OECD Economic Surveys
ICELAND

JUNE 2011

OECD

OECD Economic Surveys: Iceland 2011

Please cite this publication as:
OECD (2011), *OECD Economic Surveys: Iceland 2011*, OECD Publishing.
http://dx.doi.org/10.1787/eco_surveys-isl-2011-en

ISBN 978-92-64-09320-1 (print)
ISBN 978-92-64-09321-8 (PDF)

Series: OECD Economic Surveys
ISSN 0376-6438 (print)
ISSN 1609-7513 (online)

OECD Economic Surveys: Iceland
ISSN 1995-3240 (print)
ISSN 1999-0308 (online)

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

The economic situation and policies of Iceland were reviewed by the Committee on 28 April 2011. 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 24 May 2011.

The Secretariat's draft report was prepared for the Committee by David Carey, Alan Detmeister, Gunnar Haraldsson and Sebastian Schich with statistical assistance from Roselyne Jamin, under the supervision of Patrick Lenain.

The previous Survey of Iceland was issued in September 2009.

BASIC STATISTICS OF ICELAND 2010

THE LAND

Area (1 000 sq. km)	103
Productive area (1 000 sq. km)	24
of which:	
Cultivated area	2
Rough grazings	22
Unproductive area (1 000 sq. km)	79

Major cities population, 1 January 2011	
Reykjavík	118 898
Kópavogur	30 779
Hafnarfjörður	26 099

THE PEOPLE

Population, 1 January 2011	318 452
Net increase 2000-10	
annual average, %	1.2
of which:	
Net immigration	0.3

Occupational distribution (per cent)	
Agriculture	2.6
Fishing and fish processing	5.1
Other manufacturing	9.2
Construction, total	6.3
Trade	13.2
Transport and communication	6.4
Other services	56.8

GOVERNMENT AND PARLIAMENT

Public sector indicators (% of GDP)	
Public consumption	25.9
General government total revenue	42.3
Gross debt	120.2
Net debt	43.1

Present composition of Parliament 2009	
The Alliance Party	20
Independence Party	16
The Left-Green Movement	14
Progressive Party	9

Last general election 25 April 2009
Next general election 2013

PRODUCTION AND CAPITAL FORMATION

Gross domestic product	
ISK million	1 539 511
Per head, USD	39 650
Per head, USD PPP	36 146

Gross fixed capital formation	
ISK million	198 840
% of GDP	12.9

FOREIGN TRADE

Exports of goods and services, % of GDP	56.5
Main exports (% of merchandise exports)	
Fish products	39.3
Aluminium	39.6
Other manufacturing products	15.8
Agricultural products	1.6
Miscellaneous	3.7

Imports of goods and services, % of GDP	45.9
Imports, by use (% of merchandise imports)	
Consumer goods	24.5
Capital goods and transport equipment	29.4
Industrial supplies	33.0
Fuels and lubricants	13.1

THE CURRENCY

Monetary unit: króna

Currency units per USD, average of daily figures:	
Year 2010	122.2
April 2011	113.0

Executive summary

Iceland is resolving the economic problems left by the financial crisis. It is well advanced in implementing the comprehensive programme agreed with the IMF. The economy stopped contracting by late 2010 and a consumption and business investment-led recovery is projected to gather momentum, lifting economic growth to 3 per cent by 2012. Inflation is projected to remain low and the underlying current account surplus to be sustained.

Much has been done to restore the financial sector to health. The banking system was recapitalised by the end of 2009 and steps have recently been taken to accelerate private-sector debt restructuring. Reforms have been made to regulation and supervision to address shortcomings exposed by the financial crisis. The Central Bank of Iceland (CBI) and the Financial Supervisory Authority (FME) have signed a co-operation agreement to strengthen macro-prudential supervision, although policy implementation could be more effective if the FME were merged into the CBI, thereby expanding the CBI's responsibilities to include prudential regulation and supervision. A strategy to relax capital controls was recently adopted, with a period of liberalization likely to span several years.

The monetary policy framework needs to be strengthened. Monetary policy alone has not been very effective either in countering the credit cycle or in delivering price stability. To improve performance, the CBI should adopt an inflation targeting regime that places greater weight on smoothing fluctuations in the exchange rate and is supported by fiscal policy and macro-prudential regulation. In the event that Iceland joins the EU, it should seek to adopt the euro as quickly as possible.

The government has begun to put the public finances on a sustainable path. The budget deficit is set to fall below 3% of GDP in 2011, and a small surplus is projected by 2013. The fiscal framework has been strengthened but the government should go further by adopting a medium-term budget balance fiscal rule consistent with a debt target.

Steps are being taken to promote the return to work of workers who lost their jobs. The government has substantially boosted expenditure on public employment services to offer appropriate job matching and training services. Additional funds will be made available to give access to the education system to all persons seeking to complete their secondary education. Vocational programmes are to be developed, training classes made more relevant and the highly successful long-term internship programme will be expanded. As unemployment declines, the temporary extension of unemployment benefit duration should be allowed to end, so as not to weaken incentives for the unemployed to move into employment.

Challenges to the fisheries management system need to be addressed in a way that preserves a sustainable and efficient fishery. Iceland has been successful in managing its large fishing industry thanks to its systems of Total Allowable Catches (TACs) based on scientific recommendations and the Individual Quota System (IQS), which gives quota holders a strong incentive to ensure that the resource is managed well. This system could be threatened by potential policy responses to the perceived unfairness of quotas initially having been given away and Iceland's possible accession to the EU. It should be kept in mind that when the quotas were initially allocated the right to fish was limited, as this was a move from an open access system. However, there is nothing the government can do now to undo the perceived unfairness of the initial allocation as most current quota holders purchased their quotas. Nevertheless, to strengthen political consensus on the quota system, the government should increase the special resource tax on fishing to a level that neither causes financial difficulties in the industry nor destroys the quota system. The government should also progressively reduce TACs from the level compatible with biological sustainability to the level that maximises resource rents where needed and tax away all of this increase in rent. To maintain the value of the fisheries resource within the EU, the Iceland authorities plan to negotiate to maintain the power to set TACs on a scientific basis and to preserve the ITQ system.

Assessment and recommendations

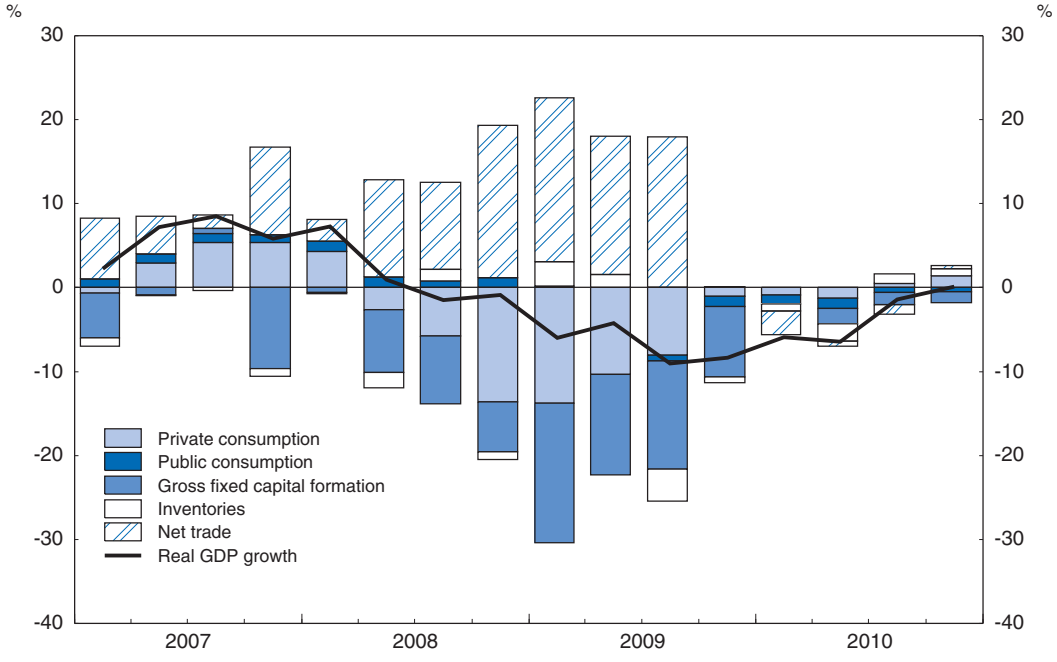
Iceland is resolving the economic problems left by the financial crisis

Iceland is slowly emerging from a deep recession following the collapse of its main banks. In November 2008, it agreed a comprehensive programme (Stand-By Arrangement, SBA) with the IMF to overcome the economic problems left in the wake of the financial crisis. The strategy underlying the programme consists of putting Iceland on a path to restoring the financial sector to health, returning public finances to sustainability, preventing capital flight by capital controls, and rebuilding monetary policy credibility by stabilising inflation at low levels. So far Iceland has fulfilled the main conditions in each of its IMF SBA reviews, and the SBA is scheduled to conclude in August 2011.

Yet Iceland still has a long way to go to recover fully from the effects of the financial crisis. Output has finally stabilised following the severe recession (Figure 1), but real GDP (centred 4-quarter moving average) lingers 11% below its peak in the first quarter of 2008, which was

Figure 1. **Output has stabilised**

Contributions from same quarter of previous year[1]



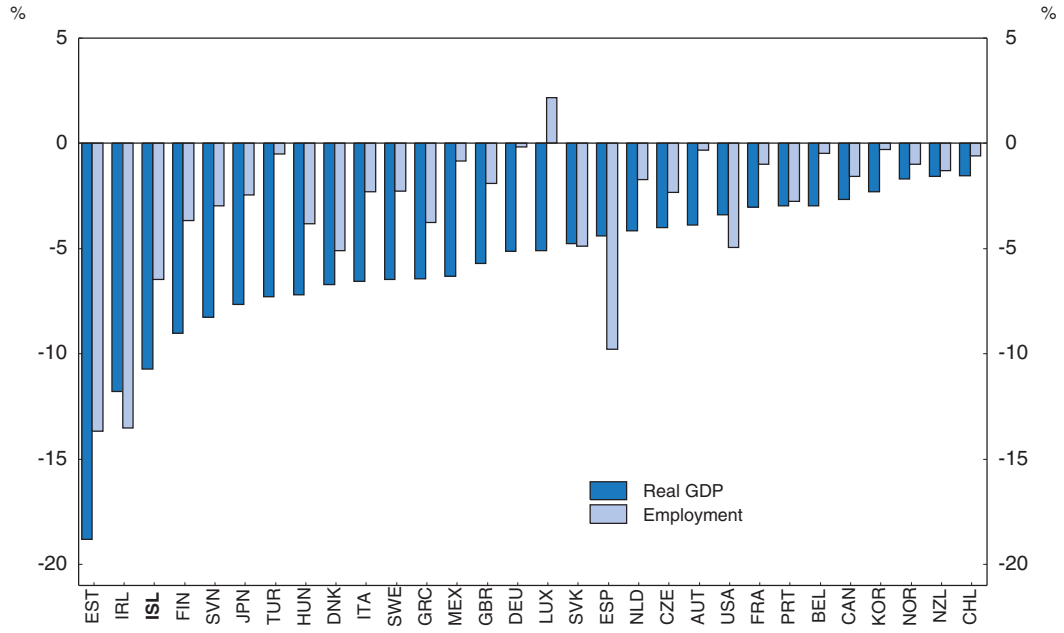
1. Contribution to real GDP growth. The sum of the contributions does not add up to the GDP growth rate because the data are chain-linked.

Source: Statistics Iceland.

StatLink http://dx.doi.org/10.1787/888932445410

Figure 2. **Output and employment fell more in Iceland than in most other countries**

Percentage decline from peak to trough[1]



1. Based on centred 4-quarter moving average data. The trough in output and employment had not yet been reached by the third quarter of 2010 in Greece and Ireland. The trough in employment had also not yet been reached in the Czech Republic, Denmark, Greece, Iceland, Italy, Portugal, Spain and Slovenia.

Source: OECD, *OECD Economic Outlook Database*.

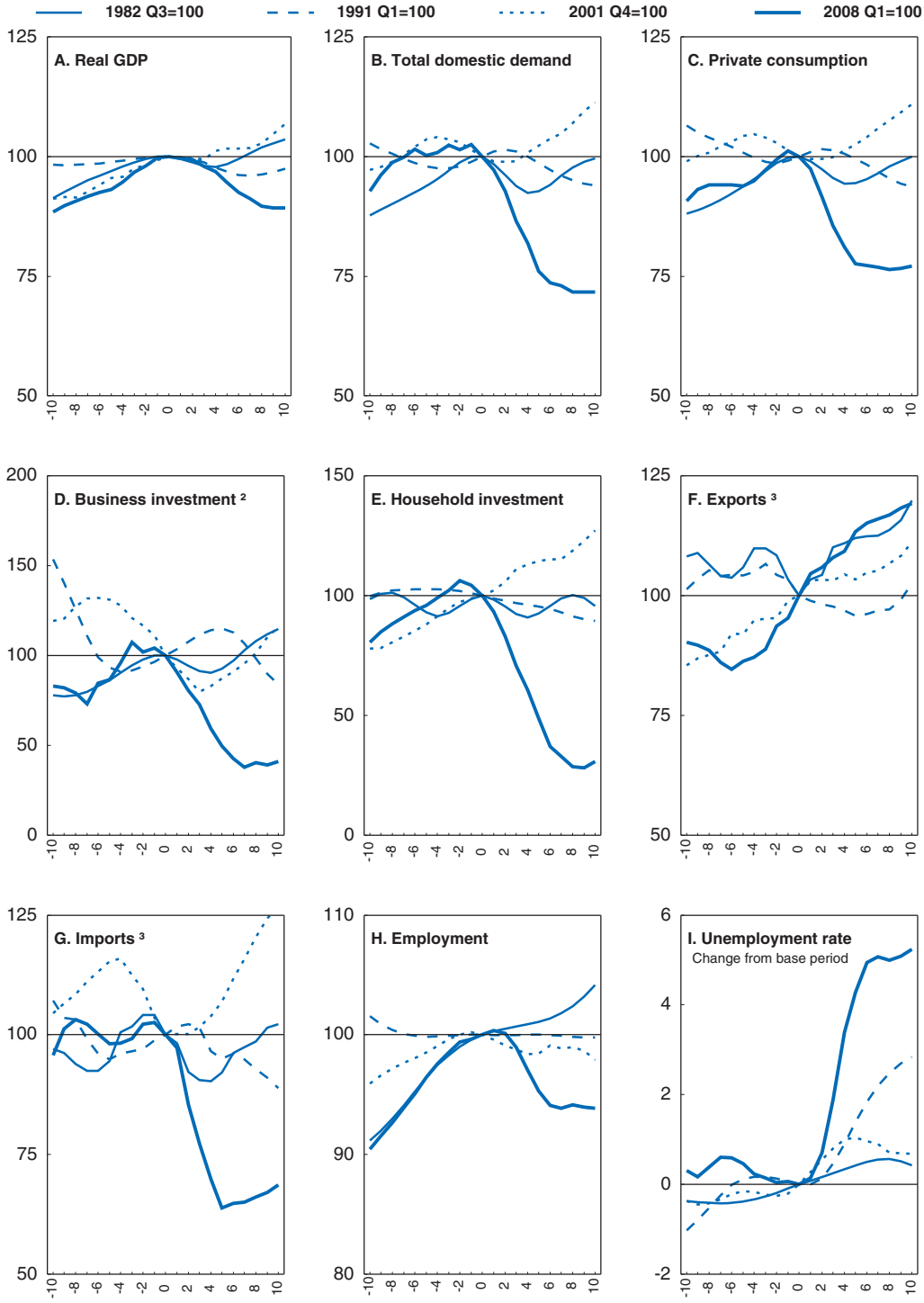
StatLink http://dx.doi.org/10.1787/888932445429

well above sustainable levels. This decline was one of the largest in the OECD (Figure 2) and the largest in Iceland in recent decades (Figure 3). Domestic demand has levelled off, but a consumption and business investment-led recovery is projected to gather momentum over the next two years, lifting economic growth to 3% by 2012 (Table 1). The main uncertainty to the outlook concerns the timing of large investment projects, which has increased following the recent vote against the Icesave agreement on 9 April 2011 (Box 1).

The increase in unemployment has been large, but the unemployment rate has stabilised at around 8%, which is a very high rate by Icelandic standards, and could fall to around 7% by the end of 2012. Long-term unemployment has increased markedly and is concentrated among the low skilled. The fact that there has been labour hoarding will likely weigh on employment growth for some time.

