price rounding-up – under control) while some older problems will remain difficult challenges for the domestic authorities (from running a counter-cyclical fiscal policy to managing fluctuations in commodity prices).

### Substantial fiscal consolidation measures are urgently needed

Policy makers face an even more difficult challenge with regard to fiscal policy, as the collapse of the banking sector and the sharp recession have put public finances in a dire situation (Table 2.3). According to the Ministry of Finance's May 2009 outlook, the government debt has already moved up noticeably and is projected to rise further during the course of 2009. While the sharp increase in indebtedness is mainly accounted for by the one-time costs resulting from the collapse of the banking sector, as the economy began to sharply contract, public revenues plunged and expenditures, especially on unemployment benefits, increased rapidly. Consequently, government net lending turned negative

Table 2.3. **General government finances**  
Percentage of GDP

	1995-02	2003-06	2007 <sup>1</sup>	2008 <sup>1</sup>
Gross debt	45.2	32.6	28.1	61.0
Net debt	27.2	15.6	7.1	26.8
Revenue	41.4	45.4	47.9	43.4
of which taxes	35.1	39.1	40.7	36.0
Expenditure	42.1	43.3	42.5	44.6
of which public consumption	22.9	25.0	24.3	24.6
Financial balance	-0.7	2.1	5.4	-1.2
Primary balance	1.4	2.3	5.8	-0.9

1. Preliminary figures for 2007 and 2008.

Source: Ministry of Finance, May (2009).

in 2008 for the first time since 2003, posting an income deficit of 1.2% of GDP. (And the deficit-to-GDP figure surges to nearly 15% if the costs of recapitalising the CBI are included.)

The deterioration of public finances requires, as planned, a firm policy response. The present high deficit is cushioning the economy, but cannot be sustained, and adjustment could contribute to a better policy mix. Thus far, the government response has been gradual, as foreseen in the IMF programme. Early in 2009, the government hiked the flat rate on the personal income tax from 22.75% to 24.1% and local authorities raised their rates, on average, from 12.97% to 13.1%. These actions are estimated to yield ½ per cent of GDP. At the same time, the government also postponed expenditures – for transfer payments, operational expenditures and investment spending – that had been budgeted before the burst of the crisis. These measures should save 2½ per cent of GDP. In May, additional revenue measures – on alcohol, tobacco, gasoline and vehicle licensing – were introduced, narrowing the fiscal gap by a further ½ per cent of GDP. The government presented to Parliament in late June a preliminary medium-term fiscal consolidation plan for 2009-13 to achieve balance in public finances, with a final version due to be presented to Parliament in October 2009 along with the 2010 budget proposal. Under the plan, additional taxes were introduced and expenditures trimmed further in 2009, yielding fiscal savings of about 1% of GDP.

The consolidation measures taken thus far represent a welcome step in the right direction, and corrective fiscal measures should continue to be implemented. As described in Chapter 1, the government has repeatedly stated that it is fully committed to respect the Stand-By Arrangement (SBA) which was agreed with the IMF late last year. On the fiscal side, the Arrangement calls for consolidation of approximately 3% of GDP per year through till 2013 with the aim of attaining a primary surplus by 2011 and a surplus by 2013. In May 2009, the Ministry of Finance's own projections were fully consistent with this plan. The medium-term fiscal plan presented in July entails fiscal savings for 2009 and calls for further radical actions to be taken over the next several years with the aim of restoring fiscal sustainability in line with the economic programme agreed with the IMF. According to the plan, the Icelandic Treasury – the central government – is expected to run a primary surplus of 3.4% of GDP in 2011 and 8.6% in 2013.

Keeping the public deficit in conformity with the IMF SBA is essential to lay out the foundations for a sustainable recovery. Public finances, which as late as mid-2008 appeared to have been in an enviable state, have quickly turned around after the burst of the crisis at

the end of the year. First of all, gross public debt has soared to about 100% of GDP, in part reflecting the government's assumption of some of the failed banks' debt. While the net costs of honouring the guarantees of the banks' deposits might turn out to be a present value of about 17% of GDP (see Chapter 1), the government will have to borrow considerably more to honour these commitments until the banks' assets have been sold. In any case, substantial uncertainty remains about the ultimate fiscal costs of the banks' collapse, and thus about the extent of government indebtedness. Another cause of concern comes from the prospect of double-digit public deficits. Some of the increase in the actual deficit is surely due to transitory factors, such as the cyclical increase in unemployment benefits and the cost of recapitalising the CBI; nevertheless, the fiscal gap appears to be structural to a large extent. Simply put, important sources of revenues have vanished and are unlikely to come back. Meanwhile, debt dynamics have worsened. The costs of servicing the larger public debt have risen considerably, and are projected to have risen from 2.4% in 2003-07 to roughly 10% of GDP in 2009-10, although, at the time of writing, some uncertainty remains about these estimates. Even so, these projections do not reflect the risk that interest rates on government bonds – which have remained remarkably stable – might increase sharply, once capital controls are lifted. In other words, the authorities should not discount the “funding risk” – that markets might turn drastically against Iceland – when considering the proper stance for fiscal policy. All in all, these considerations indicate that a strong medium-term fiscal consolidation programme, such that envisaged in the IMF SBA, is necessary to restore fiscal sustainability.

The fiscal consolidation programme is also an essential step towards euro-area entry. The Maastricht Treaty requires that the public finances of EMU-applicant countries be solid, which, clearly, is not the case in Iceland. As in many other European countries, the goal of euro-area entry could serve to develop a domestic consensus about the adjustment measures called for by the IMF SBA – which are also fully consistent with accession in both the EU and the EMU – and maintain a prudent conduct of fiscal policy after the IMF programme has been completed. After the EU application process has started, the domestic authorities will also benefit from closer collaboration with Eurostat, which will be supervising the collection of statistics, especially regarding public finances. This should improve the quality and comparability of Iceland's statistics, and thus also help restoring the country's international reputation.

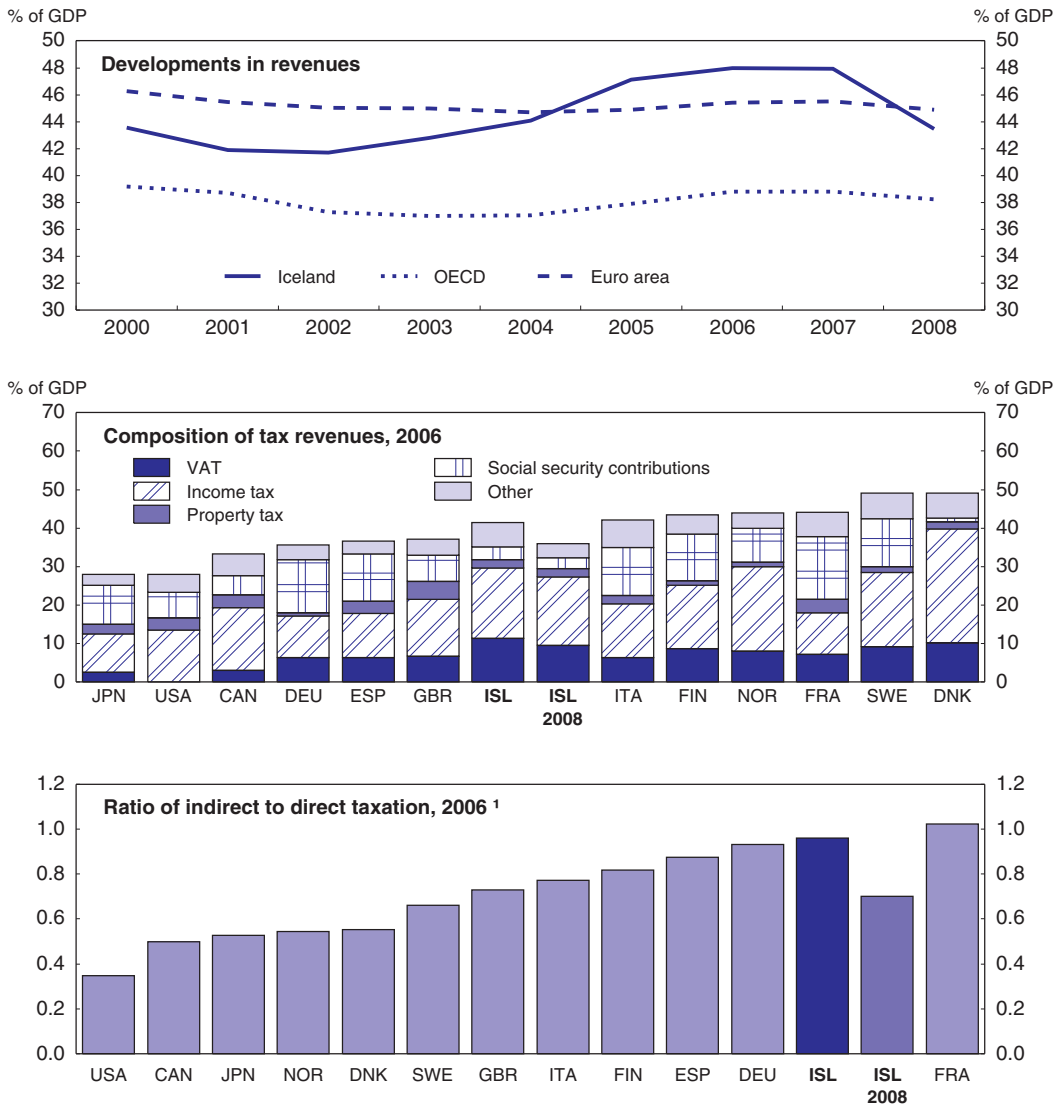
It will also be important to ensure that the burden of adjustment is distributed fairly. The intention of the government is to reduce the fiscal deficit through both tax increases and expenditure reductions in roughly equal measure, although the weight will have to be towards tax increases in the earlier years owing to the longer lead times for expenditure reductions. With this in mind, the remainder of this chapter presents a range of options, focusing first on increasing revenues and then on containing expenditures, the government could consider to restore fiscal sustainability. As the fiscal multipliers associated with public expenditures are generally believed to be larger than those of taxes, at least over the short run (although the issue is far from being settled in the academic literature), it also seems more prudent to put more emphasis initially on the revenue side so as not to unduly restrain the economic recovery.