The large current account deficits that Iceland had been running during the boom years were eliminated in the wake of the financial crisis and, once adjusted to exclude accrued interest payments by banks undergoing winding-up proceedings, has been in surplus since 2009 (Table 1). This turnaround is mainly attributable to the sharp contraction in imports caused by the collapse in domestic demand and the large real exchange rate depreciation (Figures 3 and 4). Export growth has also contributed to the turnaround, although the increase has not been exceptional by historical comparison (a similar increase occurred after the peak of the business cycle in the early 1980s) (Figure 3). Growth in exports of goods and services other than aluminium and marine products, which are subject to capacity constraints, and aircraft (which distort growth patterns as such exports are large and irregular) have performed particularly well, having been boosted by the large real exchange

Figure 3. **The boom and bust in the current business cycle were large by historical comparison**[1]



1. Based on centred 4-quarter moving average data. The horizontal axis shows quarters before and after the peak of a business cycle, which has an index value of 100 (zero for the unemployment rate).
2. Excluding investment in aircraft and aluminium sectors.
3. Excluding aircraft.

Source: Central Bank of Iceland, *Quarterly Macroeconomic Model of the Icelandic Economy*; OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932445448

Box 1. **Implications of the vote against the Icesave agreement**

In a referendum held on 9 April 2011, Icelanders voted against an agreement to reimburse the UK and Netherlands governments for the compensation payments (plus interest at 3.0-3.3% per annum) that they had made to local depositors in Icesave branches of the failed Icelandic bank, Landsbanki. This agreement would have increased Iceland's net general government debt by less than 2% of GDP. The estimated impact was modest owing to a high expected recovery rate from the assets of the Landsbanki estate (they are expected to cover about 99% of priority claims).

The Icelandic government's liability under the EU directive on deposit-guarantee schemes will now most likely be determined through the court of the European Free Trade Association (EFTA). This legal process is likely to take 12-18 months.

The rejection of the Icesave agreement has not significantly affected the IMF Stand-By Arrangement. The only likely effect is to delay the fifth review while the IMF assesses the macroeconomic impact of the vote. The Nordic governments are also expected to continue to provide the funding committed under the IMF programme (EUR 888 million out of a total of EUR 1 775 million is still available to be drawn down).

The vote has also had little immediate impact on the Iceland government's foreign currency credit ratings, which are at lowest investment grade or highest junk grade. The ratings agencies did, however, highlight that the vote had increased uncertainty about Iceland's economic recovery and the timing of a return to stronger credit ratings.

Rejection of the Icesave agreement is likely to postpone the return of the Iceland government to international capital markets. According to the Central Bank of Iceland, failure of the government to demonstrate that it can borrow in international capital markets on reasonable terms would delay the removal of capital controls and retard the restoration of a market-determined exchange rate. These factors may well hinder foreign direct investment into Iceland, which is important for its economic recovery. The inability of domestic electricity companies (which are mostly publicly-owned and guaranteed) to borrow in international capital markets on reasonable terms could constrain investments in electricity production needed to expand aluminium production. This lack of funds could be overcome by removing ownership restrictions on electricity resources and privatising electricity companies, but such policies are not popular in Iceland.

rate depreciation (Figure 4). The underlying current account balance is projected to remain in surplus over the next two years.

The government has made good progress in cutting the large budget deficit left by the financial crisis, but much consolidation is still required to put public finances on a sustainable path. The general government budget deficit (excluding one-off transactions) fell by 3½ per cent of GDP to 6½ per cent in 2010 (7.8% of GDP including the cost of called loan guarantees) and a similar decline is projected in 2011. The government plans to achieve a primary budget surplus of at least 3% of GDP in 2013 and to increase it gradually in the following years.

The Central Bank of Iceland (CBI) has succeeded in cutting inflation from a peak of 18.6% in the year to January 2009, most of which was attributable to pass-through from the large exchange rate depreciation caused by the financial crisis, to 2.8% in the year to April 2011, which is close to its inflation target (2½ per cent), and inflation is projected to remain broadly stable through 2012. The main factor explaining the decline in inflation from the

Table 1. **Demand, output and prices**

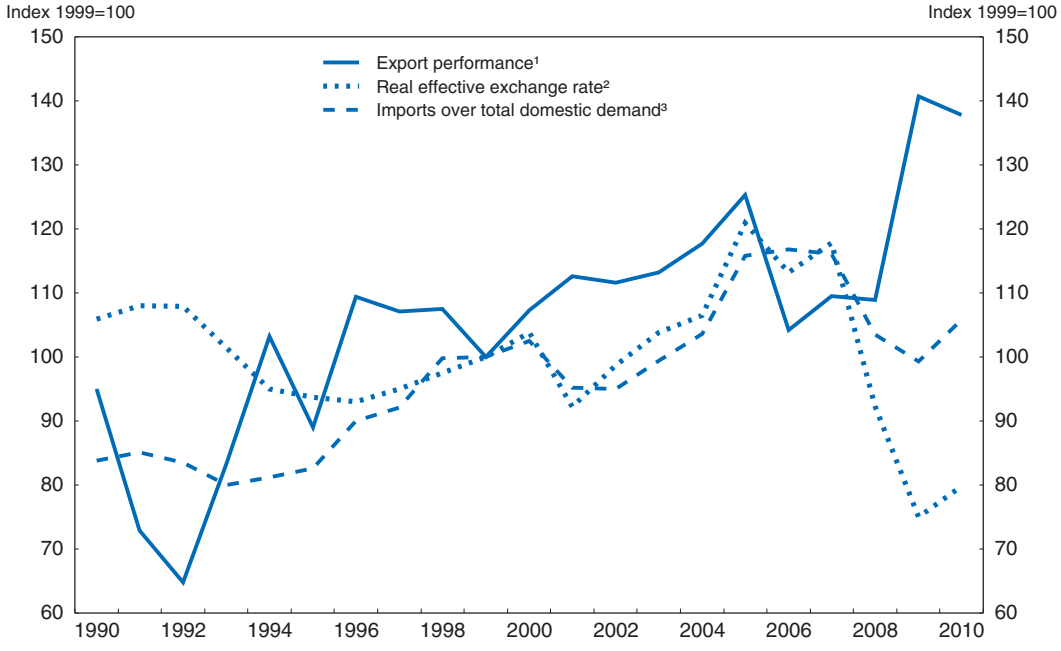
	2007	2008	2009	2010	2011	2012
	Percentage changes, volume (2000 prices)					
GDP	6.0	1.4	–6.9	–3.5	2.2	2.9
Private consumption	5.7	–7.9	–15.6	–0.2	2.9	2.7
Government consumption	4.1	4.6	–1.7	–3.2	–4.0	–1.8
Gross fixed capital formation	19.1	–19.7	–50.9	–8.1	14.7	12.4
Final domestic demand	0.4	–8.2	–20.7	–2.3	2.6	3.0
Stockbuilding[1]	–0.6	–0.4	–0.0	–0.2	–0.1	0.0
Total domestic demand	–0.1	–8.5	–20.7	–2.5	2.7	3.0
Exports of goods and services	17.8	7.0	7.0	1.1	2.7	3.3
Imports of goods and services	–0.7	–18.4	–24.0	3.9	3.8	3.5
Net exports[1]	6.1	10.8	14.4	–1.2	–0.2	0.2
Memorandum items						
Consumer price index	5.1	12.7	12.0	5.4	2.7	2.6
Unemployment rate	2.3	3.0	7.2	7.5	7.0	5.8
General government financial balance[2]	5.4	–13.5	–10.0	–7.8	–2.7	–1.4
General government gross financial liabilities[2, 3]	53.3	102.0	120.0	120.2	121.0	120.2
Underlying current account balance[2, 4]	–16.3	–17.7	2.5	1.5	2.2	3.8

Note: 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*).

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.
3. Includes civil service pension liabilities of around 20% of GDP. These liabilities are excluded from the Maastricht definition of general government gross financial liabilities.
4. Current account balance excluding CBI data/projections of accrued net income payments by credit institutions in winding-up proceedings (which in fact will never be paid).

Source: Statistics Iceland and Central Bank of Iceland for data, *OECD Economic Outlook 89* for projections (2011-12).

Figure 4. **Real exchange rate depreciation has boosted exports and reduced imports**



1. Real exports relative to total real imports in destination countries for Icelandic exports. Excluding aircraft, aluminium and marine products.
2. Based on consumer price index.
3. Volumes.

Source: Central Bank of Iceland, *Quarterly Macroeconomic Model of the Icelandic Economy*; OECD, *OECD Economic Outlook Database*.

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peak is exchange rate stability. This has been achieved through a combination of capital controls and, at least initially, the maintenance of policy rates at high levels. Those policy rates have now been cut to around 4%.

The authorities have released a strategy for the removal of capital controls, which reflects concerns about the sudden exit of a large overhang of króna holdings of non-residents. However, removal of capital controls is an important factor in rebuilding trust with international investors and enabling Icelandic companies to access global capital markets. Moreover, it cannot be delayed indefinitely under EFTA and OECD rules (Box 2) and indeed will be necessary if Iceland is to satisfy EU accession criteria.

Box 2. **Iceland's temporary derogation under the OECD Codes on the Liberalisation of Capital Movements and of Current Invisible Operations**

Iceland has notified the OECD that it has implemented exchange and capital controls and invoked the clause in the Codes authorising a temporary dispensation from its standstill obligations (*i.e.* not to introduce such controls). The OECD Investment Committee, which is responsible for monitoring compliance with the Codes, recently concluded that Iceland was justified in invoking this temporary derogation due to the financial crisis. The Committee urged Iceland to remove the controls as soon as possible and requested a progress report within 12 months.

Good progress has been made in restoring the financial sector to health, but much remains to be done. The new banks created out of the three main banks that failed in October 2008, inflicting severe losses on creditors other than depositors, were recapitalised by the end of 2009 and, by the end of 2010, most of the failed savings banks were recapitalised and the Housing Finance Fund (HFF) had received a capital injection to compensate for losses. After a slow start, progress in restructuring non-performing loans (NPLs) has picked up recently and should accelerate further in coming months as the agreements made between the government and financial institutions to move more quickly on restructuring household and small and medium-sized enterprises non-performing loans bear fruit. It may, nevertheless be some time before domestic credit growth resumes.

Solid progress has also been made in correcting the weaknesses in prudential regulation, supervision and deposit guarantee arrangements that had permitted the development of large risks in the Icelandic banking system. Prudential regulation and supervision have been reformed to prevent the practices that most contributed to the failure of the banks from recurring and further reforms are planned, notably to ensure compliance with the revised Basel Core Principles and to implement Basel III. An agreement has also been reached to enhance information exchange and co-operation between the Financial Supervisory Authority (FME) and the CBI, a key weakness exposed by the crisis. The government has also submitted a bill to Parliament to make sweeping changes to the Depositors' and Investors' Guarantee Fund (DIGF) in line with reforms being envisaged in the EU.

Restoring the financial sector to health

Financial sector restructuring has been achieved in a way that limits fiscal costs and strengthens market discipline

Restructuring of most of the financial institutions that failed in the wake of the global financial crisis was completed by the end of 2010. In the days following the passage of the Emergency Act on 8 October 2008, the government created new banks by transferring the three main old banks' domestic deposits and assets (written down by 60%) booked through domestic branches, and placed the old banks in moratorium under the control of Resolution Committees. This process was completed by the end of 2009 when the new banks were capitalised. Creditors of the old banks accepted majority equity stakes in two of the new banks (*Arion banki and Íslandsbanki*) in exchange for the net assets transferred to these new banks (the government also purchased subordinated bonds issued by these banks) and the government took a majority equity stake in the other bank (*Landsbankinn*). Savings banks, which also suffered severe damage in the crisis, were mostly restructured by the end of 2010. Restructuring of financial institutions has given management a mandate for restructuring NPLs and necessary information about the capital available to support debt write-downs.

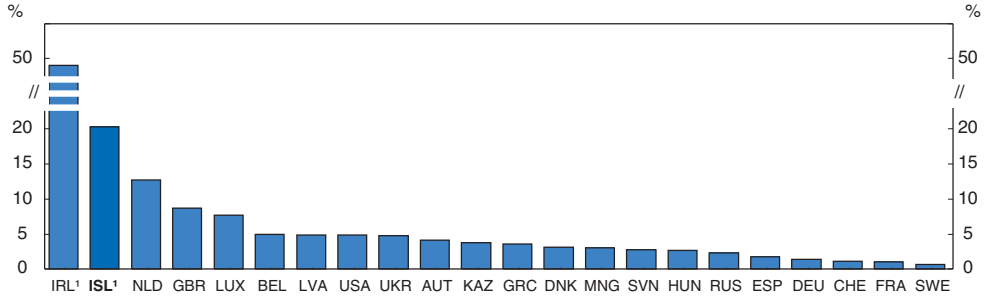
The government also had to inject capital equivalent to 2.1% of GDP into the HFF, which is an independent state-owned agency that is the dominant player in the housing mortgage market, to compensate for losses on its loan portfolio. The HFF has a public policy mandate to promote security of tenure and equality of access to affordable housing through the granting of loans to individuals (for the purchase of private homes) and to local authorities, companies and non-governmental organisations (for the construction or acquisition of rental housing). In response to a recent ESA ruling on the recapitalization of the HFF, the government will soon present a plan to reform it. *The government should target assistance for housing costs more tightly on lower income households and should deliver it through measures that do not accord policy-related competitive advantages to the HFF as they reduce the efficiency of financial intermediation services and expose the taxpayer to financial risks. To level the playing field with other financial intermediaries, the government should increase the HFF's capital adequacy ratio to the levels applying to other financial institutions, subject it to prudential regulation and supervision by the FME, and charge the HFF for the value of its loan repayment guarantee.*

With the exception of the state-owned HFF, the Icelandic authorities have consistently resolved financial institutions by imposing losses first on shareholders and subsequently on non-priority (*i.e.* non-deposit) unsecured creditors. This approach has limited the direct impact on net government debt of restructuring financial institutions to around 5.9% of GDP, reflecting the cost of recapitalising the banks (3.8% of GDP) and the HFF (2.1% of GDP). There is a possibility of further direct costs (up to around 3% of GDP) if the EFTA Court finds that the government is liable for the unpaid debt of the Iceland Depositors' and Investors' Guarantee Fund to Icesave depositors. This approach has also strengthened market discipline, as shareholders and unsecured non-priority creditors have few grounds for expecting government bailouts to resolve financial institutions, which should reduce the incentives to pursue risky strategies and hence the probability of future financial crises.

However, the direct fiscal costs of the financial crisis incurred by the Iceland government have not been limited to the costs of restructuring financial institutions. The main costs were incurred in the months before the banks failed when the CBI lent to them against collateral of dubious quality (mainly claims on other Icelandic banks) in what appears with hindsight to have been a strategy of gambling for resurrection. Losses on these loans and on bank securities held by the Treasury amounted to 13% of GDP. In addition, there have been the costs of called loan guarantees (1.5% of GDP). Adding these costs to the costs of restructuring financial institutions brings total direct fiscal costs of the recent financial crisis to about 20% of GDP, which is higher than in any other country except Ireland (Figure 5). The CBI has since tightened rules on collateral eligible for loans.

Figure 5. **Direct fiscal costs of the financial crisis over 2007-09**

As per cent of 2009 nominal GDP



1. OECD estimates up to early 2011 as per cent of 2010 nominal GDP. For Iceland, fiscal costs comprise losses on loans to the failed banks (12.9% of GDP, of which 11.1 percentage points is attributable to losses on loans made by the CBI), the net costs of recapitalisation of failed banks (3.8% of GDP), the costs of recapitalising the HFF (2.1% of GDP) and the cost of called loan guarantees (1.5% of GDP). For Ireland, these are the estimated costs of bank recapitalisations.

Source: Laeven and Valencia (2010), *Resolution of Banking Crises: The Good, the Bad, and the Ugly*, *IMF Working Paper* WP/10/146; and OECD for Iceland and Ireland.

StatLink http://dx.doi.org/10.1787/888932445486

Steps are being taken to accelerate private-sector debt restructuring

With financial institutions restructured, the main remaining requirement for restoring normal financial intermediation services is to restructure NPLs or to foreclose if that results in smaller losses. In this way, resources could be freed for financial intermediaries to lend to borrowers with potentially profitable projects, boosting economic growth. At the same time, firms' and households' balance sheets would be cleaned of debt that they cannot repay, providing a sounder basis for making new investments in potentially profitable projects. The banks have substantial buffers against which to write down debt without reducing their capital as they currently carry their loan portfolios in their books at only 50% of face value on average.

Progress in restructuring the banks' NPLs or foreclosing has been slow. By late 2010, NPLs had fallen only to about 40% of the book value of the banks' loan portfolios from a peak of 45% in late 2008 (Table 2).

Table 2. **Progress in reducing the proportion of non-performing loans (NPL) has been slow**[1]

%

All loan categories	31.12.2008	31.12.2009	31.08.2010
Performing loans, w/o restructuring		44	35
Performing loans, after restructuring		14	26
In default by 90 days or payment unlikely	45	42	39
Total		100	100

1. The three largest commercial banking groups. Book value.
Source: Financial Supervisory Authority

The government recognises the importance of private-sector debt restructuring for laying a solid foundation for future economic growth and to this end has implemented or plans to take measures to accelerate this process:

- It has set bank capital adequacy ratios (CARs) at high levels (16%; 12% Tier 1 capital) to give banks an incentive to reduce uncertainty about the value of their loan portfolios by restructuring NPLs. *Incentives for banks to restructure NPLs should be further strengthened by requiring capital to be held against the difference between the face value of loans and their book value*.
- It has passed legislation to reduce uncertainty caused by the Supreme Court ruling that foreign-exchange-linked-domestic-currency car leases were illegal. This ruling cast into doubt the legality of all foreign-exchange linked domestic currency loans, undermining the legal basis for restructuring them. The legislation declares that all such loans to households are illegal, converts them into Icelandic króna at the exchange rate prevailing when they were made and stipulates the domestic currency interest rates to apply to the restructured debt from the date when the loan was made. The legislation was not extended to cover such loans to firms, which are much larger, out of concern that this could expose the government to litigation risk.
- The government and the main lending institutions announced a package of measures in December 2010 to accelerate household debt restructuring. The measures include a targeted process for writing down mortgages and tax rebates and subsidies to reduce mortgage interest costs. To discourage households from holding out for a better deal, they have been informed that the offer is final and have until mid-2011 to apply to benefit from it.
- The government and financial institutions have also signed a non-binding agreement to accelerate debt restructuring for viable SMEs. Under the agreement, loans to these companies will be written down to the net present value (NPV) of their cash flows and lenders will receive an equity stake in exchange, which reduces the incentive for SMEs that could repay their debts to take advantage of the system. Tax barriers to restructuring will be removed. All SMEs are to be reviewed by July 2011 and those that qualify are to receive a restructuring offer.

Debt restructuring has proved to be particularly difficult for mortgages from pension funds as Boards of Trustees do not have authority to agree to actions that could make pension-fund members worse off. In view of these constraints, *the government should no longer permit pension funds to make mortgage loans to members. Rather, loans to members should be fully secured against their own assets in the pension fund and limited to a certain percentage of these assets to reduce the risk that the value of this collateral falls below the value of the loan*. This would maintain the attractiveness of saving through pension funds by allowing members "to borrow from themselves" when need be while drastically reducing the risk for pension funds of loan losses.

Micro-prudential regulation and supervision is being improved

The financial crisis exposed serious shortcomings in micro-prudential regulation and supervision in Iceland:

- nothing was done to limit the very rapid growth of the banks, which grew beyond both their own management capabilities and the regulatory capacity of the FME;
- the banks had large exposures to their owners, connected parties and key management personnel;
- the banks' equity was weak – it did not provide the intended cushion against losses for creditors – because a large proportion of shareholdings were financed by loans against the collateral of the shares themselves and the banks had entered into forward purchases of their own shares;
- the banks relied too much on wholesale funding, which tends to be less stable than retail deposits and dried up as concerns about the banks' solvency grew;

The Act on Financial Undertakings 2010 addresses most of these shortcomings. It:

- requires improved risk management and governance in banks (including stronger rules on executive pay and more stringent requirements to qualify to be a member of the board of directors);
- more strictly regulates large exposures and lending to related and connected parties;
- strengthens fit and proper requirements for major shareholders;
- increases the discretionary powers of the FME to act;
- provides for the creation of a special register of large borrowers;
- imposes restrictions on the acceptance of capital shares in financial institutions as collateral for loans so as to protect the quality of bank equity; and
- strengthens audit requirements.

The problem of excessive reliance on wholesale funding was solved with the creation of the new banks, which are almost entirely funded by deposits. Even so, the CBI has also tightened the liquidity requirements on the banks.

Additional regulatory and supervision improvements will be made by fully adopting the Basel III framework. *The Icelandic authorities should implement their plan to introduce a leverage ratio and capital conservation buffer ahead of the international schedule. Further, the authorities should continue to treat the Basel III requirements as a floor to address the small size and high concentration of the Icelandic financial market*. For instance, Iceland's small currency zone makes it more susceptible to sudden restrictions in international capital markets; as a result it would be prudent for Icelandic banks to maintain higher liquidity buffers than banks from larger currency areas.

Macro-prudential regulation is to be strengthened

The majority of the failures in the lead-up to the Icelandic financial crisis were micro-prudential in nature. Nonetheless, these problems were amplified by the failure of macro-prudential regulation to address the high common vulnerability of the banks to the fortunes of Iceland's large investment groups, which had highly leveraged positions in foreign equity and commercial property markets.

Steps have been taken to reduce risk correlation, notably excluding cross-linked loans from collateral eligible for central bank loans, setting up a register for large borrowers, and signing a co-operation agreement between the CBI and the FME in early 2011, which should allow better identification of common risks across institutions. When the risks have been identified, targeted tools can be used to mitigate the risks, such as the Basel III provisions for countercyclical capital ratios and forward-looking provisioning to address an expansion of credit. The use of such tools could be more effective if the FME were to be merged into the CBI, thereby expanding the CBI's responsibilities to include prudential regulation and supervision as suggested in principle by White (2011). Balance sheet expansions sourced in wholesale funding were less pronounced in countries where the central bank was the primary regulator and had strong powers of supervision and resolution (Merrouche and Nier, 2010). Such a merger would also allow the CBI to be better informed about the solvency of banks, reducing the risk that loans are extended to banks that are likely to be insolvent, as occurred through the CBI's liquidity facilities in mid-2008. To avoid the risk that an identified risk escapes regulation, *it is vital that the regulator can extend the regulatory umbrella to any financial firm that is likely to be systemically important*.

The blanket deposit guarantee will eventually be replaced by limited deposit guarantee arrangements

To head-off a bank-run, the government announced a blanket guarantee of retail deposits when the new banks were created. This objective was achieved but at the expense of distorting competition between financial institutions covered and not covered. *To avoid these costs, the current blanket guarantee eventually needs to be replaced by a deposit guarantee arrangement that is not subsidised and has limited coverage*. Such an arrangement would need to conform to EU regulations.

There is already a bill before Parliament to reform the DIGF to reduce distortions to competition, increase *ex ante* funding, which proved to be inadequate in the crisis, and more generally to bring the scheme into line with anticipated EU requirements. The bill introduces a coverage ceiling of EUR 100 000 per depositor per institution and does away with the compensation in full on deposits up to EUR 20 000 under the old scheme. *Ex ante* funding is to be increased to 1.5% of covered deposits within seven years, as required by the EU, and eventually to 4%, four times more than the funding ratio before the crisis and twice the funding rate suggested in a recent analysis of the United States (FDIC, 2010). Since the financial system in Iceland is far more concentrated than in the United States and almost all other OECD countries, a high funding ratio as proposed is appropriate. To achieve these funding levels, risk-adjusted premiums are to be assessed that would comprise a linear fee of 1% of deposits multiplied by a risk-based element (greater than 1). The move to risk-based premiums is welcome as it reduces incentives otherwise inherent in deposit guarantee arrangements for financial institutions to pursue risky strategies. The proposed legislation also stipulates that the government does not guarantee the DIGF's liabilities, which was not stated explicitly in the old legislation.

This reform should be complemented by the establishment of statutory authority to intervene in financial institutions' operations at an early stage either to reduce the risk of failure or to resolve a failed institution. Such authority reduces incentives for financial institutions to take advantage of deposit insurance arrangements by adopting more risky strategies and concomitantly reduces expected payouts from the deposit guarantee fund. While Iceland created resolution powers through the Emergency Act of 2008, it now faces the task of legislating permanent intervention powers, as do other European countries (EC, 2009). The Icelandic government plans to align its legislation on intervention powers with whatever is decided at the European level.

Box 3. **Summary of recommendations for restoring the financial sector to health**

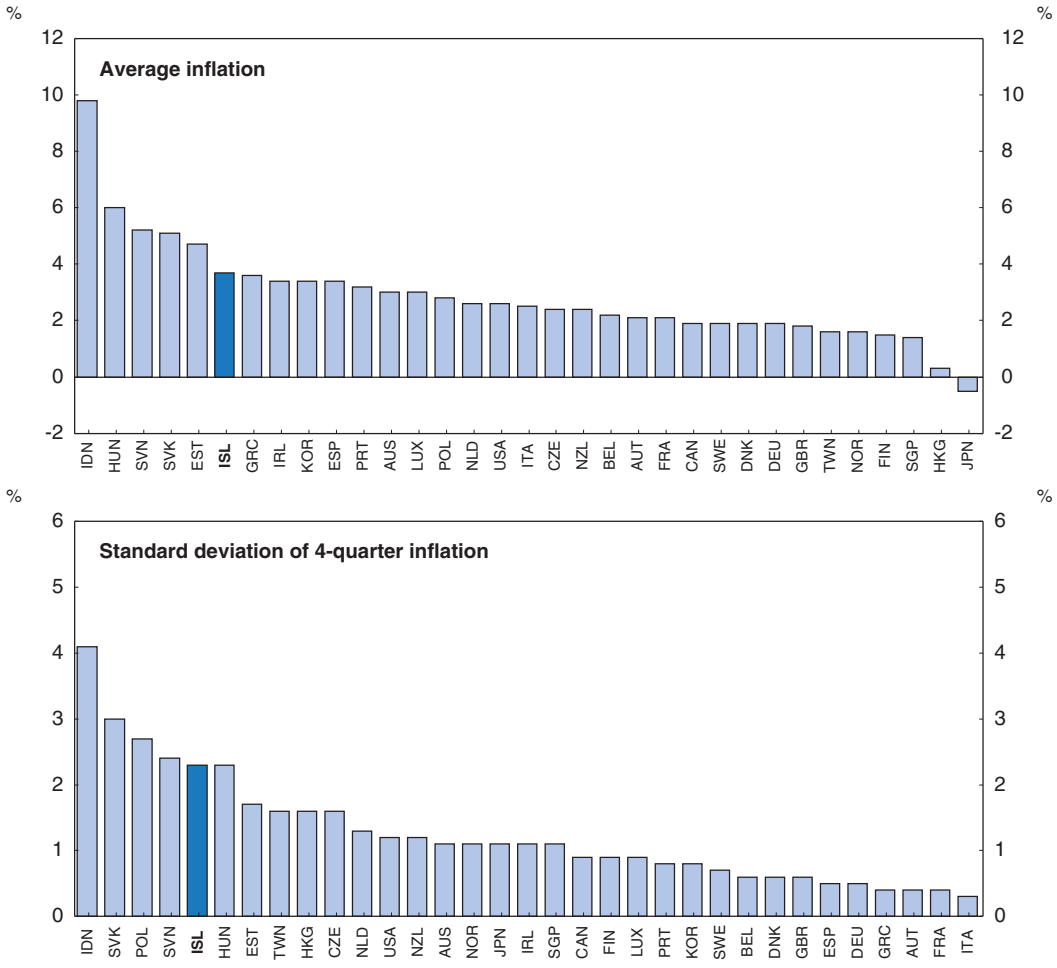
- Strengthen incentives for banks to restructure NPLs by raising capital adequacy risk weights on NPLs that have not yet been restructured.
- Increase the HFF's capital adequacy ratio to the levels applying to other financial institutions, subject it to prudential regulation and supervision by the FME, and charge the HFF for the value of its loan repayment guarantee.
- Prohibit pension funds for making mortgage loans to members. Rather, pension funds should only be allowed to make loans to members that are secured against a proportion of their claims on the fund, thereby reducing the risk of there being insufficient collateral readily available to cover the loan in the event that it becomes non-performing.
- The plan to adopt the Basel III framework should be implemented and the authorities should continue to phase in portions, such as the leverage ratio, more quickly than envisioned in the Basel III timeline.
- The authorities should consider merging the FME into the CBI, thereby expanding the CBI's responsibilities to include prudential regulation and supervision, to make macro-prudential regulation and supervision more effective.
- The current blanket deposit guarantee should be replaced by the more limited deposit guarantee arrangements already planned and a permanent statutory authority to intervene at an early stage in the operations of financial institutions at risk of failing should be established.

Delivering sound inflation performance and monetary policy

Iceland has not yet established a strong track record for achieving price stability. Even prior to the financial crisis, inflation had been relatively volatile and slightly higher than is generally considered to be compatible with price stability (Figure 6). The lack of confidence in the stability of prices results in a higher inflation risk premium on interest rates, which *ceteris paribus* lowers investment and reduces productivity. Further, volatile inflation can distort price signals and reduce the productivity of the investment that is undertaken (Al-Marhubi, 1998).

The spike in inflation in the wake of the financial crisis, when inflation reached 18.6% in the year to January 2009, has largely been transitory. Capital controls and, at least initially, relatively high policy rates have succeeded in reducing inflation to around the target rate (2½ per cent). An important challenge is to ensure that Iceland has monetary policy institutions that are effective in delivering price stability, especially after capital controls are lifted.

Figure 6. **Even before the crisis Iceland experienced volatile and above average inflation**[1]



1. Changes between 2000 Q2 and 2007 Q4 in the harmonized consumer price index for European countries or the consumer price index excluding housing, financial and insurance services for other countries.

Source: OECD, *Main Economic Indicators Database*; Australian Bureau of Statistics.

StatLink http://dx.doi.org/10.1787/888932445505

Non-resident króna debt claims are being neutralised to open the way for removing capital controls

The implementation of capital controls succeeded in limiting capital outflows and the depreciation of the currency. However, the longer such controls are in place the more they lead to an inefficient allocation of capital, reduce investment returns and distort market decision making by firms as they try to minimize or evade the controls (Yellen 2011).

The main obstacle to the rapid removal of capital controls is the risk that non-residents seek to convert their large holdings of Icelandic króna-denominated bonds and deposits (about 30% of GDP) into foreign exchange, resulting in a large depreciation of the króna. To neutralise this risk and hence pave the way for removing capital controls, the authorities have adopted a plan encouraging non-resident holders of these assets to convert them into

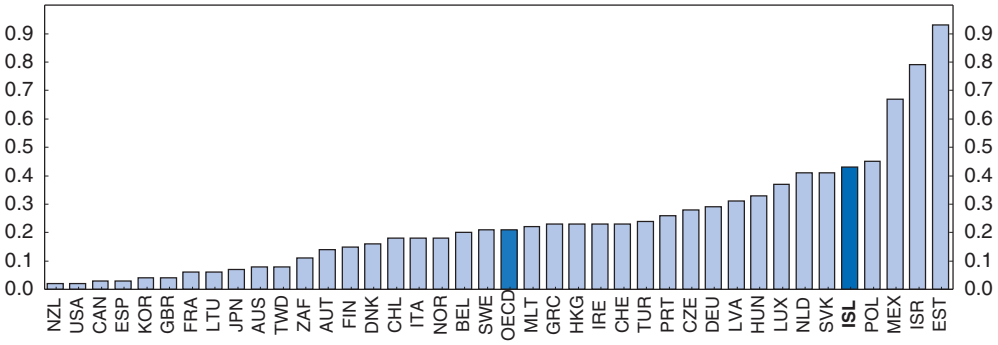
long-term instruments that cannot be sold for several years or will be allowed to convert into foreign exchange subject to paying an exit tax. *Once this overhang is neutralised, capital controls should be removed as quickly as possible.*

Managing the volatility of the exchange rate and co-ordinating with fiscal policy is the key to controlling inflation

The CBI has indicated that, after the IMF programme ends, it favours returning to a form of flexible inflation targeting with an active intervention policy in the foreign-exchange market and more co-ordination with fiscal and prudential policy (CBI, 2010). *The CBI should adopt this monetary policy regime but, in comparison to standard inflation targeting, which focuses largely on consumer price inflation, the CBI will need to place significant emphasis on reducing the volatility of the exchange rate*. The extra focus on exchange rate stability is necessary to control inflation in Iceland since pass-through of exchange rate movements to inflation is much stronger than for most other OECD countries (Figure 7). However, care will need to be taken in the conduct of monetary policy as active exchange market intervention to defend a fixed exchange-rate level is likely to be ineffective and could result in large losses for taxpayers. This risk of significant losses to taxpayers is all the more acute given the Icelandic government's modest resources available for intervention in relation to those of parties on the opposite side of the market. Rather, active intervention should seek to slow movements in the real exchange rate that are clearly out of line with fundamentals. Such intervention will be profitable if it helps to stabilise the exchange rate and loss making otherwise. With relatively small exchange rate reserves, interest rates will need to remain the primary monetary policy lever in Iceland.

As a supplement to interest rate movements, *fiscal policy and, as noted above, macro-prudential policy should be better co-ordinated with monetary policy to reinforce low inflation and exchange rate stability*. For example, prudential regulation could have been used to limit the credit boom before the financial crisis, reducing the need to raise policy rates to lower inflation. Similarly, a tighter fiscal policy would have reduced the need for higher policy rates.