## Measures to increase public revenues

### Immediately reverse the tax cuts implemented over the boom years

The financial crisis and severe economic downturn are having dramatic effects on the revenue sources of Iceland's central government and municipalities. The fall in revenues has been even deeper than that in economic activity as high-income sectors, such as banking and real estate, have been at the epicentre of the crisis and consumer spending, which is highly taxed, has plunged (Figure 2.9). At the same time, it is likely that the bulk

Figure 2.9. **Public revenues: recent trends and composition**



1. Taxes on goods and services divided by taxes on income, profits and capital gains.

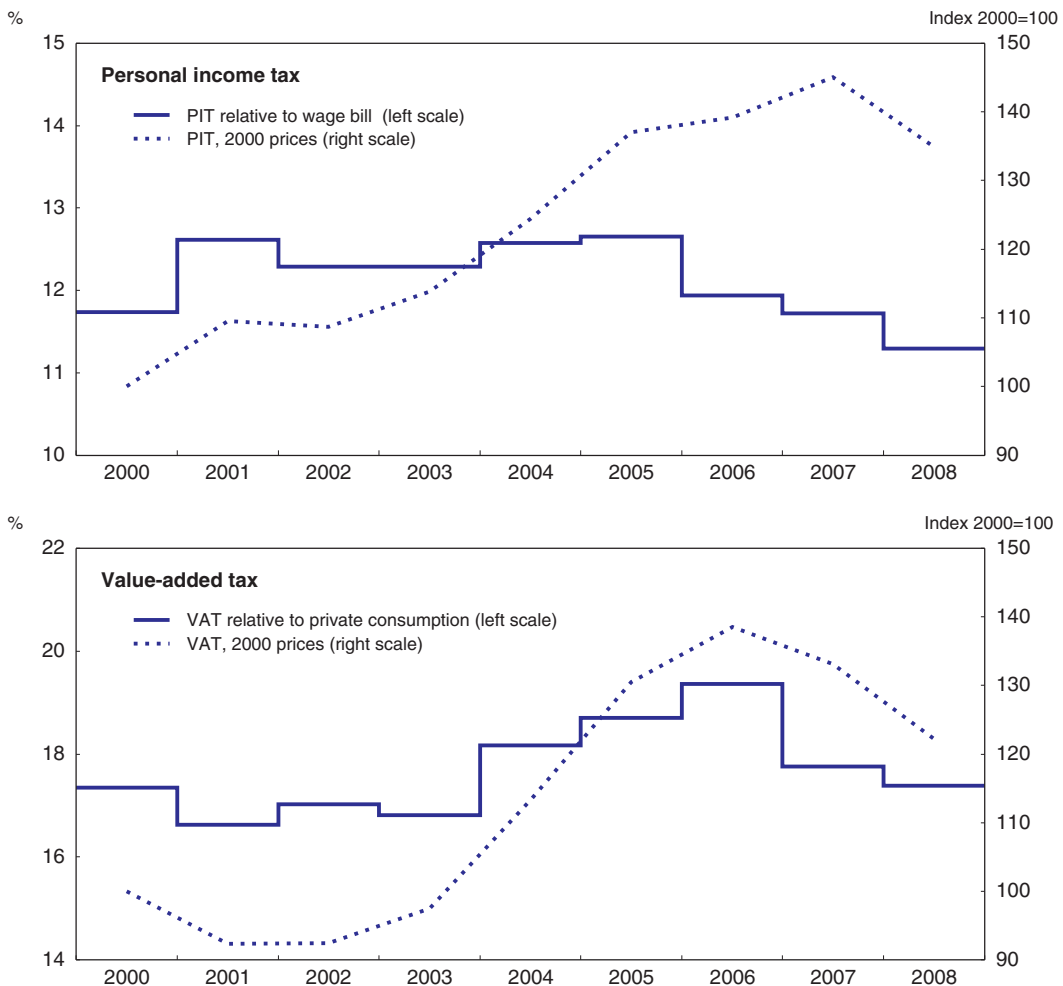
Source: OECD, Tax Revenue database and Secretariat's estimates based on preliminary 2008 figures by Statistics Iceland.

StatLink <http://dx.doi.org/10.1787/705385658655>

of tax revenues from the financial sector is largely lost permanently – the new banking sector will be much smaller – and that expenditures will have to be cut permanently by a corresponding amount.

There were repeated tax cuts over the past several years, which were made possible by the continuous buoyancy of public revenues (Figure 2.10). The changes made to the structure of personal taxes over the past decade provide a revealing case in point. The personal income tax (PIT), which is the main source of revenue for both the central government and municipalities, is levied at flat rate on resident's gross income (excluding income from capital) above a certain threshold (which is typically indexed to inflation). Since 2001, the PIT rate has been reduced from 45.76% to 35.72% in 2007 and the tax threshold has tended to rise less than inflation. The valued-added tax (VAT), another important source of income, has also been reduced. While the 24.5% standard rate applied on most good and services has been kept constant, the reduced rate levied on food and a

Figure 2.10. **Personal income tax and value-added tax collected by the central government**



Source: Ministry of Finance.

StatLink  <http://dx.doi.org/10.1787/705401841065>

number of other items was lowered from 14% to 7% in March 2007. At the same time, excise duties on several food items were abolished and import duties on meat were reduced. Earlier, in 2005, the wealth tax was abolished; and this list could be longer. Similarly, the corporate income tax rate was reduced from 30% in 2001 to 18% in 2007. The corporate income tax, together with other taxes, was lowered further in 2008 as the authorities, despite warnings that the economic situation was quickly deteriorating, wanted to strengthen Iceland's attractiveness as an international business location. Despite these cuts, government revenues over 2002-07 outpaced GDP (see Figure 2.9).

Some of these tax cuts might have seemed justified at the time by the belief that the boom in revenues was permanent. However, as indicated in the 2008 Survey, the 2007 tax cuts occurred at a time – just ahead of general elections – when the monetary policy stance had already been tightened as the economy was overheating and other macroeconomic imbalances in the economy were evident. Loosening the fiscal stance at the top of the cycle was wrong; as a result, taxes will have to be raised during the recession. More generally, although fiscal consolidation was considerable during 2002-07, the government, especially with the benefit of hindsight, should have gone further, thereby providing a greater counterweight to the unsustainable boom in private domestic demand.

As announced by the government, the starting point for the fiscal consolidation programme should be to reverse the tax cuts implemented over the past decade, which Iceland can no longer afford. Above all, the PIT and the VAT should be raised to the levels that prevailed just a few years ago. There is also room to increase the tax rates levied on corporate income and capital income, and the wealth tax could be re-introduced. As noted above, under the pressure of the deteriorating outlook for public finances, the government has taken actions along these lines. The flat PIT rate was raised by 1.35% at the beginning of 2009 and excise duties have been raised twice so far during the crisis. In addition, some new measures have been introduced in July and additional measures are contemplated in the government fiscal consolidation plan. To boost the PIT, a temporary 8% surcharge was introduced on high incomes.

### ***Improve the tax system over time***

The fiscal authorities will likely have to look for other sources of revenue since, as planned, reversing the past tax cuts will not be enough. In choosing other measures, priority should be given to those that cause the least economic distortions. To this end, following the lead of many of Iceland's Nordic neighbours, a tax could be levied on emissions of carbon dioxide and other greenhouse gases. A carbon tax would produce significant revenues and also discourage the consumption of goods and services that are more harmful to the environment. The case of Sweden provides some insight about the order of magnitude of these effects. In Sweden, the carbon dioxide tax yields slightly more than 3% of the central government tax revenues (or nearly 1% of GDP). There is also an annual vehicle tax which depends, amongst other factors, on the amount of carbon dioxide the vehicle emits. As a result of these and other policies, which include generous subsidies for the production of alternative energy, a 2007 government report found that Swedish greenhouse emissions had declined by nearly 10% since the 1990s level when the carbon tax was first introduced. For Iceland, where the level of greenhouse gas emission is slightly below that of Sweden even after controlling for the size of the economy, the introduction of a carbon dioxide tax modelled after that one in Sweden could be expected to yield  $\frac{3}{4}$  per cent of GDP.