Figure 7. **Exchange rate pass-through**[1]



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/10.1787/888932445524

In the long run, Iceland should adopt the euro

Iceland appears to have the smallest independent, floating currency in the world. Other countries the size of Iceland either do not have their own currency (Estonia, Luxembourg, Malta) or peg their currency to that of another country (Barbados, Bahamas, Belize, Brunei, Latvia, Lithuania, Maldives, Netherlands Antilles). Iceland has applied to join the EU (accession negotiations are currently underway) with a view to adopting the euro as quickly as possible. Joining the euro area would significantly lower the volatility of traded good prices and lower overall inflation volatility as nearly half of Iceland's external trade is with countries in the euro area or pegged to it (CBI, 2010). The reduction in the inflation risk premium and the elimination of the exchange rate risk premium with respect to the euro would lower domestic real interest rates, fostering higher capital intensity and increasing productivity, an area where Iceland has lagged behind the OECD average (OECD, 2010d). While Iceland does not appear to be part of the optimal euro currency area, the costs of losing exchange rate flexibility to respond to idiosyncratic shocks should nevertheless remain limited owing to Iceland having a very flexible labour market (OECD, 2009a), although adjusting the real exchange rate through the labour market is slower and possibly more costly than adjusting it through the nominal exchange rate. Once in the EU, meeting the Maastricht convergence criteria, some of which Iceland does not currently satisfy, would be challenging. Nonetheless, the government's debt reduction and inflation goals should bring it in line with the criteria even if Iceland decides not to join the EU.

Box 4. **Summary of recommendations for delivering sound inflation performance and monetary policy**

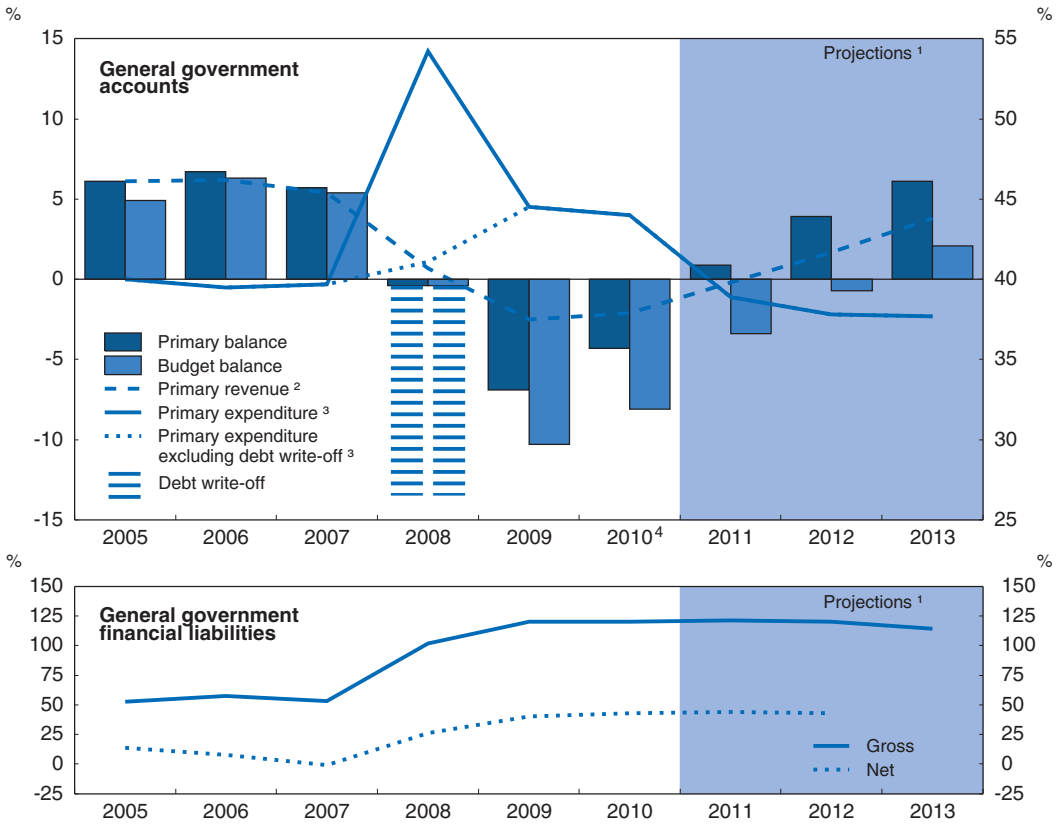
- Take steps to neutralize the overhang of non-resident liquid króna holdings so as to pave the way for the removal of capital controls as quickly as possible.
- Promote low inflation by moving to an inflation-targeting regime which places greater weight on smoothing fluctuations in the exchange rate and is supported by fiscal policy and macro-prudential regulation.
- In the event that Iceland joins the EU, adopt the euro as quickly as possible.

Securing sustainable public finances

The financial crisis wreaked havoc with Iceland's public finances. The general government budget balance (excluding debt write-offs) plunged from near balance in 2008 to a deficit of 10% of GDP in 2009, mostly owing to the collapse in revenues (Figure 8). These large budget deficits together with revaluation losses on foreign-currency debt increased net general government debt from approximately nothing in 2007 to 40% of GDP in 2009. The increase in gross debt was 30 percentage points greater, as there were substantial borrowings to recapitalise the banks (almost 20% of GDP) and to build up foreign exchange reserves, both of which entailed corresponding increases in financial assets. These figures do not include the costs of settling the Icesave dispute, which could amount to up to 3% of GDP.

Figure 8. **Public finances are improving after having deteriorated markedly in the wake of financial crisis**

As per cent of GDP



1. Projections of the Ministry of Economic Affairs (2011). Gross debt projections include civil servant pension liabilities (about 20% of GDP).
2. Total revenue less property income (on the right scale).
3. Total expenditures less interest payments (on the right scale).
4. Primary expenditure and budget balances include a one-off charge of 1.5% of GDP for called loan guarantees.

Source: Statistics Iceland; Ministry of Economic Affairs, *Pre-Accession Economic Programme 2011*; and OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932445543

The government is implementing a demanding fiscal consolidation programme

To restore Iceland's public finances to a sustainable path, the government is implementing a fiscal consolidation programme agreed with the IMF under the SBA. The aim until recently was to increase the general government primary balance by approximately 13% of GDP between 2009 and 2013 to a surplus of 6% of GDP, with increases to be front-loaded (about 4% of GDP per year in 2010 and 2011 excluding the cost of called loan guarantees in 2010 [1.5% of GDP]) (Table 3). The increase in the primary balance up to 2011 reflects central government consolidation measures that are somewhat more focused on expenditure reductions than revenue increases (Table 4). Subsequently, the increases in the primary balance were mainly to be achieved through increases in revenues from cyclically low levels. The Ministry of Finance is currently re-evaluating these targets and the required adjustment in public finances in light of the evolving economic outlook and lower debt assumption by the

Table 3. **General government budget plan**[1]

% GDP

	2009	2010	2011	2012	2013
Primary revenue	37.5	39.7	39.8	41.7	43.8
Of which					
Total taxes	30.8	31.8	31.1	31.9	32.5
Social security contributions	3.1	4.2	4.0	4.0	4.1
Other	3.7	3.7	4.7	5.8	7.1
Primary expenditure	44.5	44.0	38.9	37.8	37.7
Of which					
Compensation of employees	15.0	14.6	13.0	12.1	11.8
Other collective consumption	12.5	12.3	9.9	9.1	8.7
Social transfers	8.2	7.8	7.5	6.9	6.5
Subsidies	1.9	1.8	1.6	1.5	1.4
Gross fixed capital formation	3.5	2.6	2.3	2.4	2.5
Other	3.4	4.8	4.6	5.8	6.8
Primary balance	–6.9	–4.3	0.9	3.9	6.1
Net lending	10.0	–7.8	–2.6	0.1	2.8

1. The plan presented in Ministry of Economic Affairs (2011) has been updated with data up to 2010 since published by Statistics Iceland.

Source: Statistics Iceland for 2009 and 2010, Ministry of Economic Affairs for subsequent years.

Table 4. **Central government fiscal consolidation measures**[1]

Accrual accounting, difference from each year's baseline, ISK billion in current prices

	2009	2010	2011	Cumulative
Revenue				
Income tax and capital gains tax	10.8	3.9	7.2	21.9
Social security contributions	6.0	18.4	1.1	25.5
VAT		4.0	0.3	4.3
Excise taxes	6.5	5.5	0.8	12.8
Environment and resource taxes		4.7	2.0	6.7
Net wealth tax and inheritance tax		3.5	2.7	6.2
Prepayment of personal pension plans	5.3	–0.5	–0.9	3.9
Other	0.4	4.2	0.0	4.6
Total	**29.0**	**43.7**	**13.2**	**85.9**
% of GDP	**1.9**	**2.8**	**0.8**	**5.3**
Expenditure				
Current expenditure	–15.3	–14.0	–11.4	–38.9
Transfer payments	–9.3	–15.9	–7.8	–30.0
Investment and maintenance	–17.7	–13.9	–3.9	–31.1
Avoided wage and benefit increases	–5.5	–11.0	–5.0	–21.5
Total	**–47.8**	**–54.8**	**–28.1**	**–121.4**
% of GDP	**–3.2**	**–3.6**	**–1.7**	**–7.5**

1. These figures reflect direct measures for raising new revenue and reducing expenditures. The increase in the budget balance has been smaller than the measures because the crisis has caused revenues to fall and expenditures to rise markedly.

Source: Ministry of Finance.

government than had earlier been anticipated. The revised consolidation plan is expected to aim for smaller increases in the primary balance and overall balance – to at least 3% of GDP and to a small surplus, respectively – by 2013 than in the original plan. The authorities plan to increase gradually the primary surplus beyond 2013 to bring the gross government debt-to-GDP ratio to below 60% of GDP. The government could also reduce gross debt by realizing its claims on the new banks when that becomes feasible.

The government has endeavoured to limit the impact of consolidation measures on low-income households, for example by making greater use of means testing, increasing the progressivity of personal income taxation, and focusing public sector wage cuts on high-income earners. At the same time, budget room has been made for a temporary extension of the duration of unemployment benefits from three years to four years (see Chapter 3).

The targets of the consolidation programme for both 2009 and 2010 were met. The primary general government budget deficit was held to 6.9% of GDP in 2009 and cut to 2.8% of GDP (excluding the one-off cost of called loan guarantees) in 2010. The 2011 budget is designed to achieve a primary surplus of about 1% of GDP. Consolidation measures are again more focused on the expenditure side of the budget than the revenue side. Expenditure cuts involve, as before, a freeze on wages and benefits, some selective cuts in large expenditure items (road construction and child benefits), graded targets for contracting operational costs and subsidies with more stringent targets for general administration, supervision and services and more lenient targets for welfare services and medical insurance. The main revenue measures are an increase in capital income tax and increases in the temporary taxes on wealth, carbon emissions, electricity and hot water use that were introduced in 2010. Pricing carbon emissions is the cornerstone of a policy to reduce them at least cost. The taxes on electricity and hot water use, which are taxes on resource rents, are also efficient as they do not distort economic decisions. *The carbon tax should be increased to the full carbon price in the European Emissions Trading Scheme (ETS) and, along with the taxes on electricity and hot water use, be made permanent.*

The government has implemented institutional reforms to strengthen fiscal discipline

To increase the likelihood that fiscal consolidation plans are implemented, the government has undertaken a number of institutional reforms:

- Beginning with the 2010 budget, Medium Term Outlook (MTO) projections have become targets for the adjustment path of the primary balance and the overall spending envelope supported by a stronger political commitment from the government. Previously, the plan was viewed more as a forecast than a binding and verifiable intention, which led to a tendency for upward drift in expenditure in each revision of the projections.
- A two-stage budget approval process has been adopted (*i.e.* top-down budgeting) in which the Minister of Finance submits to Parliament a report on fiscal policy and its objectives, including a revision of the consolidation plan, for a policy discussion. On the basis of the policy report, the Minister of Finance presents the budget proposal for the next fiscal year to Parliament, including expenditure frames for ministries and agencies, and it then approves the appropriation of funds for individual spending categories and projects. The aim is to involve Parliament in the formulation of policy objectives at an early stage as well as to ensure that all cabinet members take responsibility for achieving the government's spending targets and that individual spending categories are prioritised.
- The government has imposed limits on and greater scrutiny of carryovers, and no longer permits drawing on future appropriations.
- The government has taken steps to reduce earmarking of revenues, as this practice conflicts with top-down fiscal management.

These reforms should be made permanent and should be strengthened by requiring each minister to account for ministry performance before Parliament.

The framework for local government finances, which has been relatively unconstrained by central government, is also being reformed to ensure that local government finances are compatible with the national fiscal plan. The bill that has been presented to Parliament includes a three-year rolling average budget balance rule, which requires corrective action if a local government is in breach, and a ceiling on the ratio of debt to tax revenues (150% of regular local authority income). These reforms are welcome as fiscal consolidation tends to be more successful in countries that have national or supranational rules (Guichard *et al.*, 2007).

The adoption of fiscal rules would help to sustain needed restraint

Iceland will need to sustain fiscal consolidation beyond the horizon (2013) of the IMF SBA to bring government debt down to a level that leaves room for manoeuvre to cope with adverse developments. The importance of having room for manoeuvre was highlighted by the financial crisis, which resulted in public debt increasing sharply but to still manageable levels thanks to low initial levels. Ostry *et al.* (2010) estimate that, at the gross general government debt level that they project in 2015 (87% of GDP excluding civil servant pension liabilities), Iceland is unlikely to have further room for fiscal manoeuvre. As a result, an adverse development could put public debt on an explosive path if fiscal policy were to follow its historical pattern. A notable risk to public debt dynamics is that interest rates could rise in relation to economic growth, for example owing to a global recovery in investment expenditure (Dobbs *et al.*, 2010). *To recreate fiscal room for manoeuvre, the government should gradually increase budget surpluses beyond 2013.* Assuming a general government budget surplus of 3% of GDP from 2015 onwards and trend growth in nominal GDP of 4% per year, gross general government debt could be reduced from 87% of GDP in 2015 to below 60% of GDP by around 2020, a faster pace of debt reduction than the minimum stipulated under the proposed revision to the Stability and Growth Pact for countries with general government gross debt in excess of 60% of GDP (debt must be reduced at an annual average rate of at least 1/20th of the excess over 60% of GDP over any three year period). Maintaining such budget surpluses would reduce general government gross debt to the level prevailing before the financial crisis (33% of GDP excluding civil servant pension liabilities) by 2025.

Fiscal rules could help to achieve such debt reduction (Guichard *et al.*, 2007; IMF, 2009a). *The government should adopt a medium-term budget balance rule that is compatible with its debt reduction objectives* (IMF, 2009). Such a rule would complement the expenditure targets and top-down budgeting already implemented. To ensure effective enforcement of the rule, *a mechanism should be introduced that increases the reputational cost for non-respect, such as fiscal responsibility legislation along the lines of that in Australia and New Zealand.* Such legislation sets out principles of responsible fiscal management (*e.g.* run current budget surpluses in each year until government debt has been reduced to levels that leave room for manoeuvre to cope with adverse developments, such as a financial crisis) and lays down strict transparency requirements. Government may temporarily deviate from the principles of responsible fiscal management but is required to explain such deviations, indicate the approach to be taken to return to the principles and the period of time that this is likely to take.

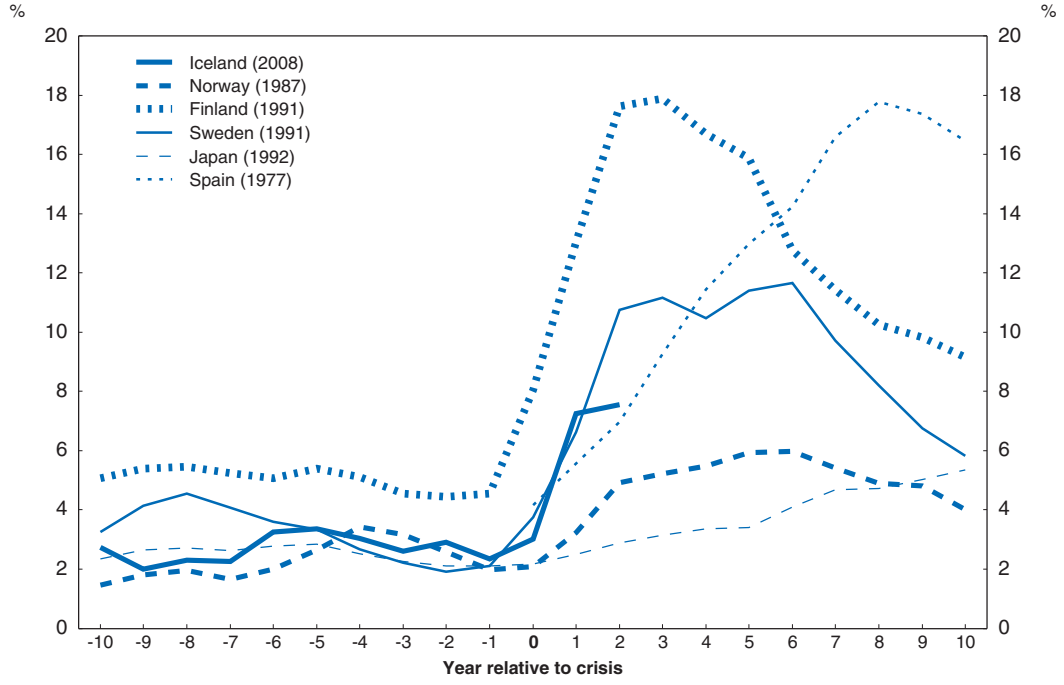
Box 5. **Summary of recommendations for securing sustainable public finances**

- Make the recent fiscal institutional reforms permanent and strengthen them by making each government minister more accountable for ministry performance before Parliament.
- Gradually increase budget surpluses beyond 2013, the end of the IMF SBA programme horizon, to reduce debt to a level (such as the pre-crisis level) that restores comfortable margins of room for fiscal manoeuvre to cope with adverse developments.
- To achieve these debt reduction targets, the government should adopt a budget balance rule and back it up with suitable enforcement mechanisms, such as fiscal responsibility legislation along the lines of that in Australia and New Zealand.

Fostering the return to work

There is a risk that unemployment will remain elevated for many years, as has occurred following other advanced countries' financial crises (Reinhart and Reinhart, 2010) (Figure 9). A major risk factor is the rise of long-term unemployment (those out of work for 6 months or more), which has jumped from ¼ per cent of the workforce in 2007 to 3% in the most recent four quarters. While this long-term unemployment rate remains low compared with other OECD countries, it is high by Icelandic standards. As long-term unemployment has increased, the structural unemployment rate is estimated also to have risen by ¾ percentage point since 2007 to 3¼ per cent (OECD, 2011).

Figure 9. **Unemployment increases persist after large financial crises**[1]



1. The financial crises with which the Icelandic crisis is compared are the largest in advanced countries since WW II, as identified by Reinhart and Reinhart (2010).

Source: OECD, *OECD Economic Outlook Database*. StatLink http://dx.doi.org/10.1787/888932445562

Making existing labour support programmes more efficient can reduce the possibility of structural unemployment

Despite factors that mitigate the risk of a large rise in structural unemployment in Iceland, the fact remains that the longer potential workers are without jobs, the more out of touch with the labour force they become and the more their skills degrade, making them harder to employ. Labour-market activation programmes can reduce this risk by exerting pressure on the unemployed to remain in touch with the labour market and by upgrading their skills, where appropriate.

The government has substantially boosted expenditure on public employment services to enable them to follow-up on the rising number of cases and offer appropriate job matching and training services. Such an approach has been significantly linked to lower levels of unemployment in OECD countries (OECD, 2011). There has also been a five-fold increase in the budget for active labour market programmes (ALMPs) since 2007, which are likely to be particularly important for helping the out-of-work to maintain contact with the labour market given that the unemployed greatly outweigh the number of job openings.

Numerous types of skills training classes are available for the unemployed in Iceland – in fact the long-term unemployed are required to take occasional classes to maintain unemployment eligibility. However, due to the relative brevity of the courses (many last only a couple of days) and broadness of the topics, it is unclear how useful some of these courses are in preparing workers for jobs. *The list of approved job skills courses and their duration should be revised, in consultation with the organisations representing the interests of employers and labour, to best fulfil the goal of moving the unemployed into jobs.*

One of the most useful ALMP programmes in Iceland is a long-term internship where the Icelandic employment services pay a stipend (the unemployment benefit to which the internee would otherwise have been entitled) to a company to train the unemployed person for six months. At the end of the programme roughly half of the workers stay with the company that they interned with. This suggests the high value of on-the-job training. This programme, which is targeted at the long-run unemployed, remains quite small with around 700 individuals (just under 15% of the long-term unemployed) because of weak demand for workers. *This programme should be temporarily expanded by easing entry conditions.* However, a subsidy targeted at the long-term unemployed can create labour market distortions and it may not be advisable to continue the programme once labour market conditions improve.

After the recovery has taken hold and unemployment has been reduced, the maximum duration of unemployment benefits should be allowed to decline, as planned, from the current four years, which is high by international comparison (OECD, 2009b), to three years, the level before the crisis. The extension of benefit duration has met a social need and is unlikely to have had much effect on unemployment given that few job openings have been available. However, as the labour market improves, extended unemployment benefits are likely to be a drag on the labour market as they weaken incentives for the unemployed to move into employment.

A particularly beneficial form of education and training is for individuals who have not completed secondary education to do so. This is very effective in increasing their earnings prospects and in reducing their long-term probability of being unemployed. Unfortunately, some unemployed persons in this situation have been refused access to the education system owing to budget cuts. However, the government has recently decided that his policy should be reversed so that all persons seeking to complete their secondary education will have access to the education system to do so.

Over the long run, increasing educational attainment will be an important factor in avoiding an increase in structural unemployment as more highly educated persons have a lower risk of being unemployed. In Iceland between 2000 and 2009, workers with a tertiary education had unemployment rates 4 percentage points below workers with only a primary education. While the average level of educational attainment in Iceland is low compared with the OECD average, there has been considerable progress in raising secondary and tertiary completion rates in the past 10 years. When graduation outside of the typical age range is taken into consideration, completion rates are now on the high side of the OECD average.

Box 6. **Summary of recommendations for fostering the return to work**

- Guarantee access to the traditional education system for those attempting to re-enter to complete their secondary education.
- In consultation with organisations representing the interests of employers and labour, better align job skills training programmes with the needs of the labour market.
- Expand internship opportunities as conditions permit.
- As the labour market improves, the temporary extension of unemployment benefit duration to four years should be phased out.

Promoting long-run growth

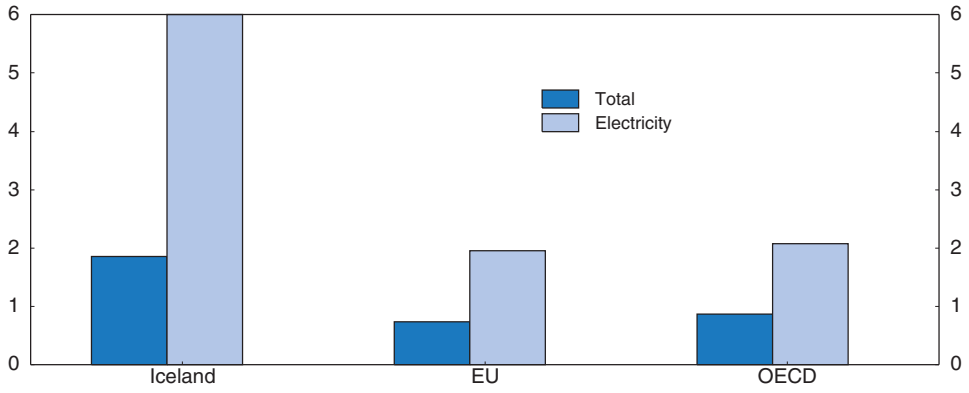
Energy resources are to be developed subject to environmental constraints

Iceland has large amounts of low-cost geothermal and hydroelectric energy and considerable scope to develop it further, which could provide a significant boost to long-run economic growth. However, doing so is subject to considerable legal and environmental constraints. Legal barriers to entry for foreign direct investment are quite high, particularly in the electricity production industry. Around 90% of the resources used in power production are owned by national or sub-national governments, and an OECD ranking puts Iceland as one of the least open member countries to FDI (Figure 10). In response, there are plans to revise the FDI law to clarify the authorities' scope for action, reducing uncertainty, and to introduce a silence (after 60-80 days) is consent rule. Geothermal and particularly hydroelectric power

raise considerable environmental concerns, which must be dealt with on a project-by-project basis. There has been a tendency to deliver environmental reports so late that promoters of a project are no longer interested. To expedite environmental approval, the master plan for Iceland power plants is to be updated to clarify where environmental barriers, could preclude plant development, although the relevant legislation has been held up in Parliament for three years.

Figure 10. **Barriers to FDI are high, particularly in electricity, 2006**[1]

Index scale of 0-6 from least to most restrictive



1. The FDI regulation index looks only at statutory restrictions and does not assess the manner in which they are implemented.

Source: OECD, *Going for Growth* (2011).

StatLink http://dx.doi.org/10.1787/888932445581

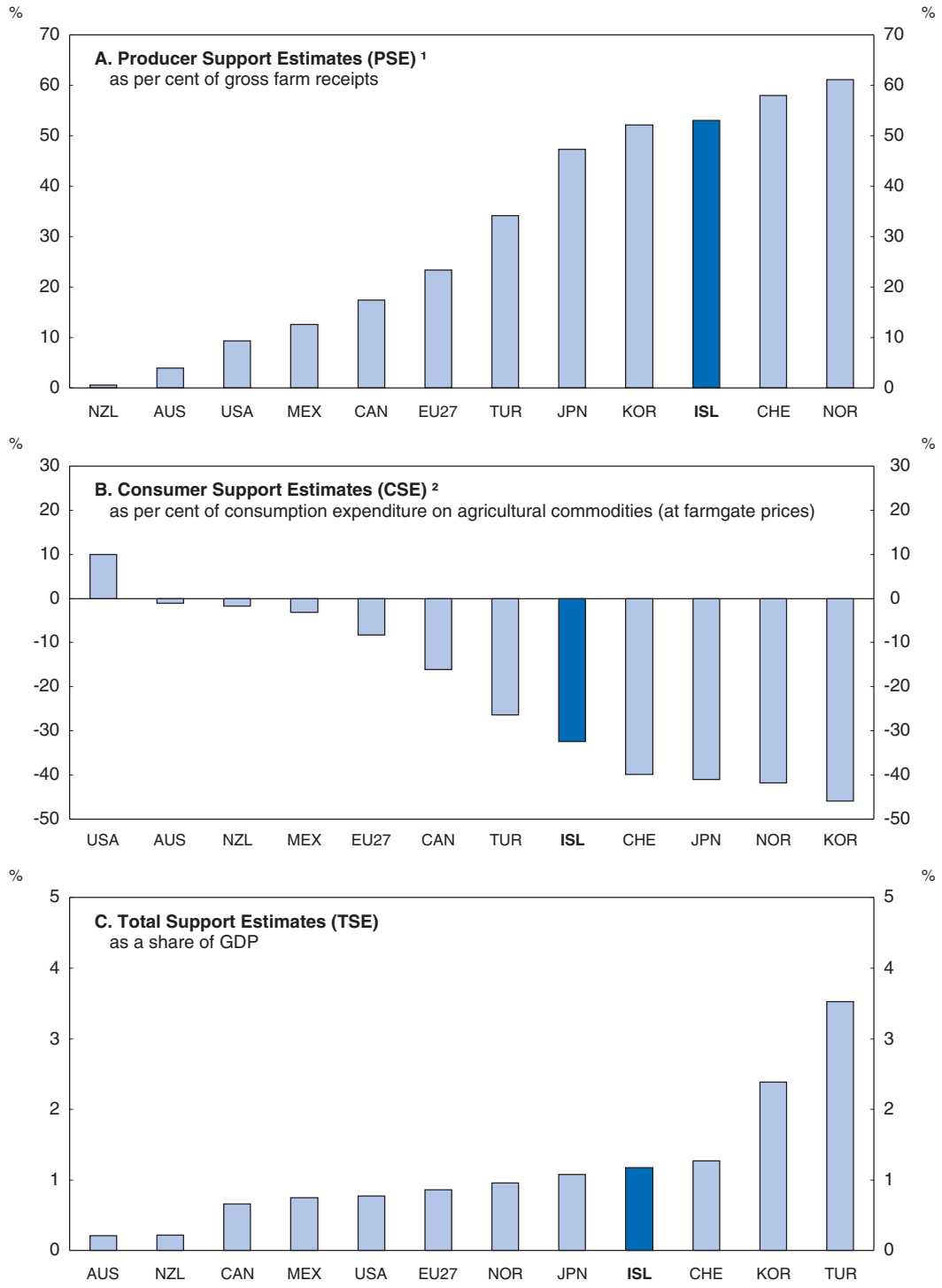
Producer support to agriculture should be reduced

Agricultural protection in Iceland, as measured by producer support estimates, is double the EU level and higher than in most other OECD countries (Figure 11). Farmers derive slightly more revenue from agricultural support measures than from output, valued at global prices. The implicit tax on consumers from agricultural price policies is estimated to be 33%, compared with 8% in the EU. Overall, the estimate of the total costs of support is estimated to be 1.2% of GDP.

The high support levels place an additional burden on consumers and taxpayers and weigh on productivity. They are also incompatible with EU accession. *The government should reduce agricultural support by abolishing quotas, tariffs and excise duties on agricultural products, and reducing other forms of producer support*. This would result in price signals that would encourage the transfer of resources from the agricultural sector to other sectors in which Iceland has a greater comparative advantage, thereby increasing GDP per capita. Food prices would be lower as would budget transfers to farmers.

Figure 11. **Agricultural protection is high in Iceland**

Average 2007-09



1. The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers (including support in the denominator).
2. The CSE percentage measures the implicit tax (or subsidy if CSE is positive) placed on consumers by agricultural price policies.

Source: OECD, *Agricultural Policies in OECD Countries 2010: At a Glance*.

StatLink http://dx.doi.org/10.1787/888932445600

Box 7. **Summary of recommendations for structural reforms to promote long-run growth**

- Continue to develop energy resources subject to environmental concerns.
- Reduce support to agriculture, at least to EU levels.

Ensuring a sustainable and efficient fishery

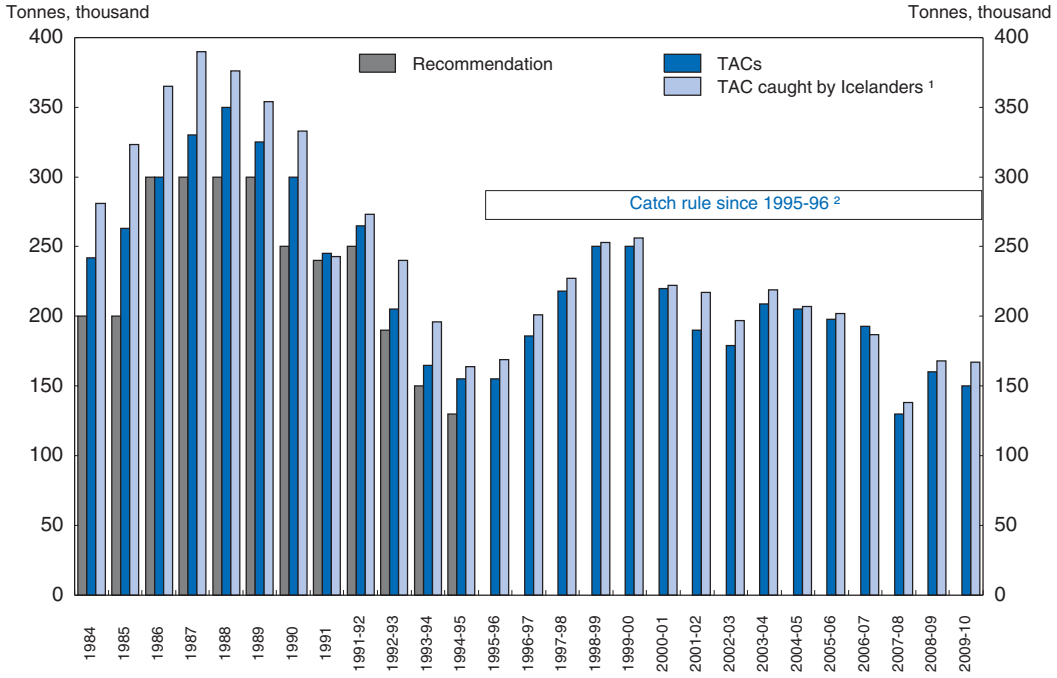
Iceland has managed its local fish stocks, *i.e.* stocks that are not shared with other countries, in a sustainable and profitable way. This success has been achieved through setting Total Allowable Catches (TACs) based on scientifically based recommendations of what is biologically sustainable and the Individual Transferable Quota (ITQ) system, which is a specific type of Rights Based Management (RBM) regime. However, the efficiency of the system could be threatened by potential policy responses to the perceived unfairness of quotas initially having been given away and being transferable. It is also important that Iceland maintain the economic efficiency of the fisheries management system in the possible accession to the European Union.

Scientifically-based TACs and the ITQ system are the foundations of Iceland's successful fisheries management

The cornerstone of the Icelandic fisheries management system is limits to the catch of each species – the Total Allowable Catch (TAC). The TAC for each fishing year is decided by the Minister of Fisheries based on scientifically based recommendations from the Marine Resource Institute (MRI). For cod, the most important species, there has been no divergence between the MRI's scientific advice and the minister's decision on the TACs, which is critical for sustainable fisheries management (Figure 12). Catches, however, have slightly exceeded TACs mainly owing to special concessions primarily aimed at supporting labour-intensive fishing practices as well as catches of research vessels and economic incentives to counter discards. For mackerel stocks, which are not the focus of this study as they are shared with other countries and hence not fully controlled by the Icelandic fisheries management system, quotas set by the EU, Faroe Islands, Iceland, Norway and the Russian Federation have not been compatible with the International Council for the Exploration of the Seas' (ICES) scientific advice on sustainable catches.