More generally, there is also scope to reform the tax system. First of all, the relatively simplicity of the Icelandic system is partly offset by the existence of two benefits that are paid through the tax system, the child benefit and the mortgage interest rate rebate. The child benefit could be better targeted to lower-income households. Currently, the scheme pays about the equivalent of US\$1 200-US\$1 500 (ISK 15 2000-18 1000) per child to each parent with income up to the equivalent of US\$15 000 (ISK 1 800 000) and is phased out for higher incomes. As the income threshold for benefit curtailment is about 40% of 2009 per capita GDP, much of the middle class can take advantage of the scheme. Therefore, there is room to reduce the income threshold without affecting the poor. Similarly, the mortgage interest rate rebate provides a considerable tax relief to the middle class. Early in 2009, as nominal interest payments soared with the rise in inflation and the collapse of the króna, the scheme was expanded to help the increasing share of distressed homeowners. While this might have been justified by reasonable concerns that the number of mortgage defaults could have rapidly escalated, it is also clear that the change provided considerable benefits also to those who did not need them, and it is also making a significant dent in public finances. As the economy recovers and households adjust to the higher interest payments, the tax credit for mortgage interest payment should be quickly reduced. Moreover, as argued in previous *Surveys*, the authorities ought to consider whether to remove the mortgage rebate. The benefit tilts incentives towards home ownership and high household indebtedness, and biases investment decision away from productivity-enhancing business capital spending. An equivalent level of assistance to the lower-income households could be achieved by directly subsidising their home purchases or by expanding the social housing programme. The July consolidation programme, recognising this, calls for stricter means-testing of child- and interest benefits.

Over time, more fundamental changes could be undertaken in order to improve the efficiency of the system and allow for higher taxes without harming growth. To this end, the tax base could be widened, further corrective taxes imposed and loopholes closed. For instance, there appears to be scope for reducing the categories of goods and services exempt from the VAT. Under current law, the most common categories of exemption are health services, social services, education, libraries and art, sports, passenger transport, postal services, rental of property and parking spaces, insurance and banking services. While some of the exemptions seem well justified (*e.g.* health and social services), Iceland policymakers should re-examine whether the preferable tax treatment is warranted for all.

### ***Make sure the unemployment benefit system is properly funded***

The sharp increase in the unemployment rate has put the unemployment benefit scheme under considerable pressure, which is likely to intensify if the recession deepens, as projected. The authorities anticipate that the fund from which the benefits are paid out will be extinguished before the end of the 2009. According to the Directorate of Labour, ISK 21.5 billion (about 1.5% of 2009 GDP) are required to continue operating the scheme over this year and next. For this reason, taxation for the full funding of the unemployment insurance scheme was provided in new legislation in June.

The fast depletion of the unemployment insurance fund has been the result of rapidly deteriorating labour market conditions. Previously, for over thirty years, Iceland's labour market outcomes had been remarkably positive – on average, nearly 80% of the adult population has been employed since 1991 – in part reflecting a low EPL index (Box 2.3). The registered unemployment rate, which had averaged only 2% over 1980-2008 and was

running below 1% as recently as 2007, soared quickly after the burst of the crisis and, by June, had risen to 8.1%. The unemployment insurance fund, which, until July 2009 was financed by a relatively low (0.65%) payroll tax, was not set up to cope with such a large number of claimants.

The Icelandic authorities are taking proper action to ensure that unemployment benefits will continue to be paid. First of all, the scheme does not appear to be overly generous, especially considering that the unemployment rate is projected to remain elevated for quite some time. The scheme pays a benefit up to 70% of the last salary for the first three months and a reduced fixed amount for three more years. After that, those who remain unemployed, if they qualify, fall into the general welfare schemes. In addition, the individuals receiving unemployment benefits are required to participate in active labour-market programmes and are strongly discouraged from rejecting jobs offered by the government's employment agency – each job refusal entails the loss of benefits for forty days. Moreover, the Directorate of Labour, in agreement with the social partners, has utilised the resources in the fund to discourage lay-offs. In May, 20% of those collecting (reduced) unemployment benefits were working part-time. Last but not least, minimising the social costs of the crisis will also help to create the political consensus for the necessary fiscal consolidation measures.

The resources to cover the gap in the unemployment insurance fund will also have to come from higher future contributions. The payroll tax was increased to a level that is expected to balance the fund's accounts over the economic cycle. Alternatively, the authorities could have considered financing the unemployment benefits scheme by introducing a layoff tax, which firms would have to pay when they dismiss workers. As argued by Blanchard and Tirole (2003, 2008), payroll taxation goes the wrong way for two reasons: the absence of layoff taxes leads firms not to internalize the costs of insurance and, by increasing labour costs, the presence of payroll taxes gives incentives to firms to lay workers off. In addition, to keep the fund solvent, the authorities should also consider whether to means test the benefits.

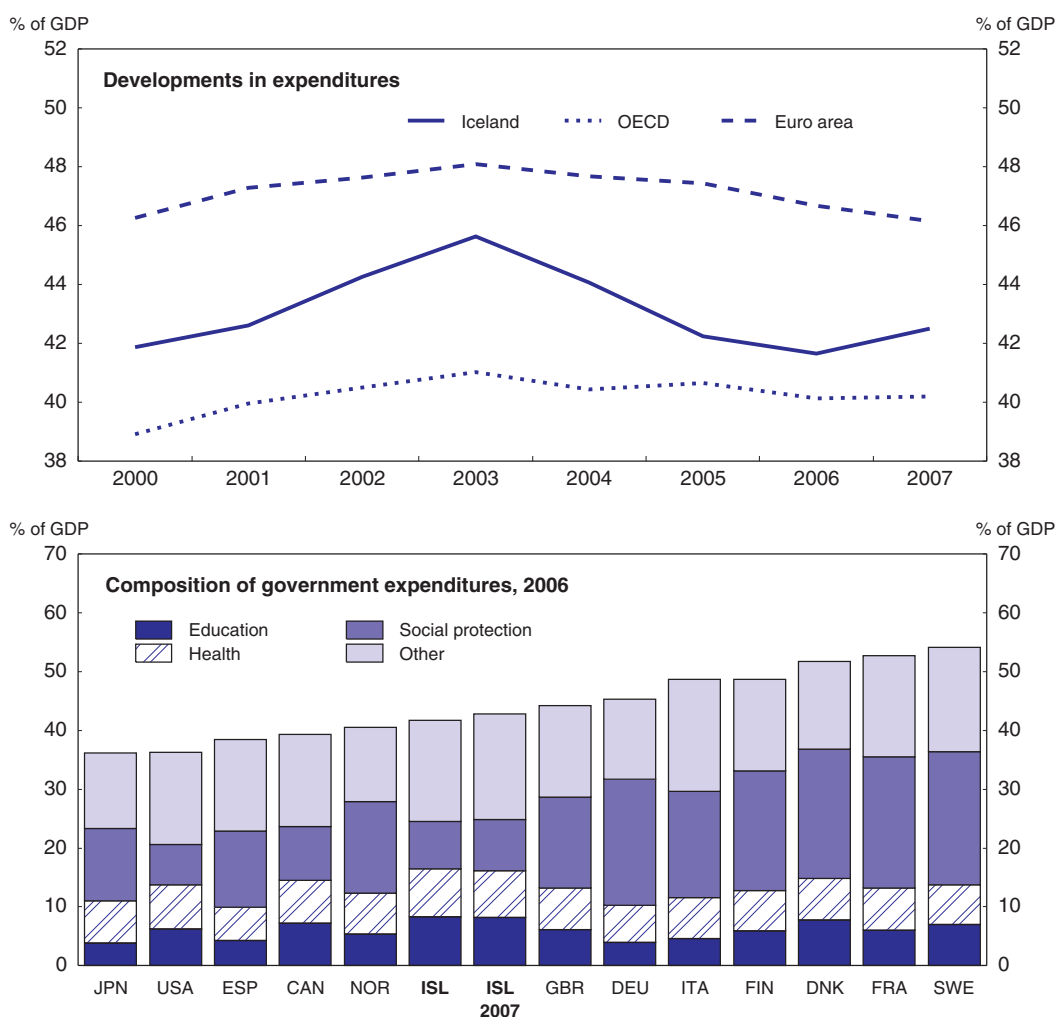
## Measures to contain public spending

### ***Hold back public-sector wages and public investment***


The planned fiscal consolidation will necessarily also entail substantial measures to reduce public spending. In recent years, public expenditures increased at a pace similar to that of GDP (Figure 2.11). Now that the economy has contracted sharply, which to a large extent appears to be a permanent change, public spending will also have to be scaled back significantly. While it may be difficult to reduce expenditures rapidly, the government should continue developing its plan for how it intends to contain public spending over the next few years.

Just like for taxes, expenditure areas that expanded rapidly during the boom years are good areas to look at for savings as they were not considered to be a priority when Iceland was less prosperous, a situation that it now finds itself in again. Both public-sector wages and public investment increased rapidly in recent years and, consequently, should be now scaled back, as planned. Such measures would also yield considerable savings in the near term, whereas other plans – discussed later in the chapter – might restrain public spending only over a longer time horizon. Government real wage rates received a significant boost in recent years, as the then booming financial sector raised the demand for more skilled



Figure 2.11. **Public expenditures: recent trends and composition**

Source: OECD, National Accounts and Secretariat's estimates based on preliminary 2008 figures by Statistics Iceland.

StatLink  <http://dx.doi.org/10.1787/705448356516>

workers. On average, public-sector real wage rates increased by 2.7% per year over 2003-07 (see Figure 1.16). With retention no longer a problem and wages counting for a large share of public spending, a freeze, or perhaps even a cut, of nominal wage salaries in the public sector would result in a significant decline in real government expenditures, at least in 2009. In any case, considering that most public-sector workers are not at risk of losing their job, their wages should grow well below those in the private sector at least until the fiscal consolidation goals have been met. Similarly, public investment, which rose at an annual average rate close to 12% over the 2003-07 period (see Figure 1.12), should also be scaled back as much as possible. To this end, the government, as planned, should consider imposing a moratorium on all non-essential public infrastructure projects.

### **Improve the fiscal policy framework**

Substantial savings could also be achieved over time by improving the framework for conducting fiscal policy. As discussed in the 2008 OECD Survey, in the past, public

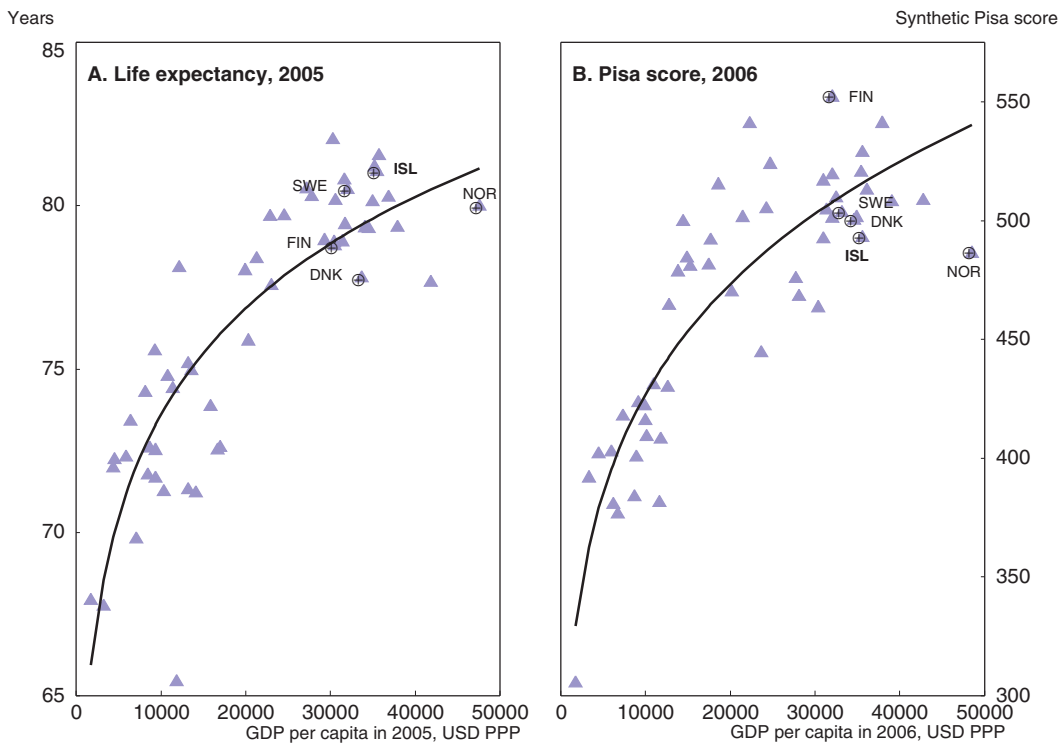
expenditures have frequently grown faster than planned by the authorities. In 1992, a top down “frame budgeting” approach was introduced to set spending limits for each of the ministries and their agencies. In 2003, the approach was supplemented by the adoption of spending rules, setting growth ceilings for real public consumption and real transfers. However, fiscal discipline continued to be less than satisfactory. The National Audit Office repeatedly observed that a significant number of ministries and public agencies significantly overspent 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 undermined stated government objectives. In practice, these rules seem to have been more a forecasting exercise than a means of budgetary restraint. With no mechanism in place to ensure that targets were met, each annual budget typically presented an update of the previous medium-term plan starting from a higher expenditure level. While the lack of fiscal discipline might have not been perceived as an urgent problem when the economy was booming and public revenues were rising rapidly, this is no longer the case.

The challenge of improving the budgeting framework should not be delayed any further. Achieving the fiscal consolidation agreed under the IMF SBA will be much less difficult if budget expenditures growth ceilings are met. To this end, ministries and public agencies should have to make up for any expenditure in excess of their authorised budget ceilings in the following years; equally, they should be able to carryover credits for under-spending, thereby avoiding a rush of wasteful spending at the end of the year. In addition, the National Audit Office should be given more authority to monitor the implementation of the budget. Looking further ahead, managers need to be given greater autonomy and held accountable for meeting objectives.


The government should announce spending targets and overall fiscal objectives over a multi-year horizon. Compliance with these targets and objectives 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. Transparency would be enhanced if the spending limits were set in nominal rather than in real terms as in the past, which would also increase the government’s ownership of the goal of controlling inflation. If the government is determined to lead Iceland into the euro area, public spending, and especially public-sector wages, should increase at a pace consistent with the Central Bank inflation target, which often was not the case in the past. 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 stabilisation.

### **Implement cost-cutting structural reforms**

Aggressive fiscal consolidation efforts will also have to be directed to cut spending in the large public spending programmes. International comparison indicates that Iceland’s public spending in health care and education is high in relation to GDP (see Figure 2.11). Furthermore, Iceland’s relative performance – measured by outcome *versus* GDP per capita – in health and, especially, education indicates that there might be scope for structural reforms in these areas (Figure 2.12). Admittedly, this constitutes a difficult challenge for Icelandic policy makers since spending cuts in health care and education spending are never politically popular. With this in mind, reforms should be designed to achieve the same outcomes at lower costs.

Figure 2.12. **Performance in health and education**

Source: World Bank WDI database; OECD, PISA Results.

StatLink  <http://dx.doi.org/10.1787/705502058683>

To be sure, health outcomes and the quality of health services are very good by international standards. 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. It is important that proper care is taken to maintain the high-quality health services, which contribute to the enviable health status of the Icelandic population. 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 (Alfonso *et al.*, 2005). For example, 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.

The 2008 OECD *Economic Survey of Iceland* recommended several options for enhancing spending efficiency in the health care sector (OECD, 2008; Suppanz, 2008). To begin with, 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 outsourced 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 (hospitals) and reformed where it does not

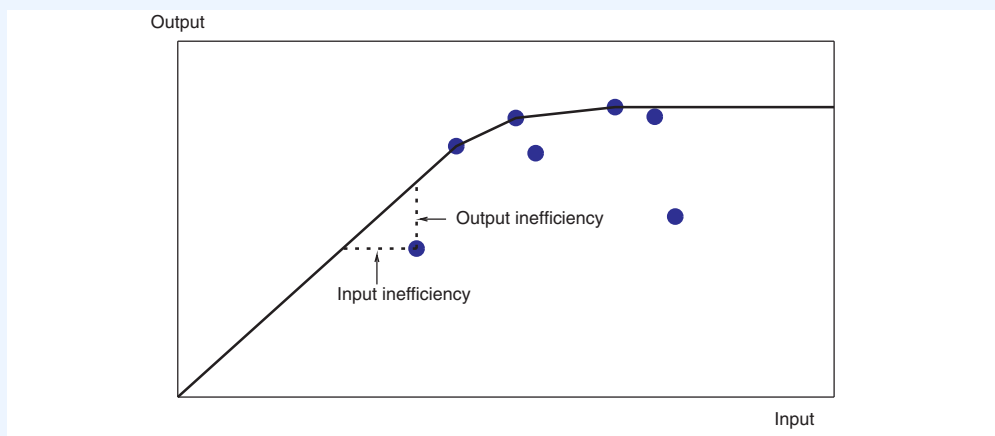
provide sufficient incentives for cost-savings (for instance, pharmaceuticals). In addition, or alternatively, the authorities could consider introducing a form of gate-keeping system in which patients are directed to the most appropriate level of care. Another policy priority should be to accelerate the implementation of activity-based funding in hospitals, which account for a high share of health care spending in Iceland. 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 should also 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 should 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.