The other building block of fisheries management in Iceland is the Individual Transferable Quota (ITQ) system, which was introduced in 1984 for the cod fishery and subsequently applied to other species. Under this system, each fishing entity has a right to a certain percentage of the TAC in various species. These quotas are to a large extent tradable – quota share (permanent quota) can be sold and annual catch quota can be transferred between vessels, with some limitations. Apart from solving the commons problem associated with open access fisheries, a major advantage of ITQs over simply setting allowable catches annually is that quota holders have a strong interest in the fisheries resource being exploited in a biologically sustainable way – this ensures that the quotas continue to be valuable. The resulting political pressure to limit TACs contrasts with that in many other fisheries management systems, where individual industry participants have no incentive to restrain TACs as there is no guarantee that they will profit from the future increase in fish

Figure 12. **Recommendation, Total Allowable Catches (TACs) and actual catches of cod**



1. All catches must be landed. Fishing by foreign fleets is negligible.
2. A harvest control rule has been in place since 1995-96. It specifies the percentage of the biomass that may be caught.

Source: Marine Resource Institute and Fisheries Directorate.

StatLink http://dx.doi.org/10.1787/888932445619

stocks. Another advantage is that the tradability of quotas makes it possible for less efficient companies to exit the fishery by selling their quotas. It also gives fishing firms strong incentives to monitor each other, which strengthens enforcement. This system has succeeded in keeping actual catches close to TACs, whereas the controls used from 1976 to 1983 failed owing to the substitutability of inputs (OECD, 2006). The success in keeping catches close to the recommended TACs is also attributable to an efficient monitoring and enforcement system.

Since the introduction of the ITQ system, Iceland's fishing industry has become much more efficient, increasing the value of the resource rent and hence of quotas. Recent estimates of the net resource rent amount to ISK 14-34 billion per year (0.9-2.3% of 2009 GDP) (Kristofersson, 2010 and Steinsson, 2010). This is in line with the experiences of other rights based management systems (see Arnason, 2002).

Resource rents could be increased by restricting fishing effort to below the level compatible with biological sustainability

Keeping TACs close to scientific recommendations may guarantee biological sustainability and yield a higher fisheries-resource rent than at higher TACs, but does not maximise the value of the rent, which is the most economically efficient outcome. Due to increasing marginal costs of fishing and the self-renewable nature of the fish stocks, setting lower TACs would increase net rent from the fishery. Estimates from Australia point to

substantial stock effects (Kompas, *et al.*, 2010), where stocks should be 9-26% bigger than the level that produces maximum sustainable catches. The harvest control rule for cod takes into account economic aspects and therefore partly addresses this for the cod stock, which is the most important one in economic terms.

For Iceland, Arnason (2011) estimates that rent-maximising TACs could increase the rent in the important cod fishery almost three-fold, from USD 240 million (in 2005) to around USD 667 million annually. In view of these potential gains, *scientists and policymakers in Iceland should aim to set TACs at levels that maximise the resource rent*. In practice, this would mean that TACs should be set below, not above, the levels specified by the MRI. In the longer run, research work might help to estimate more precisely the rent-maximising catch. *Moreover, the government should increase the special fisheries resource rent tax to capture all of this estimated increase in rent*. This should not affect the value of ITQs as this gain in fisheries rents has not been anticipated and hence, has not been capitalised into quota prices. It should be borne in mind that these economic gains could not be realised quickly as stocks would have to build and that there would be transition costs.

Nothing can be done now to correct the perceived unfairness of the initial free allocation of quotas

Despite the relatively good economic performance of the ITQ system, it has been strongly criticised. One concern is that the initial allocation of quotas was based on fishing boats' catch history, instead of being auctioned, for example. It should be kept in mind that when the quotas were initially allocated the right to fish was limited, as this was a move from an open access system. However, this initial distribution is widely perceived to have been unfair as the resource rent from this common resource accrued to those with catch history rather than the public. From an economic viewpoint this is water under the bridge. The only potential solution to this problem is to identify who received free allocations of ITQs and to levy a one-off tax on them equal to the market value of the ITQs at the time they were allocated, plus interest, which is impracticable. Revoking current quotas, most of which have been bought at market prices, or reducing their value by increasing the fisheries resource rent tax beyond the level required to cover the costs of running the fisheries management system, would not correct the perceived unfairness of the original distribution of quotas but would instead create a new injustice.

The special resource rent tax should be increased but not by so much as to undermine the ITQ system

Nevertheless, increasing the resource-rent tax beyond the cost recovery level would be attractive as a means of reducing the deadweight costs of taxation (in addition to the increase suggested above). From the point of view of economic efficiency, a resource rent tax is in principle the best tax as it does not distort economic decisions and hence has no excess burden (i.e. no costs beyond the amount of money raised). Increasing this tax would make room for reductions in other taxes that have excess burdens, increasing economic efficiency and hence national income. These benefits, however, would need to be weighed against the costs of progressively reducing the value of quotas (which capitalise expected resource rents) and hence of incentives to lobby for lower TACs and to monitor other

fishermen and of reducing the financial viability of fishing enterprises. This suggests that *the special fisheries resource tax should be increased from the current level, which only more or less covers the operating costs of the fisheries management system, but that the increase should not go so far as to undermine the political and monitoring benefits of the ITQ system or to jeopardise the financial viability fishing enterprises.* If the increase in the special resource rent tax succeeds in creating a political consensus for the ITQ system, which has been lacking since its creation, the fishing industry would be compensated to some extent by increased certainty over its property rights.

The fisheries management system should not be undermined in the pursuit of social objectives

One major advantage of the ITQ system is that it encourages rationalisation of the industry and thus increased efficiency. Following the introduction of ITQs, the overcapacity of the fishing fleet was reduced by vessels selling out their quotas. More efficient users were able to buy out the quotas of less efficient users, increasing industry efficiency. The downside has been that quotas have often been sold from regions that are highly dependent on the fishing industry for their survival and lack other employment opportunities.

In order to secure livelihoods in towns and regions that have been hit by the effects of rationalisation of the industry, the government has issued specific quotas to such regions, and introduced a special coastal fishery where small boat owners are subject to strict input and output restrictions. The coastal fishery is highly inefficient. Many of these fishermen had previously sold their quotas and have thus been able to re-enter the fishery. These measures undermine the sustainability and efficiency of the fishing industry, create free-rider problems and reduce the transparency of the system. Such measures, together with not issuing quotas for certain species, have effectively confiscated a part of the value of ITQs. *The government should be cautious in making amendments to the Fisheries Act that weaken the ITQ system by authorising such measures.*

Iceland is negotiating to maintain the key features of its fisheries management system in its EU accession negotiations

Given the economic and political significance of the fishing industry, the special conditions that Iceland is able to negotiate for the sector will have an important bearing on whether joining the EU is attractive to Icelanders or not. The Icelandic authorities plan to negotiate to maintain the key features of Iceland's fisheries management system that underpin efficiency and sustainability – the right to set TACs nationally based on scientific advice and the rights based management system (ITQs) – as well as foreign ownership restrictions on ITQs. Several important fisheries in Europe are already managed using ITQs. Those systems are based on the principle of relative stability, which means that national TACs can be determined based on historical catch levels. Countries then have the flexibility to manage their fisheries according to their national legislation, as long as it does not circumvent the Common Fisheries Policy (CFP) general framework.

Provided that the ITQ system can continue to be enforced, removing the restriction on foreign ownership of ITQs should not necessarily pose a major problem for industry efficiency, although it is strongly opposed by many Icelanders. Given that foreign fishing

technology is similar to that in Iceland, it is unlikely that removing the ownership restrictions would have a significant effect on the value of ITQs. It is, however, possible that the industry, and especially processing facilities could become increasingly foreign owned and relocated, which could lead to problems during a transition period while labour and capital were put to different uses. This suggests that it would be helpful to have a transition period for the removal of restrictions on foreign ownership of ITQs to reduce adjustment costs.

Reducing the Icelandic fishing industry's GHG emissions

Iceland has adopted ambitious targets for reducing GHG emissions, approximately one quarter of which come from the fishing fleet. There are virtually no fuel subsidies for the Icelandic fishing fleet, although vessels are exempt from special levies on fuel for vehicles earmarked for road construction and maintenance. The fleet is subject to the carbon tax that was introduced in 2010 (see above).

With rising oil prices, Icelandic fishing firms have increasingly concentrated on fuel efficiency and the possibility of using non-fossil fuels. Fuel consumption of the fishing fleet has been steadily decreasing over the last few years and according to forecasts it may further decrease by 10% by 2050 (Orkuspárnefnd, 2009). However, faced with higher oil prices, vessel owners have also replaced standard vessel fuel with crude oil, which has higher GHG emissions per energy unit. The carbon tax should roll back this effect by raising the price of crude oil relative to standard vessel fuel.

Box 8. **Summary of recommendations for the fisheries sector**

- TACs should be determined at levels that maximize the sustainable fisheries resource rent and the government should raise the special fisheries resource rent tax to ensure that it receives this increase in resource rent.
- The government should also raise the special fisheries resource rent tax to take a larger share of current rent, which would make fiscal room for a reduction in other taxes which have higher economic costs (*i.e.* excess burdens). Such an increase should not, however, go so far as to undermine the ITQ system.
- The government should be cautious in making amendments to the Fisheries Act that weaken the ITQ system by authorising the issuance of specific quotas to certain regions and the introduction of a special coastal fishery for small boat owners.

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ANNEX A1

Progress in structural reform

Past recommendations	Actions taken and current assessment
A. FINANCIAL MARKETS	
Charge the Housing Financing Fund (HFF) a fee reflecting the cost of the government guarantee.	No action. In addition to charging a fee to reflect the cost of the government guarantee, the government should increase the HFF's capital adequacy ratio to the levels applying to other financial institutions and subject it to prudential regulation and supervision by the Financial Supervisory Authority (FME).
For progress on financial market reform recommendations in the 2009 *OECD Economic Survey of Iceland*, see Box 1.2 of Chapter 1.	
B. MONETARY POLICY	
Keep capital controls in place until they can be safely removed. Until then focus monetary policy on exchange rate stability.	Capital controls currently remain in place. The government released a proposal in March 2011 outlining the phased removal of capital controls over a lengthy period. The official exchange rate has been roughly stable with a significantly lower offshore exchange rate.
If the EU application is successfully completed, seek to become a member of the euro area as soon as feasible.	Negotiations for EU membership are in progress.
Once capital controls have been lifted, a suitability modified inflation-targeting framework can act as a nominal anchor for monetary policy. Shift to targeting the harmonized CPI, which will be the criterion for euro-area entry.	The CBI has released a plan for a modified inflation targeting framework after the end of the IMF programme. There has been some discussion of switching to the harmonized CPI, but, for now, the CBI continues to focus on the non-harmonized headline CPI.
C. FISCAL POLICY	
Reform tax system over time to increase revenues in a growth friendly way by widening the tax base, imposing corrective taxes and closing loopholes.	Environmental and resource taxes have been increased.
In the near-term halt non-essential public infrastructure projects and impose a freeze, or cut, on nominal wages in public sector.	There have been severe cuts in public investment and wages in the public sector have been cut.
Adopt a fiscal framework emphasising spending control and medium-term sustainability. Strengthen the "frame budgeting" process and tighten budget execution, limiting the use of supplementary budgets. Consider the introduction of multi-year budget plans with spending limits made binding in nominal terms.	The government has strengthened its fiscal framework by making its Medium Term Outlook (MTO) projections targets, adopted a two-stage budget approval process in which Parliament first approves top-down budgets for ministries and subsequently approves the appropriation of funds for individual spending categories and projects, imposed limits on and greater scrutiny of carryovers, no longer permits drawing on future appropriations, and has reduced earmarking. The government should set debt reduction targets and adopt budget balance rules consistent with them.
Remove many of the tax cuts implemented over the boom years.	This has been done. The tax-to-GDP ratio is gradually returning to the average value before these tax cuts.
The planned implementation of fiscal rules for municipalities could help ensure the achievement of national spending objectives. Nominal ceilings should be set for a specific multi-year period, rather than over an undefined business cycle. Reduce the cyclicality of local revenues in order to smooth the path of local expenditures over the business cycle.	The bill before Parliament would set a three-year balanced budget rule for local governments and a ceiling on the ratio of debt to tax revenues.

Past recommendations	Actions taken and current assessment
D. EDUCATIONAL AND TRAINING	
Focus on teacher quality rather than quantity and increase class size to reduce cost pressures. Increase the focus of teaching on sciences and languages.	In 2008 legislation was passed to tighten teacher qualification requirements in pre-schools, compulsory schools, and upper education schools. The share of teachers who are licensed continues to increase.
E. PRODUCT MARKET COMPETITION	
Consider whether divestiture of the National Power Company's generation activities would help create a level playing field in power generation by avoiding cost-of-capital differentials between the incumbent and entrants.	No action.
Reduce agricultural support, especially in the area of policies that provide incentives to increase production.	Agricultural support costs have declined, but remain high. (See assessment and recommendations in this report.)
Reduce the remaining ownership restrictions, notably in the energy and fisheries sectors.	No action.
F. ENVIRONMENT	
Make explicit use of cost-benefit analysis to improve policy effectiveness and coherence, especially in deciding on the merits of major power-intensive investments.	No action.

Chapter 1

Restoring the financial sector to health

Iceland is making good progress in establishing the conditions for a return to normal financial intermediation services, which is vital for sustained economic growth, following the collapse of almost its entire financial system in late 2008-early 2009. Financial institutions that failed have been resolved, with the most important resolution entailing the creation and capitalization of new banks out of the three main banks that failed in October 2008. While progress in restructuring non-performing loans to the non-financial private sector has been slow, the government and the main financial institutions have recently agreed measures to speed up the process. Legislation has been passed to rectify the most important weaknesses in prudential regulation and supervision exposed by the crisis and further reforms are planned to strengthen it. Steps have been taken to improve co-operation between the Financial Supervisory Authority (FME) and the Central Bank of Iceland (CBI) so that macro-prudential supervision can be made more effective, although a merger of the two institutions could facilitate the implementation of effective macro-prudential supervision. Deposit guarantee arrangements are being reformed to comply with anticipated EU requirements, which will result in better guarantees for depositors and reduced incentives for risk taking by covered financial institutions, although moral hazard could be further reduced by the establishment of statutory authority to intervene at an early stage in failing financial institutions' operations.

Iceland experienced one of the most severe financial crises ever when almost its entire financial system collapsed in the wake of the global financial crisis. Many of its largest companies were insolvent and liquidation was the only solution, precipitating solvency problems at the main banks, while many other companies and individuals proved unlikely to be able to repay loans without debt restructuring. The government intervened quickly to close down failed financial institutions and reconstruct new, well capitalised institutions. It has supported private-sector debt restructuring and begun the process of reforming prudential regulation and supervision and deposit guarantee arrangements to reduce the risk of such a crisis recurring. These steps, which are vital for recovering from the financial crisis, are discussed in the remainder of this chapter.

Iceland's main banks pursued risky strategies that led to their downfall

Local investor groups gained control of Iceland's three main banks following their privatisation from the late 1990s to 2003. The new owners of the banks set them on an aggressive foreign expansion path. Their assets grew quickly, from less than twice GDP in 2003 to almost 11 times GDP in the third quarter of 2008, just before their demise. A key element of this strategy was to borrow in foreign capital markets to finance loans to the banks' owners or related parties, who in turn were acquiring equity stakes in foreign firms and foreign commercial real estate. This strategy was very profitable while global interest rates were low and asset prices were rising but resulted in large losses when risk premiums started to rise and asset prices to fall in 2007.

Icelandic banks started to have considerable difficulties accessing wholesale capital markets, on which they were heavily reliant, 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 EEA, 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.

When the global financial crisis took a turn for the worse in early 2008, Credit Default Swap (CDS) rates on Icelandic banks' debt soared to 800-1 000 basis points, effectively excluding them from wholesale capital markets. As the banks all had large amounts of debt maturing in 2009-11, their rollover risk had become acute. Some of them, especially Landsbanki, turned to retail deposit markets for fresh funding, but this was more than offset by outflows of wholesale funding. All of the banks stepped up collateralised borrowing from the Central Bank of Iceland (CBI) and, primarily through subsidiaries in Luxembourg, from the European Central Bank (ECB), largely using claims on other Iceland banks as collateral. When the banks failed, the CBI and the ECB were holding EUR 2 billion and EUR 4.5 billion of collateralised claims on them, inflicting substantial losses on both institutions (SIC, 2010).

Following the collapse of Lehman Brothers in mid-September 2008, global financial markets deteriorated drastically. The sale of the subsidiary that Glitnir had planned to use to finance the repayment of a bond maturing in October 2008 fell through and, with no other private funding possible, the bank was facing default. The value of Glitnir shares crashed, exposing Landbanki to large losses and probable failure as it had accepted large amounts of Glitnir shares as collateral for loans extended to Glitnir's owners.

Parliament passed the Emergency Act on 6 October 2008, authorising the FME to intervene in the banks' operations and take them over. The next day, the FME took control of Landsbanki and Glitnir. On the following day, the UK authorities obtained a court order to place Kaupthing's subsidiary Kaupthing Singer Friedland into administration, effectively taking Kaupthing out of business. The FME took control of Kaupthing on the following day. The failure of these banks, which accounted for 85% of Iceland's financial system, is estimated to have inflicted losses on foreign parties of at least ISK 7 000 billion (EUR 41 billion at the crisis exchange rate of EUR 1 = ISK 170) (Sigfússon [Minister of Finance], 2010).

Financial sector restructuring has been achieved in a way that minimises fiscal costs and strengthens market discipline

The financial sector has been restructured

New banks were created out of the three main old banks and were subsequently capitalised

In the days following the passage of the Emergency Act, the government created new banks by transferring the old banks' domestic deposits and assets (written down by 60%) booked through domestic branches, and placed the old banks in moratorium under the control of Resolution Committees. Creditors of the old banks were to be compensated for the value of assets in excess of liabilities transferred to the new banks. The Emergency Act also modified creditor priority status by making depositors of the old banks priority creditors. In addition, the government announced a blanket guarantee of domestic deposits to head off the risk of a bank run.

This unusual special resolution regime – a good bank-bad bank split is more common – was adopted to continue domestic banking services, which necessitated protec3ting domestic depositors from losses without transferring them to the government; the old banks did not all have enough (written down) assets, let alone enough good assets, to cover to cover all deposits. The downside is that the new banks are a mixture of good and bad banks. Consequently, they faced the challenge of restructuring a substantial portfolio of non-performing loans (NPL), delaying a return to normal financial intermediation services. Moreover, until an agreement was reached with the creditors of the old banks on compensation instruments, management of the new banks had neither a mandate for private-sector debt restructuring from the as yet unknown owners of the new banks, nor information about the amount of capital available to support debt restructuring. Reaching an agreement on compensation instruments with the owners of the old banks, and hence on the capitalisation of the new banks, was particularly difficult owing to uncertainty about the value of assets transferred to the new banks.

Agreements were reached with the creditors of each of the old banks by the end of 2009 on compensation instruments for the net assets transferred to the new banks, enabling the new banks to be capitalised. These agreements entailed the creditors of two

of the old banks (Glitnir banki and Kaupthing Bank) accepting majority equity stakes in the corresponding new banks (Arion banki and Íslandsbanki) and creditors of the other old bank (Landsbanki) accepting a minority equity stake in the new bank together with a 10-year bond (ISK 260 billion) issued by the new bank that could be increased by up to ISK 90 billion if a review of the value of assets transferred (it is to be completed by December 2012) shows that they are worth more than their transfer values (Table 1.1). Concomitantly, a fresh injection of capital was required to capitalise Landsbanki to the required level (see below), which the government provided, giving it a majority stake. The government also purchased subordinated debt in the two privately owned banks. For these banks, these arrangements give shareholders a strong incentive to maximise the value of the assets transferred as this increases the value of their equity stake.

Table 1.1. **The government participated in the recapitalisation of the new banks**

Bank	Total equity	State's equity	State's holding	Subordinated loans from the state	Total state financing
	ISK bn		% of total equity	ISK bn	
Arion banki	72	9	13	24	33
Íslandsbanki	65	3	5	25	28
Landsbankinn	150	122	81	0	122
Total	**287**	**135**	**–**	**49**	**184**

Source: Icelandic Ministry of Finance, 2009.

With these agreements, the new banks were capitalised to a high level on average (a risk-adjusted capital adequacy ratio (CAR) of around 16%, with a Tier 1 ratio of around 12½ per cent) by the end of 2009 (Table 1.2). The Financial Supervisory Authority (FME) set the minimum CAR at a high level (16%) by international and historical comparison in view of the high level of uncertainty about the value of the banks' loan portfolios. CARs have been increased since 2009 through retained earnings, which in turn are attributable to the upward revaluation of loan portfolios to 50% of face value on average.

Table 1.2. **Capital adequacy ratios at the new banks are high and rising**[1]

%

	31.12.2009	30.06.2010	30.09.2010
Arion banki	13.7	16.4	18.1
Íslandsbanki	19.8	21.5	17.3
Landsbankinn	15.0	16.7	22.6
Total	**15.9**	**17.8**	**n.a.**

1. The largest commercial banking groups.
Source: Commercial banks' quarterly, semi annual and annual accounts.

Savings banks have been recapitalised

The savings bank sector suffered severe damage in the financial crisis. This sector is small relative to the commercial banks (assets are only about 15% of commercial bank assets) but nevertheless plays a vital role in providing banking services to rural areas. The largest savings banks (Reykjavik Savings Bank (SPRON), Sparisjódabanki Íslands hf (SPB), Byr Savings Bank and Keflavík Savings Bank) had all discontinued operations by April 2009.

The Central Bank of Iceland (CBI) was mandated to take over savings banks' deposits with SPB and received its assets as payment, making the CBI the principal creditor of five of the savings banks. They then entered into negotiations with the government, the CBI and other creditors regarding their financial restructuring, which was concluded by the early 2011 for all of these banks except Byr. New financial companies (Byr hf. and SpKef Savings Bank) were founded to assume the activities of Byr Savings Bank and Keflavík Savings Bank, with agreements being made on compensation for the creditors of the old banks for net assets transferred to the new banks. The Icelandic government acquired a major share in the restructured banks and SpKef sparisjódur was taken over by Landsbankinn, which is mainly government owned (Table 1.3). Further operational restructuring of the savings banks is likely. All of the restructured savings banks meet the FME's minimum CAR. In all, the number of savings banks has fallen by half from 20 in 2008.

Table 1.3. **The government has a major shareholding in many banks**

End of year 2010	Public ownership %	State equity ISK bn	Subordinated loans ISK bn
Commercial banks			
Arion banki	13.0	9.9	29.5
Landsbankinn	81.3	122.0	–
Íslandsbanki	5.0	3.3	25.0
Savings banks		–	–
Sparisjóður Bolungarvik	90.9	–	–
Sparisjóður Svarfdæla	90.0	–	–
Sparisjóður Norðfjarðar	49.5	–	–
Sparisjóður Þórshafnar og nágrennis	87.8	–	–
Sparisjóður Vestmanneyja	55.3	–	–
SpKef sparisjóður	81.3	–	–

Source: Financial Management Authority.

The Housing Finance Fund (HFF) has been recapitalised

The Housing Finance Fund (HFF), which is an independent state-owned agency that is the dominant player in the housing mortgage market (it has about a 50% market share), also incurred significant losses on its loan portfolio and has had to be recapitalised (Box 1.1). The government recently injected capital (equivalent to 2.1% of GDP) into the HFF to compensate for losses and a further capital injection may be needed this year.

Box 1.1. **The Housing Finance Fund**

The Housing Finance Fund (HFF) was established in 1999, taking over all the assets and obligations of its predecessor, the State Housing Board. The HFF has a public policy mandate to promote security of tenure and equality of access to affordable housing through the granting of loans to individuals (for the purchase of private homes or for repairing older housing) and to local authorities, companies and non-governmental organisations (for the construction or acquisition of rental housing). It is not directly funded by the State, but through returns on its own equity, issuing HFF bonds and service fees from its customers.

The HFF benefits from a number of policy-based advantages not available to competitors. First, the government guarantees repayment of HFF bonds. Second, the HFF is exempt from corporate and property taxation as well as from ordinary bankruptcy laws. Third, the HFF is only required to meet a low capital adequacy ratio (a Tier 1 capital adequacy ratio of 4%).

Box 1.1. **The Housing Finance Fund** *(cont.)*

The increasing difficulties that many households have had in paying their mortgages since the financial crisis struck have necessitated substantial debt restructuring, eroding the HFF's capital. Including debt write-downs associated with the December 2010 agreement between the government and the main mortgage loan providers to reduce the value of certain mortgages to 110% of the value of the underlying property, impaired loans soared from ISK 3.4 billion (0.4% of the HFF's loan portfolio) in 2009 to ISK 38.8 billion (5.2% of the loan portfolio) in 2010.

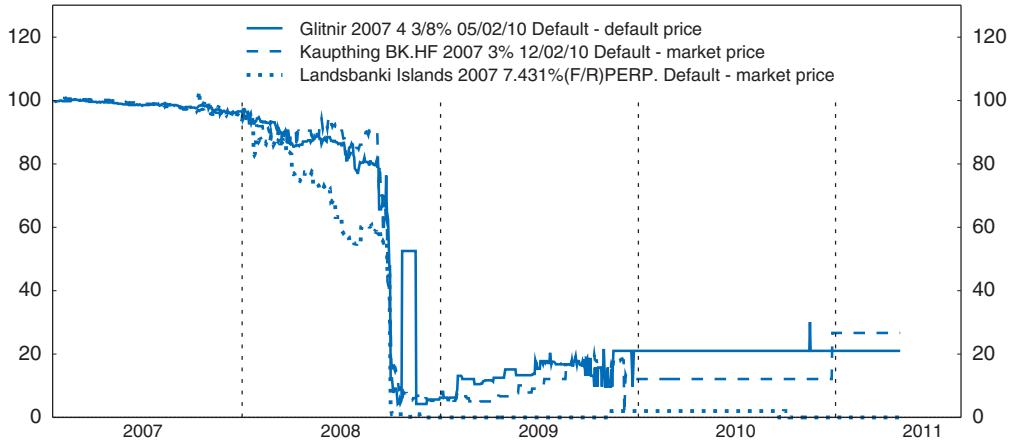
To ensure that the HFF remained solvent, the government made a capital injection of ISK 33 billion (2.1% of 2010 GDP) at the end of 2010. The European Surveillance Authority recently approved this state aid on a temporary basis subject to the Icelandic authorities submitting a detailed restructuring plan for the HFF by the end of September 2010.

The HFF's public-policy mandate – to promote security of tenure and equality of access to affordable housing – could be met more efficiently by targeting assistance with housing costs more tightly on lower-income households. They are at the greatest risk of not having access to housing that they can afford. Spreading assistance with housing costs to other households does not promote this public-policy objective as doing so increases real estate values, making it more difficult to ensure access to affordable housing for low-income households. Moreover, such assistance should not be delivered through measures that give policy-related competitive advantages to the HFF as they distort the allocation of resources between financial institutions, giving the HFF market share that more efficient institutions would otherwise have had, and expose the taxpayer to the risk of losses, as has occurred in recent years. It would be more efficient to pursue the public-policy objectives currently assigned to the HFF by subsidising all loans to provide housing for low-income households, irrespective of the financial intermediary making the loans, and phasing out the HFF's policy-related competitive advantages. This would entail charging the HFF for the value of its loan guarantee on all new HFF bonds or eliminating the guarantee on new bonds, subjecting the HFF to ordinary bankruptcy laws and to corporate and property taxation, increasing the HFF's CAR to the levels applying to other financial institutions, and subjecting it to prudential regulation and supervision by the Financial Supervisory Authority (FME).

Making bank shareholders and unsecured creditors bear losses minimised government costs and strengthened market discipline

The Icelandic authorities consistently adopted an approach of making shareholders in failing banks absorb losses first and, once capital was exhausted, exposing non-priority unsecured creditors to losses. Shareholders were wiped out in all cases and non-priority unsecured creditors took severe haircuts. When the three main banks failed, these creditors' losses were estimated to be about ISK 7 000 billion (about EUR 41 billion at the crisis exchange rate of EUR 1 = ISK 170). Although the situation has improved somewhat at two of the banks (Glitnir and Kaupthing), these creditors are expected to recoup only 20-25% of their claims judging by the prices quoted for selected bonds of these banks[1] (Figure 1.1). In the case of Landsbanki, these creditors are unlikely to recoup anything from their claims, although there is a small probability of a positive payoff if the provisions of the Emergency Act granting priority creditor status to depositors were ultimately to be ruled unconstitutional in court.

Figure 1.1. **Non-priority unsecured creditors have incurred large losses**



Source: Datastream.

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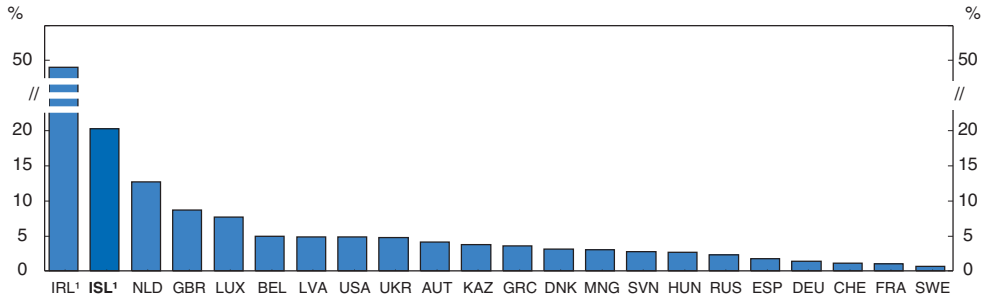
As a result of this approach, recapitalisation of the banks was achieved with only a small increase (3.8% of GDP) in government net debt. While the government injected an amount equivalent to 22% of GDP into the new banks, the fact that the banks' loan portfolios had already been massively written down to reflect expected recovery rates meant that it acquired financial assets (shares in the new banks and convertible bonds issued by them) expected to have only a somewhat lower value; indeed, as noted above, the new banks' loan portfolios were written up by 10 percentage points in 2010, pointing to the possibility that government may eventually recuperate all the money it has invested in the banks. Together with the costs of recapitalising the HFF, this brings the fiscal costs of restructuring financial institutions to 5.9% of GDP.

This is not to say, however, that the Iceland government has not incurred substantial direct fiscal costs from the banking crisis. The main costs were incurred in the months before the banks failed when the CBI lent to them against collateral of dubious quality (claims on other Icelandic banks) in what appears with hindsight to have been a strategy of gambling for resurrection; the CBI has since tightened rules on collateral eligible for loans. Losses on these loans and on bank securities held by the Treasury amounted to 13% of GDP (of which 11.1 percentage points is attributable to losses on loans made by the CBI). In addition, there have been the costs of called loan guarantees (1.5% of GDP). Adding these costs to the costs of restructuring financial institutions brings total direct fiscal costs of the recent financial crisis to about 20% of GDP so far, which is higher than in any other country except Ireland (Figure 1.2). This cost could grow by up to around 3% of GDP if the court of the European Free Trade Association finds that the Iceland government was obliged to guarantee payment of the Depositors' and Investors' Guarantee Fund's liabilities to Icesave depositors under the EU directive on deposit-guarantee schemes (Box 1.2). The high direct fiscal costs of the recent financial crisis in Ireland, where the government has guaranteed all bank creditors, reflect large government injections of fresh equity into the banks to keep them afloat, effectively transforming private debt into public debt. By early 2011, the cost of recapitalising insolvent banks in Ireland is estimated to have reached 45% of GDP. As a result, Credit Default Swap (CDS) rates on Irish government debt have increased markedly in the past year to around 700 basis points whereas CDS rates on Icelandic government debt have been stable at around 250 basis points (Figure 1.3).

Figure 1.2. **Direct fiscal costs of the financial crisis over 2007-09**

As per cent of 2009 nominal GDP



1. OECD estimates up to early 2011 as per cent of 2010 nominal GDP. For Iceland, fiscal costs comprise losses on loans to the failed banks (12.9% of GDP, of which 11.1 percentage points is attributable to losses on loans made by the CBI), the net costs of recapitalisation of failed banks (3.8% of GDP), the costs of recapitalising the HFF (2.1% of GDP) and the cost of called loan guarantees (1.5% of GDP). For Ireland, these are the estimated costs of bank recapitalisations.

Source: Laeven and Valencia (2010), "Resolution of Banking Crises: The Good, the Bad, and the Ugly", *IMF Working Paper* WP/10/146; and OECD for Iceland and Ireland.

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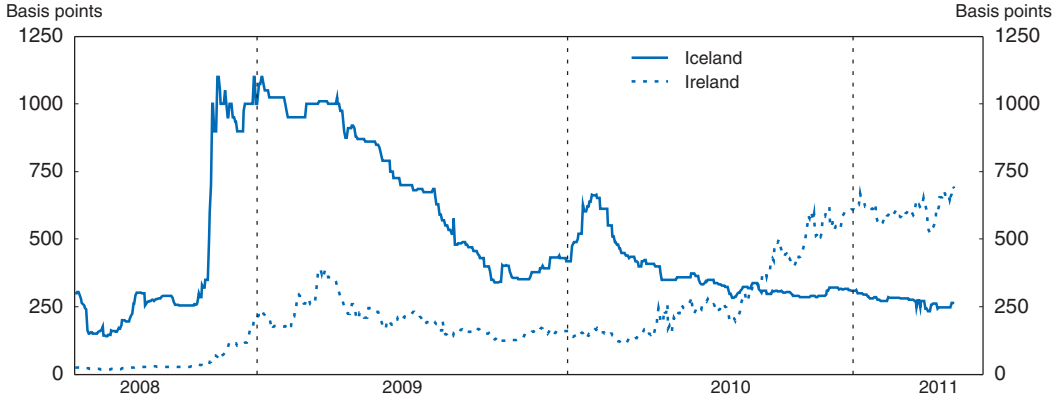
Figure 1.3. **Credit default Swap (CDS) rates on sovereign debt are now much lower in Iceland than in Ireland**[1]



1. 5-year US dollar-denominated senior unsecured bonds for both sovereign.

Source: Datastream.