Admittedly, it is very difficult to gauge the extent of the savings that could result from implementing reforms along these lines. One methodology often used to assess the efficiency of social spending is Data Envelopment Analysis (DEA), a technique that allows an efficiency frontier to be estimated through a cross-section comparison of the social outcomes in question to various monetary and non-monetary inputs (Box 2.4). For health

#### Box 2.4. Measuring the efficiency of social spending

The analysis conducted for this chapter estimates an efficiency frontier that relates outcomes of the health and education system to monetary and non-monetary inputs through Data Envelopment Analysis (DEA) based on the work conducted by the Secretariat in Sutherland *et al.* (2007), Joumard *et al.* (2008) and most recently in the context of the 2009 Survey of Mexico (OECD, 2009b; for a more complete account, see Schweltnus, 2009). The method uses linear programming techniques to construct a frontier from the most efficient observations, which “envelop” the less efficient ones (Figure 2.13).

Figure 2.13. **Efficiency frontiers**  
constant returns to scale



Source: Sutherland *et al.* (2007).

StatLink  <http://dx.doi.org/10.1787/705504176054>

#### Box 2.4. **Measuring the efficiency of social spending** (cont.)

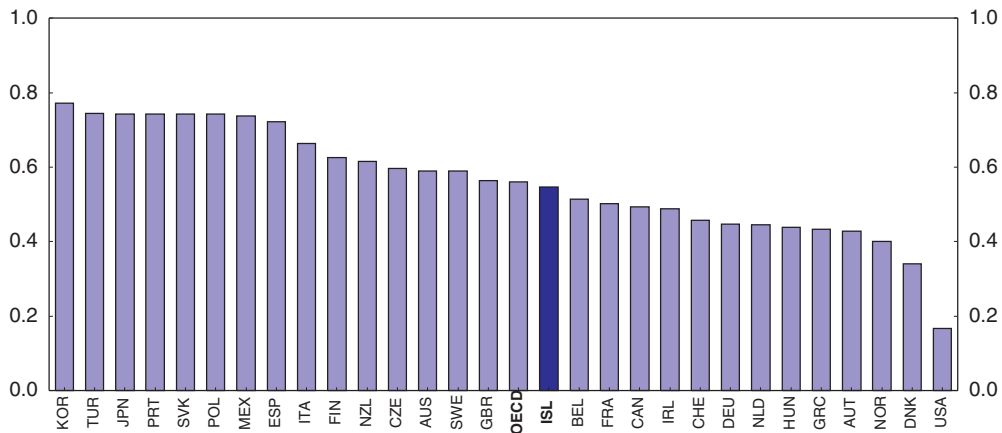
The method distinguishes between input and output efficiency, and technical and allocative efficiency. Input efficiency requires the use of a minimum bundle of inputs to produce a given output, while output efficiency requires the maximum amount of output from a given bundle of inputs. Allocative efficiency is more relevant than technical efficiency as it requires cost minimisation or benefit maximisation. This chapter uses input efficiency in the allocative sense to measure efficiency of social spending in Iceland. This is the appropriate concept for the Icelandic case in that, rather than minimising the gaps in health and education outcomes, the main objective of the Icelandic authorities is to reduce costs while maintaining the current outcomes. Technical efficiency allows conclusions on the efficient use of physical health inputs to be drawn but not on the efficiency of spending.


While the DEA analysis provides an attractive summary measure of efficiency of spending, it has a number of drawbacks that have to be addressed in its practical implementation.

- **Sensitivity to small samples.** If the sample is small, the efficiency level is likely to be overestimated because the most efficient country is likely to be excluded from the sample. The efficiency scores reported in this chapter are therefore corrected for small sample bias through the bootstrapping procedure proposed by Simar and Wilson (1998, 2000). Note that due to the small sample correction procedure, no country is found to be on the efficiency frontier.
- **Sensitivity to the number of included inputs and the form of the efficiency frontier.** Only a limited number of inputs can be included in the estimation and an assumption on economies of scale in production has to be made. The efficiency scores reported in this chapter are robust to various sensitivity checks on included inputs and economies of scale. On grounds of economic plausibility, only efficiency scores using the assumption of constant returns to scale are reported.
- **Sensitivity to outliers.** A country that has an atypical combination of inputs and outputs is likely to be classified as efficient because there are no appropriate comparator countries in the sample. For this reason, developing countries – included in Schwellnus (2009) – are excluded from the sample for the results reported in this chapter.

spending, outcomes are typically proxied by life expectancy at birth, while total health spending per capita, GDP per capita, and fruit and vegetable consumption per capita are used as input variables (Joumard et al., 2008). Deviations from the estimated efficiency frontier indicate inefficiencies. In particular, it is “input efficiency” – that is the minimum bundle of inputs to produce a given output – which provides the relevant measure for the potential cost savings.

DEA-based estimates indicate that Iceland could reduce spending by one-half without compromising health outcomes if it were able to reach the efficiency frontier (Figure 2.14). Reaching the goal of being on the efficiency frontier is, however, beyond the scope of Iceland, at least in the foreseeable future. No country is found to be on the efficiency frontier since the efficiency estimates are computed using a small sample correction procedure. For this reason, a comparison with the level of efficiency attained in other OECD countries, rather than with the estimated frontier, might yield a more reasonable gauge of the potential savings resulting from implementing the cost-cutting reforms discussed above. If

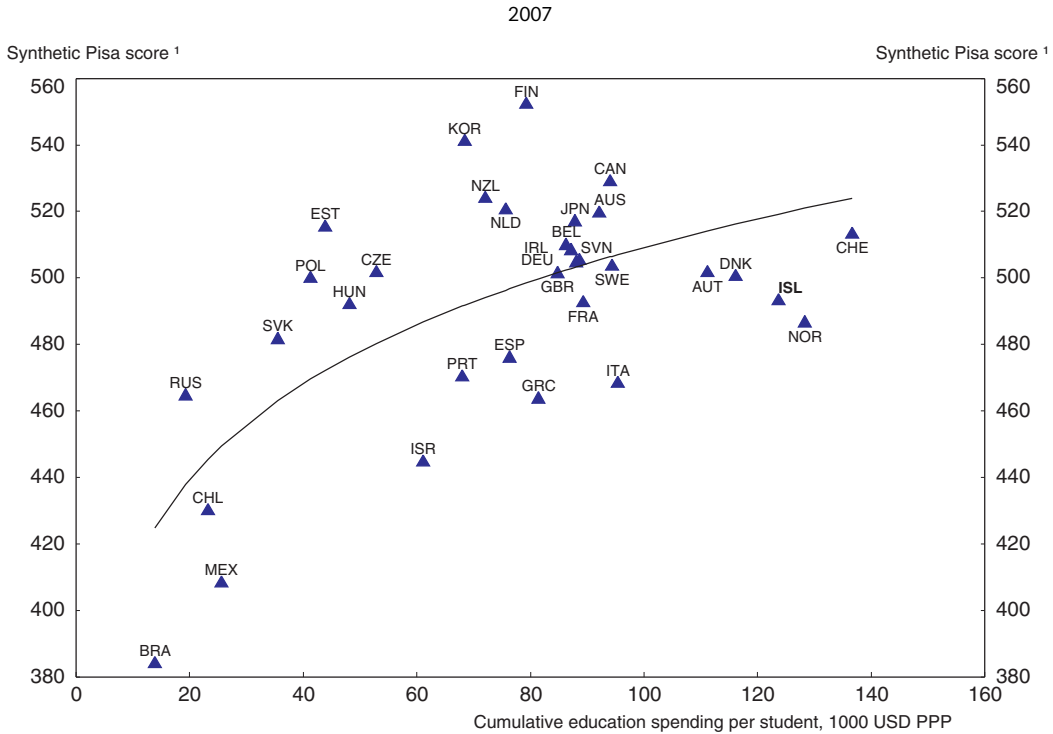
Figure 2.14. **Input efficiency of the health system**

Source: Schweltnus (2009), using OECD, World Bank, World Development Indicators database; FAO, Faostat database.  
 StatLink  <http://dx.doi.org/10.1787/70554355251>

one assumes that these reforms could boost the input efficiency of the Icelandic health system from the current level – which is about the OECD average – to that of Spain (Finland is not far off), which is the first quartile in the distribution, then it would be possible to save 17.5% of spending while maintaining the same health status. As public health spending has averaged about 8% of GDP in recent years, this means that yearly savings of 1½ per cent of GDP could be achieved over time without compromising health outcomes.


The scope for enhancing spending efficiency in the education sector appears to be even greater than for health care (see Figure 2.12). For a long time, Iceland's educational achievements, as measured by PISA test scores, have been disappointing compared to those of other countries despite the substantial resources invested. Reflecting a general trend towards decentralisation in Iceland as well as the belief that the educational system should be more responsive to local needs, the responsibility for compulsory schooling (up to the age of sixteen) was transferred to municipalities in the mid-1990s. The reform, however, has not produced satisfactory outcomes: spending per student has increased, as additional resources have been devoted to reduce the (already low by international comparison) teacher-to-student ratio, but educational achievements, especially in rural areas, have remained low (Figure 2.15). Icelanders also spend an unusually long time to complete upper-secondary education, with most students taking the university entrance examination only at the age of 20. Consequently, relatively few students complete their studies, contributing to maintaining a persistent gap between the low skilled and high skilled in the labour force, despite high public spending by international comparison. Resources invested in higher education have also increased rapidly in recent years as the authorities tried to offer a more comprehensive system, rather than encouraging studies abroad, in the face of an explosion in enrolment.

The 2006 OECD *Economic Survey of Iceland* pointed out these deficiencies and recommended that the authorities undertake a series of measures which promised not only better outcomes but also lower costs (OECD, 2006; Suppanz, 2006). Such reforms should not be delayed any further. Municipalities, which are responsible for pre-school and primary education, will be obliged to cut spending in these areas as their revenues have fallen and their access to external financing sources is limited. To this end, they should

Figure 2.15. **Pisa score and education spending per student**

1. The synthetic PISA score combines the scores on the reading, mathematics and science scale through factor analysis.

Source: OECD, PISA Results 2006.

StatLink  <http://dx.doi.org/10.1787/705571336720>

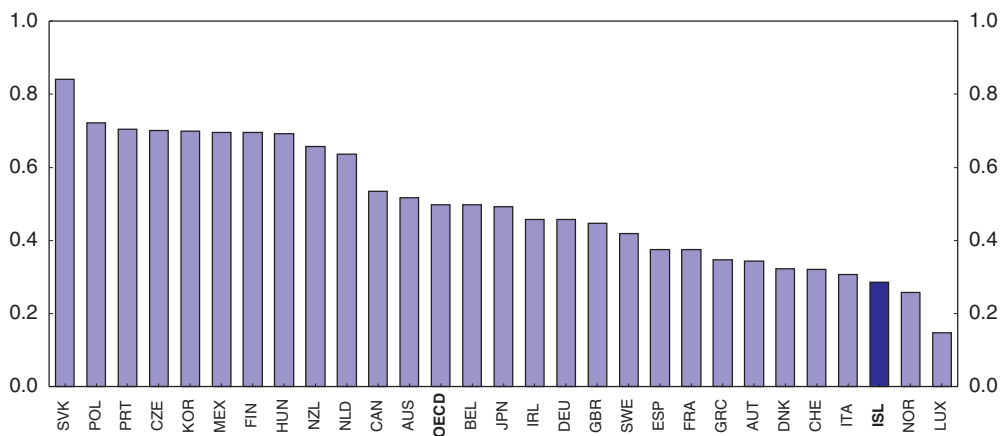
require teachers to work longer hours – net teaching time at the compulsory level in Iceland is among the lowest in the OECD – and increase pupil-teacher ratios and class sizes. Such a reorganisation would entail cost savings and might also have a positive effect on educational achievements by improving the average quality of teachers. Reorganisation to close very small schools in rural areas would also be beneficial. For upper-secondary education, the government should step up its efforts reduce the length of studies. As planned, shortening the duration of upper secondary education from four to three years, as in the other EEA countries and in accordance with the Bologna Agreement, would entail significant savings while allowing young people to commence their university studies one year earlier and extending their working career and lifetime income. There is also scope for consolidation in the higher education sector. Instead of trying to offer a full range of tertiary programmes, studies abroad should be encouraged, in particular at the graduate and doctoral stages of higher education. Public universities, which will likely face severe budget constraints, should be given the possibility of charging fees rather than cutting their programmes. The experience of countries that have combined an increase in education fees with an improvement in student loan facilities suggests that there are no significant adverse effects on participation (Blondal *et al.*, 2002).

As for health care, efficiency frontier analysis can help gauge the extent of the cost savings that structural reforms, as those highlighted above, could entail for the education sector. In this case, the outcome variable used in the analysis is a synthetic PISA score that combines the reading, mathematics and science scores through factor analysis. The input


variables are education spending per student and the PISA ESCS index, a proxy for contextual factors. As Iceland's PISA score is slightly below the OECD average while its spending per student is 40% above average, it should not be surprising that Iceland turns out to be far from the frontier. In other words, a number of OECD-member countries, including Finland and Sweden, are able to achieve higher educational outcomes at lower costs.

The results from the efficiency frontier analysis confirm that Iceland is one of the least efficient among OECD countries in education spending (Figure 2.16). More specifically, the DEA-based estimates indicate that Iceland could reduce education spending by 21% without sacrificing outcomes by adopting reforms to raise the input efficiency to the OECD average. Lifting input efficiency to the frontier or even to Finland's level would entail much greater savings. In any case, given the dire state of Iceland's public finances, domestic authorities should be setting the reasonable goal of raising the input efficiency of the education spending at least to the OECD average. This would entail fiscal savings of 1½ per cent of GDP per annum. A good starting point to this end would be to accelerate the implementation of the reform to upper-secondary education *curricula*. The Ministry of Education estimates that this should shorten the duration of studies by one year for 40% of the students, reducing education spending by 1 million króna per student who finishes earlier. Accordingly, the reform, when fully implemented, should yield savings of about 0.2% of GDP. In other words, this is a welcome first step but falls short of what the government's objectives should be.

Figure 2.16. **Input efficiency of the education system**



Source: Schweltnus (2009) using OECD, World Bank, *World Development Indicators database*; FAO, *Faostat database*.

StatLink  <http://dx.doi.org/10.1787/705644725133>

### **Increase the efficiency of spending by municipalities**

National spending objectives cannot be achieved without effective co-operation between the central government and the municipalities. First of all, expenditures by local governments account for about one-third of the overall level and the municipalities are responsible for the provision of politically-sensitive services, such as compulsory education, assistance for the elderly and housing for low-income families. In addition, municipalities have some limited taxation powers on income and real estate property,



which provide approximately 70% of their income. During the boom years, local revenues increased rapidly, and, municipalities exhibited even less restraint than the central government in spending these windfall resources (Table 2.4). Accordingly, they expanded public services and increased pay for their employees. Now, however, with only limited access to capital markets, they have little choice but to adjust spending to the considerably lower revenues.

Table 2.4. **Local government finances**  
Percentage of GDP

	1995-02	2003-06	2007 <sup>1</sup>	2008 <sup>1</sup>
Revenue	10.7	12.5	14.1	12.9
Expenditure	11.3	12.8	13.4	13.5
Financial balance	-0.6	-0.3	0.6	-0.6

1. Preliminary figures for 2007 and 2008.

Source: Ministry of Finance, May (2009).

These considerations indicate that it is important to improve the budgeting process at the local level and institutionalise the co-operation across levels of government. In 2007, the Ministry of Finance began negotiations with the municipalities to address these issues. In exchange for debt relief and increased transfers, the Ministry proposed the introduction of ceilings on real expenditure growth and the level of debt as well as a balanced budget requirement over the business cycle. Unfortunately, little progress has been made so far, but, as argued in the 2008 *OECD Survey*, the case for extending fiscal rules to municipalities is sound. Indeed, the current dire situation of public finances as well as the medium-term goal of euro-area entry only reinforces the arguments for sub-national fiscal rules.

An important obstacle to the 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. There are still 78 municipalities in Iceland, with large differences in size between them. Reykjavik counts for over one-third of the population, while over one-half of the municipalities have less than 1 000 inhabitants. It is therefore crucial to accelerate the amalgamation process, or at least combine the budgeting process of the smallest local authorities. Notwithstanding this concern, introducing sub-national 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, ceilings, as for the central government, should be set in nominal rather than real terms and for a specific multi-year period rather than over an undefined business cycle.

### **The crisis is an opportunity to reduce wasteful spending**

The need to reduce public expenditures should prompt policy makers to close down, or at least scale back those public programmes that do not adequately support the welfare of the general public. The agricultural support programme ranks high on that list: it represents an impediment to structural change and imposes a heavy burden on taxpayers and consumers. 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 in 2007 (Table 2.5). Prices received by farmers are about 2½ times higher than those in the world market. Consequently, farm receipts are about 3 times higher than they would be at world prices. The share of the most distorting payments (based on commodity output and non-constrained variable input use) is still nearly 80%. Although annual payments to milk producers have been gradually decreased in line with the 2005 agreement between the government and the farmers' association, further efforts are required to reduce agricultural support.

Table 2.5. **Agriculture: Producer support estimate**<sup>1</sup>  
As a per cent of gross farm receipts

	1986-88	2005	2006	2007
Australia	7	4	6	6
Canada	36	22	23	18
European Union	40	32	31	26
<b>Iceland</b>	<b>76</b>	<b>70</b>	<b>68</b>	<b>61</b>
Japan	64	54	51	45
Korea	70	62	63	60
Mexico	28	13	15	14
New Zealand	10	1	1	1
Norway	70	67	65	53
Switzerland	77	68	62	50
Turkey	16	25	20	21
United States	22	15	11	10
OECD	37	28	26	23

1. The monetary value of transfers from consumers and budgetary payments to producers.

Source: OECD, *Agricultural Policies in OECD Countries: Monitoring and Evaluation*, 2008.

More generally, the government needs to take responsibility for cutting expenditures and raising taxes, even if that may entail difficult political decisions. And there is little doubt that achieving the fiscal consolidation objectives agreed with the IMF will be very difficult. To this end, Table 2.6 presents some rough estimates of some the consolidation measures that have been proposed in this chapter. It should be noted that these measures fall short from the government's objectives. Therefore, it is even more important that the government soon announces a comprehensive and detailed fiscal consolidation plan for the next few years. The plan should be agreed by all members of government and by the Parliamentary majority that supports the government. As discussed above, the plan should also set multi-year frames in nominal terms for each ministry. Finally, following the lead of Ireland, the government should consider setting up a committee of outside experts to review the plan. The committee should examine if the plan is credible, what needs to be done to implement it successfully and how, if necessary, it should be improved.

Table 2.6. **Estimated savings for selected fiscal consolidation measures**

	2009 ISK (billions)	% of 2009 GDP
<b>Revenue-boosting measures:</b>		
Increase personal income tax rate by 5%	30	2
Increase corporate tax rate by 10%	10	¾
Increase reduced VAT rate from 7% to 14%	4	¼
Introduce a carbon tax <sup>1</sup>	10	¾
<b>Cost-cutting measures:</b>		
Reduce public-sector wage bill by 5%	10	½
Reduce public investment to 1% of GDP	15	1
Introduce cost-cutting reforms in health care to raise spending efficiency to the level of the first quartile OECD-member country	20-25	1½
Introduce cost-cutting reforms in education to raise spending efficiency to the level of the OECD average	20-25	1½
Eliminate agricultural subsidies	10	¾
<i>Memo: Average annual fiscal savings goals until 2013</i>	60	4

1. Applying a price of € 100 per metric ton of CO<sub>2</sub>. (In Sweden, the carbon tax rate has gradually increased from € 27 in 1999 to € 108 in 2009.)

Source: Secretariat's calculations. For the revenue-increasing measures, the Ministry of Finance provided assistance.

## Concluding remarks

Iceland is facing extremely difficult times after having been hit by converging adverse developments, some in reaction to excesses during the past economic boom, others more exogenous. In the past, the Icelandic economy has proven resilient in times when economic circumstances have suddenly changed. While the economy's flexibility is now being tested, an adequate policy response would help to revamp growth, enabling companies to expand investment and create new jobs. To this end, the domestic authorities should aim at quickly restoring the economy to balance and laying out the foundations for a sustainable recovery. This includes stabilising the exchange rate and inflation, and also implementing a decisive fiscal consolidation programme. Box 2.5 offers more detailed policy recommendations along these lines.

### Box 2.5. Policy recommendations for monetary and fiscal policies

*Monetary policy:* Inflation had been high and volatile even before the recent spike resulting from the collapse of the banks late last year. Facing difficult challenges, including the management of the financial crisis and laying the foundations for a sustainable recovery, the monetary authority should consider the following:

- Keep capital controls in place until they can be safely removed. Until then, monetary policy should continue to be mainly focused on exchange rate stability, which may limit the scope for further reductions in the interest rate.
- Take measures to restore the credibility of the Central Bank. Best-practice policies should be adopted in terms of communication, independence, governance and monetary control. Even more importantly, the conduct of monetary policy should be decisive and members of government should respect the independence of the Central Bank.
- If the EU application process is successfully completed, seek to become a member of the euro area as soon as feasible, and thus reap the economic benefits of the ECB credibility and EMU membership.

**Box 2.5. Policy recommendations for monetary and fiscal policies (cont.)**

- Once capital controls have been lifted, a suitably modified inflation-targeting framework can act as an effective nominal anchor for monetary policy towards euro-area membership. To this end, shift to targeting the harmonised CPI (HICP), which will be the measure for the inflation criterion for euro-area entry.

*Fiscal policy:* The collapse of the banking sector and economic activity has put public finances in a dire situation. An aggressive fiscal consolidation programme should be quickly implemented to keep the public deficit in conformity with the IMF's Stand-By Arrangement and to pave the road for euro-area membership. This will involve significant tax increases and spending cuts, with the latter playing an increasing role over time.

- Many of the tax cuts implemented over the boom years should be withdrawn, as planned.
- The tax system should be reformed over time in order to increase revenues in a growth friendly way by widening tax bases, imposing corrective taxes and closing loopholes. For instance, the number of goods and services exempt from the VAT should be reduced and a carbon tax should be introduced. There is also scope to better target tax allowances, in particular the interest rate deductions as well as the maternity and child benefit, to lower-income households.
- In the near term, halt all non-essential public infrastructure projects and impose a freeze, or even a cut, on nominal wages in the public sector.
- Adopt a new fiscal framework emphasising spending control and medium-term sustainability, by requiring public agencies to make up for any over expenditure in the following years and giving public-sector managers greater autonomy and accountability in deciding how to achieve their objectives.
- Implement past OECD recommendations in the areas of education and health care to improve the efficiency of such spending. In particular, increase the student-to-teacher ratio, bring the length of studies in line with international standards, and allow higher-education institutions to impose students' fees. Savings can also be made by promoting generic drugs and by increasing cost sharing, especially in hospitals.
- A time of crisis provides the opportunity for introducing politically difficult reforms. Above all, there is scope to cut a number of inefficient programmes, starting with the agricultural subsidies. Similarly, the consolidation process among municipalities could be accelerated.

**Bibliography**

- Alesina, A., R. Barro and S. Tenreyro (2002), "Optimal Currency Area", *NBER Working Papers*, No. 9072.
- Afonso, A., L. Schuknecht and V. Tanzi (2005), "Public Sector Efficiency: An International Comparison", *Public Choice*, Vol. 123.
- Aoki, K. (2001), "Optimal Monetary Policy Response to Relative Price Changes", *Journal of Monetary Economics*, No. 48, pp. 55-80.
- Bassanini, A. and E. Ernst (2002), "Labour Market Institutions, Product Market Regulation, and Innovation : Cross Country Evidence", *OECD Economics Department Working Papers*, No. 316.
- Bayoumi, T. and B. Eichengreen (1992), "Shocking Aspects of European Monetary Unification", *NBER Working Papers*, No. 3949.
- Bayoumi, T. and B. Eichengreen (1999), "Operationalising the theory of optimum currency areas", in Cohen, D., A. Sapir and A. Venables (eds.), *Market integration, regionalism and the global economy*, Chapter 7, CEPR.

- Bertola G. (1993), "Models of Economic Integration and Localized Growth", in Torres, F. and F. Giavazzi (eds.), *Adjustment and Growth in the European Monetary Union*, Cambridge University Press.
- Blanchard, O. and J. Tirole (2003). "Redesigning the Employment Protection System", *Economist*, Vol. 152, pp. 1-20.
- Blanchard, O. and J. Tirole (2008), "The joint design of unemployment insurance and unemployment protection: a first pass", *Journal of the European Economic Association*, Vol. 6, No. 1, pp. 45-77.
- Blondal, S., S. Field and N. Girourard (2002), "Investment in Human Capital through Upper Secondary and Tertiary Education", *OECD Economic Studies*, No. 34.
- Bravo-Ortega, C. and J. di Giovanni (2006), "Remoteness and Real Exchange Rate Volatility", *IMF Staff Papers*, Vol. 53, pp. 115-132.
- Breedon, F. and T. Pétursson (2005). "Out in the cold? Iceland's trade performance outside the European Union and European Monetary Union", *Cambridge Journal of Economics*, pp. 1-14, doi:10.1093/cje/bei105.
- Brook, A. (2005), "The Challenges of EMU Accession Faced by Catching-up Countries: A Slovak Republic Case Study", *OECD Economics Department Working Papers*, No. 444, OECD Publishing. doi:10.1787/076028301141.
- Brixiova, Z., M. Morgan and A. Woergoetter (2009), "Business cycle synchronization and the currency board in Estonia", *OECD Economics Department Working Papers*, forthcoming.
- Buiter, W. (2000), "Is Iceland an optimal currency area?", in Gudmundsson, M., T. Herbertsson and G. Zoega (eds.), *Macroeconomic policy; Iceland in an era of global integration*, University of Iceland Press, pp. 33-55.
- Central Bank of Iceland (2001), *Declaration on inflation target and a change in the exchange rate policy*, available at [www.sedlabanki.is/?PageID=522](http://www.sedlabanki.is/?PageID=522).
- Central Bank of Iceland (2009), *Monetary Bulletin*, 2009, Vol. 2, pp. 5-62.
- Christensen, A., J. Dupont and P. Schreyer (2005), "Inflation Measures: Too High – Too Low – Internationally Comparable?", seminar presentation, Statistics Directorate, OECD.
- Clarida, R. and D. Waldman (2008), "Is Bad News about Inflation Good News for the Exchange Rate?", in Campbell, J. (ed.), *Asset Prices and Monetary Policy*, University of Chicago Press.
- Devereux, M. and P. Lane (2003), "Understanding bilateral exchange rate volatility", *Journal of International Economics*, Vol. 60, No. 1, pp. 109-132.
- Eliásson, L. and T. Pétursson (2009), "The residential housing market in Iceland: Analysing the effects of mortgage market restructuring", *Housing Studies*, Vol. 24, pp. 25-45.
- European Commission (2004), *Convergence Report 2004: Technical Annex, A Commission Services Working Paper*.
- European Commission (2009), *Green Paper: Reform of the Common Fisheries Policy*, COM(2009)163 final, April.
- Flamm, H., A. Fátas, S. Holden, T. Jappelli, I. Mihov, M. Pagano, C. Wyplosz (2008), "EMU at Ten – Should Denmark, Sweden and the UK join?", *SNS Economic Policy Group Report*, SNS Forlag.
- Fontagné L., and M. Freudenberg (1999), "Endogenous Symmetry of Shocks in a Monetary Union", *Open Economies Review*, Vol. 10, No. 3, pp. 263-287.
- Frankel, J. and A. Rose (1997), "The Endogeneity of the Optimum Currency Area Criteria", *CEPR Discussion Paper Series*, No. 1473.
- Frankel, J. and A. Rose (2000), "An Estimate of the Effects of Currency Unions on Trade and Growth", mimeo, first draft May 1, revised June 6, 2000, available at: <http://ksghome.harvard.edu/~jfrankel/>.
- Fry, M., D. Julius, L. Mahadeva, S. Roger and G. Sterne (2000), "Key issues in the choice of monetary policy framework", in Mahadeva, L. and G. Sterne (eds.), *Monetary Policy Frameworks in a Global Context*, Routledge, Centre for Central Bank Studies, Bank of England.
- Giavazzi, F. and M. Pagano (1988), "The Advantage of Tying One's Hands, EMS Discipline and Central Bank Credibility", *European Economic Review*, Vol. 32, pp. 1055-1082.
- Gust, C. and J. Marquez (2002), "International Comparisons of Productivity Growth: The Role of Information Technology and Regulatory Practices", *Labour Economics*, Vol. 11, pp. 33-58.

- Krugman, P. (1993), "Lessons of Massachusetts for EMU", in Torres, F. and F. Giavazzi (eds.), *Adjustment and Growth in the European Monetary Union*, Cambridge University Press.
- Huefner, F. and I. Koske (2008), "The Euro Changeover in the Slovak Republic: Implications for Inflation and Interest Rates", *OECD Economics Department Working Papers*, No. 632.
- IMF (2007), *Iceland: 2007 Article IV Consultation – Staff Report; and Public Information Notice on the Executive Board Discussion*, IMF Country Report, No. 07/295, August.
- Joumard, I., C. André, C. Nicq and O. Chatal (2008), "Health status determinants: lifestyle, environment, health care resources and efficiency", *OECD Economics Working Papers*, No. 627, OECD Publishing.
- McCallum, J. (1995), "National Borders Matter: Canada – US Regional Trade Patterns", *American Economic Review*, Vol. 85, No. 3, pp. 615-623.
- Méltiz, J. (2001), "Geography, Trade and Currency Union", *CPER Discussion Paper Series*, No. 2987.
- Ministry of Finance (2009), *The Icelandic Economy*, Spring.
- Mishkin, F. (2008), "Exchange Rate Pass-through and monetary policy", *NBER Working Papers*, No. 13889.
- Mongelli, F. (2002), "'New' views on the optimum currency area theory: what EMU is telling us?", *ECB Working Paper Series*, No. 138.
- Nickell, S. and R. Layard (1998), "Labour Market Institutions and Economic Performance", in Ashenfelter, O. and D. Card (eds.), *Handbook of Labor Economics*, Vol. 3, Chapter 46, pp. 3029-3084.
- OECD (1997), *Towards Sustainable Fisheries: Economic Aspects of the Management of Living Marine Resources*, OECD Publishing.
- OECD (2004), *OECD Employment Outlook*, OECD Publishing.
- OECD (2006), *OECD Economic Surveys, Iceland*, OECD Publishing.
- OECD (2008), *OECD Economic Surveys, Iceland*, OECD Publishing.
- OECD (2009a), *OECD Economic Surveys, Estonia*, OECD Publishing.
- OECD (2009b), *OECD Economic Surveys, Mexico*, OECD Publishing, forthcoming.
- Oygarð, S. (2009), *Address to the 48th Annual Meeting of the Central Bank of Iceland*, Central Bank of Iceland, available at [www.sedlabanki.is/lisalib/getfile.aspx?itemid=6940](http://www.sedlabanki.is/lisalib/getfile.aspx?itemid=6940).
- Persson, T. (2001), "Currency Unions and Trade: How Large is the Treatment Effect?", *Economic Policy*, Vol. 16, No. 33, pp. 433-462.
- Pétursson, T. (2000), "New focuses in central banking: Increased independence, transparency and accountability", *Monetary Bulletin*, 2000, Vol. 4, pp. 45-57.
- Pétursson, T. (2008), "How hard can it be? Inflation control around the world", *Central Bank of Iceland Working Papers*, No. 40.
- Rose, A. (2000), "One Money, One Market: Estimating the Effect of Common Currencies on Trade", *Economic Policy*, Vol. 30, pp. 9-45.
- Rose, A. and E. van Wincoop (2001), "National Money as a Barrier to Trade: the Real Case for Currency Union", *American Economic Review (Papers and Proceedings)*, Vol. 91, No. 2, pp. 386-390.
- Schwellnus, C. (2009), "Achieving higher performance: Enhancing spending efficiency in health and education in Mexico", *OECD Economics Department Working Papers*, forthcoming.
- Schmidt-Hebbel, K. (2006) "New Zealand's monetary and exchange-rate policy in international comparison", in Buckle, B. and A. Drew (eds.), *Testing stabilisation policy limits in a small open economy: proceedings from a macroeconomic policy forum*, Reserve Bank of New Zealand and the New Zealand Treasury.
- Simar, L. and P. Wilson (1998), "Sensitivity analysis of efficiency scores: How to bootstrap in nonparametric frontier models", *Management Science*, Vol. 44, pp. 49-61.
- Simar, L. and P. Wilson (2000), "Statistical inference in nonparametric frontier models: The state of the art", *Journal of Productivity Analysis*, Vol. 13, pp. 49-78.
- Suppanz, H. (2006), "Adapting the Icelandic Education System to a Changing Environment", *OECD Economics Department Working Papers*, No. 516, OECD Publishing. doi:10.1787/418774783534.
- Suppanz, H. (2008), "Improving Cost-Effectiveness in the Health Care Sector in Iceland", *OECD Economics Department Working Papers*, No. 645, OECD Publishing. doi:10.1787/235327525311.

- Sutherland, D., I. Joumard and C. Nicq (2007), "Performance indicators for public spending efficiency in primary and secondary education", *OECD Economics Department Working Paper*, No. 546, OECD Publishing.
- Yellen, J. (2009), "A Minsky Meltdown: Lessons for Central Bankers", Presentation to the 18th Annual Hyman P. Minsky Conference on the State of the US and World Economies "Meeting the Challenges of the Financial Crisis", organized by the Levy Economics Institute of Bard College, New York City, April.
- Woodford, M. (2003), *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press.

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16  
PRINTED IN FRANCE  
(10 2009 16 1 P) ISBN 978-92-64-05451-6 – No. 56887 2009



## OECD Economic Surveys

# ICELAND

### SPECIAL FEATURE: FINANCIAL CRISIS

#### Most recent editions

Australia, October 2008  
Austria, July 2009  
Belgium, July 2009  
Canada, June 2008  
Czech Republic, April 2008  
Denmark, February 2008  
Euro area, January 2009  
European Union, September 2007  
Finland, June 2008  
France, April 2009  
Germany, April 2008  
Greece, July 2009  
Hungary, May 2007  
**Iceland, September 2009**  
Ireland, April 2008  
Italy, June 2007  
Japan, April 2008  
Korea, December 2008  
Luxembourg, June 2008  
Mexico, July 2009  
Netherlands, January 2008  
New Zealand, April 2009  
Norway, August 2008  
Poland, June 2008  
Portugal, June 2008  
Slovak Republic, February 2009  
Spain, November 2008  
Sweden, December 2008  
Switzerland, November 2007  
Turkey, July 2008  
United Kingdom, June 2009  
United States, December 2008

#### Non-member Countries: Most recent editions

Baltic States, February 2000  
Brazil, July 2009  
Bulgaria, April 1999  
Chile, November 2007  
China, September 2005  
Estonia, April 2009  
India, October 2007  
Indonesia, July 2008  
Romania, October 2002  
Russian Federation, July 2009  
Slovenia, July 2009  
South Africa, July 2008  
Ukraine, September 2007  
Federal Republic of Yugoslavia, January 2003

Subscribers to this printed periodical are entitled to free online access. If you do not yet have online access via your institution's network contact your librarian or, if you subscribe personally, send an e-mail to [SourceOECD@oecd.org](mailto:SourceOECD@oecd.org)

**Volume 2009/16**  
**September 2009**

ISSN 0376-6438  
2009 SUBSCRIPTION  
(18 ISSUES)

**OECD** publishing  
[www.oecd.org/publishing](http://www.oecd.org/publishing)

ISBN 978-92-64-05451-6  
10 2009 16 1 P