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Making shareholders and non-priority unsecured creditors of failed banks absorb losses has strengthened market discipline. This will result in a less risky financial system than one in which the returns from high-risk strategies partly come from shifting losses onto the government when bad states of the world eventuate. While it is true that the scale of Iceland's banks did not give the government the option of rescuing them, the fact that losses were imposed on creditors even for small savings banks should serve as a warning to shareholders and unsecured bank creditors that a similar approach is likely to be followed in the future, even if the main commercial banks are small enough to be rescued.

Another advantage of allowing insolvent banks to fail instead of propping them up is that this accelerates necessary downsizing of their balance sheets. Assets of Iceland's credit institutions have fallen from a peak of around 11 times GDP to about 2½ times GDP now, which is closer to the ratios typical for other OECD countries but still relatively high;

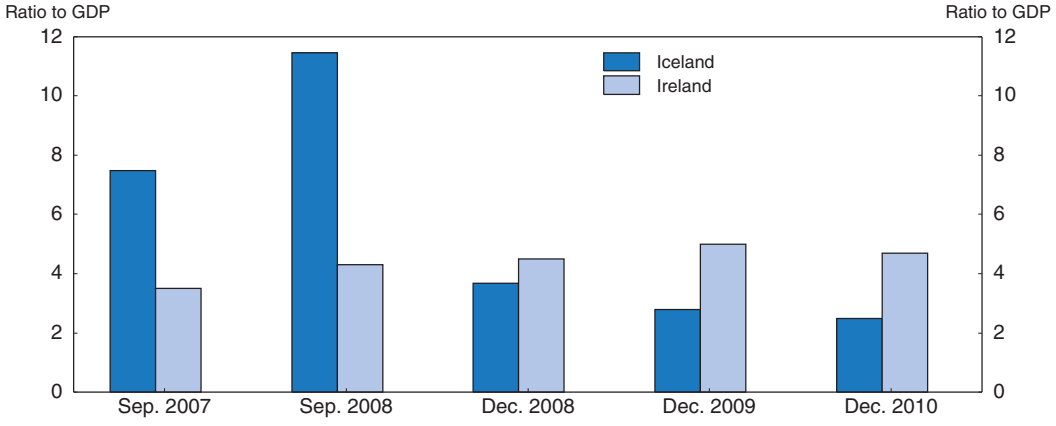
Box 1.2. **The Icesave dispute**

Iceland's Depositors' and Investors' Guarantee Fund (DIGF) was unable to honour its liabilities to depositors of Icelandic banks when they failed in October 2008. To avoid default on deposit guarantee liabilities in their countries, the UK and Netherlands governments made compensation payments to local depositors in Icesave branches of the failed Icelandic bank, Landsbanki, in place of the DIGF, and became its principal creditors in the process.

The government negotiated two agreements to reimburse the UK and Netherlands governments for these compensation payments (plus interest), but on each occasion the agreement was rejected in a referendum. Following the rejection of the second agreement in April 2011, the Iceland government's liability under the EU directive on deposit-guarantee schemes will now most likely be determined through the court of the European Free Trade Association (EFTA). This legal process is likely to take 12-18 months. If the Iceland government loses this case, the compensation payments plus interest to the UK and Netherlands governments could add up to 3% of GDP to government debt. This total is modest because of the high expected recovery rate from the assets of the Landsbanki estate (they are expected to cover about 99% of priority claims).

less progress has been made in downsizing balance sheets in Ireland, where insolvent banks were rescued, as noted above (Figure 1.4). Even so, further downsizing of Iceland's banks' balance sheets is likely as there are not enough profitable lending opportunities in the domestic market to sustain the current scale and it is not clear that these banks have a comparative advantage to expand abroad.

Figure 1.4. **Iceland has made more progress than Ireland in downsizing credit institutions' balance sheets**



Source: Central Bank of Iceland and Central Bank of Ireland.

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The main downside of what has been done is that the government may have damaged its reputation for upholding private property rights by changing the ranking of creditors in the Emergency Act of 2008 to the benefit of depositors at the expense of the other creditors. As noted above, this approach was necessary to bail out domestic depositors, and hence continue domestic banking services, as the government did not have the resources to do so

itself. Even if legal challenges to this change succeed, which is unlikely, foreign investors in future will be more wary of investing in a country that has in the past changed laws retroactively to their disadvantage. This is all the more so given that capital controls have also adversely affected foreign investors' rights to dispose of their assets as they see fit.

Steps are being taken to accelerate private-sector debt restructuring

With financial institutions restructured, the main remaining requirement for restoring normal financial intermediation services is to restructure non-performing loans (NPL), or foreclose if that results in smaller losses. This would free resources for financial intermediaries to lend to borrowers with potentially profitable projects, boosting economic growth. At the same time, firms' and households' balance sheets would be cleaned of debt that they cannot repay, providing a sounder basis for making new investments in potentially profitable projects. There have, however, been a variety of barriers to quick debt restructuring that are progressively being removed.

Progress in restructuring non-performing loans (NPL) has been slow

Most NPLs are held by the three main banks, which remain the largest financial intermediaries in Iceland. Progress in restructuring the banks' NPLs or foreclosing on them has been slow. By late 2010, NPLs had only fallen to about 40% of the book value of the banks' loan portfolios from a peak of 45% in late 2008 (Table 1.4). The small decline, despite a significant increase in the share of performing loans after restructuring, reflects the continuing inflow of other loans into the NPL category. NPL problems are most severe for large loans (defined as ISK 100 million [about EUR 660 000] or more) to corporations, which represent about two thirds of the banks' loan portfolios at book value, and to individuals (Figure 1.5). NPL problems are considerably less severe for smaller loans to SMEs and households. The proportion of business loans and large loans to individuals performing after restructuring remains low.

Table 1.4. **Progress in reducing the proportion of non-performing loans (NPL) has been slow**[1]

%

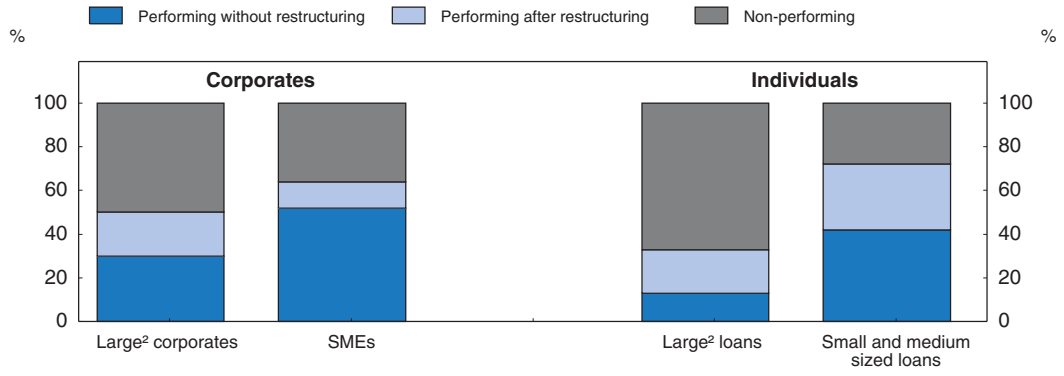
All loan categories	31.12.2008	31.12.2009	31.08.2010
Performing loans, w/o restructuring		44	35
Performing loans, after restructuring		14	26
In default by 90 days or payment unlikely	45	42	39
Total		100	100

1. The three largest commercial banking groups. Book value.
Source: Financial Supervisory Authority.

As noted above, progress in restructuring NPLs was initially constrained by the fact that bank management had neither a restructuring mandate nor adequate information about capital reserves available to support debt write-downs before the banks were capitalised at the end of 2009. Then the Supreme Court ruling in June 2010 that foreign-exchange linked-car leases in domestic currency were illegal cast doubt on the legality of all foreign-exchange linked domestic currency loans, which undermined the legal basis for restructuring them. While a subsequent Supreme Court ruling in September 2010 on the modalities of making these illegal loans legal clarified these issues, it did not resolve uncertainty about which particular loans were illegal. The complexity of

Figure 1.5. **NPL problems are most severe for large loans**

Share of total loans at book value in each category[1]



1. Status at the three large commercial banks (end of September 2010 for corporates and end of April 2010 for individuals).
2. Loans with the outstanding amount exceeding ISK 100 million (about EUR 66 0000) are defined as large loans.

Source: Central Bank of Iceland; IMF (2011), *Country Report* No. 11/16.

StatLink http://dx.doi.org/10.1787/888932445714

corporate debt restructuring, where significant cases of fraud have been identified, has also slowed the process and prevented resources from being available for SME debt restructuring. Finally, there was also political pressure to delay household debt restructuring until improved framework conditions (see below) were put in place.

In addition to these Iceland-specific reasons for slow progress, factors that have retarded private-sector debt restructuring in other countries that have experienced financial crises have also been present in Iceland. In particular, banks have had an incentive to postpone restructuring in the hope of obtaining higher recovery rates, debtors have had an incentive to hold out for larger debt write-downs, there have been co-ordination problems amongst creditors, courts have had difficulty coping with such a large increase in the bankruptcy case load, and social resistance to foreclosure has made this a costly option to implement.

The government has taken or plans to take measures to accelerate private-sector debt restructuring

To strengthen incentives for banks to restructure or liquidate NPL, the FME has set bank capital adequacy ratios (CARs) at high levels. As noted above, banks have considerable scope to restructure loans without reducing their capital as the book value of loans transferred from the old banks is currently only 50% of face value. The government rightly considers that getting the banks to relinquish this difference between book and face values, which is unlikely to be collected in any case, would go a long way towards making private-sector debt burdens more manageable. The government could strengthen incentives for banks to relinquish this difference, which would entail restructuring NPLs, by requiring capital to be held against it.

The government has passed legislation to reduce uncertainty about the extension of the Supreme Court ruling on foreign-exchange linked-domestic-currency car leases to other foreign-exchange-linked domestic currency loans. The legislation declares all such loans to households to be illegal, converts them into Icelandic króna at the exchange rate prevailing when they were made and stipulates the domestic currency interest rates to apply to the restructured debt from the date when the loan was made. The alternative of

reducing uncertainty by passing legislation that restricted the purvey of the Supreme Court ruling to the case in hand – foreign-exchange linked-domestic-currency car leases – was not retained as the government considered that this would have been unfair to households with similar, but not identical loans. This debt conversion is expected to reduce household debt by 40-50 billion króna, which represents 1.0-1.4% of credit institutions' lending and asset financing agreements. Accordingly, the impact on their capital adequacy is minor. This leaves intact, however, the uncertainty concerning the application of the Supreme Court decision to firms' foreign-exchange-linked domestic currency loans, which could have been avoided had the alternative of legislating against judicial extension of the original ruling been adopted. Such an extension occured in June 2011, when the Supreme Court ruled that the 2010 rulings apply to corporate loans as well. Stress tests show that the impact of the Supreme Court ruling on commercial banks' capital ratios is manageable. Indeed, stress tests show that banks would be able to cope even if future court rulings extend the decision to all possible foreign-exchange-linked domestic currency loans (IMF, 2010). The impact on smaller financial institutions could be greater, although the financial system as a whole would not be threatened.

Based on the findings of the Working Group of Experts established to assess household financial problems (Box 1.3) and the costs and effectiveness of various household debt-relief measures, the government and the main lending institutions announced a package of measures in December 2010 to accelerate household-debt restructuring. The main financial measures include:

- a formalised process for writing down mortgages to 110% of the value of mortgaged assets, subject to a certain ceiling and meeting criteria on debt service capacity, which should help most households with negative equity and debt service difficulties;
- enhancement of the voluntary debt mitigation framework to reduce mortgages to 100% of collateral value based on debt-service capacity to give low-income households increased access;
- preservation of the supplementary mortgage interest tax rebate in place in 2009 and 2010, but on a more progressive basis (estimated to cost ISK 2 billion per year), and the introduction of a temporary mortgage interest-rate subsidy for households with net worth below a certain limit (estimated to cost up to ISK 6 billion per year over the next two years); and
- creation of a forum to help creditors reduce their co-ordination problems.

The interest rate subsidy is to be financed by a special levy on the main lending institutions, subject to passing the requisite legislation. The debt write-downs should not affect bank capital as they can be absorbed by the difference between the face value and book value of loans. The special levy, however, would reduce bank profitability by about 10%, if implemented (IMF, 2011).

To discourage households from holding out for a better debt restructuring offer, the government and the main lenders have stated that this is the best offer that can be expected and have given households until mid-2011 to apply. Creditors have undertaken to contact all households in arrears by 1 May so that remedies can be proposed, including debt restructuring where appropriate. The Office of the Debtor's Ombudsman (DO) (which was created in August 2010 to help individual debtors with debt mitigation) is raising public awareness of the options available and has had its resources increased to cope with the greater workload.

Box 1.3. **Many households are in financial stress**

The Working Group of Experts appointed by the government to advise on solutions to household debt problems found that many households are in financial distress (Table 1.5). It found that a significant minority of households are in arrears, that up to one quarter of households with mortgages have difficulty servicing them, and 28% have negative equity, and that half of households with difficulty paying their mortgages also have negative equity. Problems are concentrated in low-income households.

Table 1.5. **Many households are under financial stress**

	% of households	% of households with mortgages
In arrears of more than 90 days		
Commercial banks		10
Housing Finance Fund		6½
Pension funds		4
Have difficulty servicing mortgages	11-18	15-24
Have negative equity	20	28
Have difficulty servicing mortgages and negative equity	6-9	8-12

Source: Report from a Working Group of Experts appointed by the Prime Minister for an assessment of household debt problems, 2010.

The government and financial institutions have also signed a non-binding agreement to accelerate debt restructuring for viable SMEs. Under the agreement, loans to these companies will be written down to the net present value (NPV) of their cash flows as estimated by the financial institution. The lender will inject equity into the company for up to three years, converting to a loan thereafter, and will control many aspects of company policy (such as on dividends and governance) during this period. To facilitate this process, the companies will not be taxed on the gain from debt write-downs and tax arrears will be restructured like other debts. All SMEs are to be reviewed by July 2011 and those that qualify are to receive a restructuring offer as envisaged in the agreement. The equity stake received by lenders in exchange for writing down debt reduces the incentive for SMEs that could repay their debts to take advantage of the system.

The government has also amended the Bankruptcy Act to allow for composition agreements, which allow a majority of creditors to agree to write-down all claims on a company in default, and to reduce the discharge period for bankrupt individuals from three to two years. Composition agreements reduce the costs of co-ordination among creditors and may result in higher recovery rates as liquidation can be avoided where that would not be in creditors' best interests. The shorter discharge period for individuals is intended to allow them to make a fresh start more quickly. Both of these measures are seen as ways to shift negotiating powers from creditors to debtors and in favour of rapid resolution of defaults.

Debt restructuring has proved to be particularly difficult for mortgages from pension funds as Boards of Trustees do not have authority to agree actions that could make pension-fund members worse off. While it would be difficult to reduce this barrier to currently required debt restructuring, the government could nevertheless act to ensure that this problem does not arise again. This could be achieved by not permitting pension funds to make mortgage loans to members. Such a restriction need not extend, however, to

loans to members that are fully secured against their own assets in the pension fund and limited to a certain percentage of those assets as readily accessible collateral would be available at all times to reimburse the loans in the event of payment delinquency. Sustaining access to such lending would maintain the attractiveness of voluntary saving through pension funds by allowing members "to borrow from themselves" while reducing the risk of loan losses for pension funds.

Micro-prudential regulation and supervision is being improved

The financial crisis exposed serious shortcomings in micro-prudential regulation and supervision in Iceland (the following points are drawn from the report of the Special Investigative Commission (SIC) of the Parliament on the causes of the collapse of the Icelandic banking system, 2010):

- Nothing was done to limit the very rapid growth of the banks (lending growth averaged 50% per year from 2004 until their collapse). As a result, the banks grew beyond both their own management capabilities and the regulatory capacity of the financial regulator (FME).
- The largest owners of all the big banks had abnormally easy access to credit at the banks they owned, apparently in their capacity as owners. The banks had exposures to their owners, connected parties and key management personnel amounting to 70% or more of each bank's capital base. In addition, these borrowers had obtained large loans from the other banks.
- The banks' equity was weak – it did not provide the intended cushion against losses for creditors – as a large proportion of the principal owners' shares in the banks had been financed by loans from the banks themselves and secured against these same shares. The banks also engaged in cross-financing the other banks' shares. In addition, the banks had entered into forward purchases of their own shares (to prop up their prices). Such capital was weak because it would evaporate when the banks encountered difficulties, as indeed occurred. In all, weak capital amounted to 70% of core capital.
- The banks relied too much on wholesale funding, which tends to be less stable than retail deposits and dried up as concerns about the banks' solvency grew.

The Act on Financial Undertakings 2010, which implements many of the recommendations made in the 2009 OECD Economic Survey of Iceland (Box 1.4), addresses most of these shortcomings. It:

- requires improved risk management and governance in banks (including stronger rules on executive pay and more stringent requirements to qualify to be a director);
- more strictly regulates large exposures and lending to related and connected parties (lending to owners, directors, and other persons and companies associated with the bank);
- strengthens fit and proper requirements for major shareholders;
- increases the discretionary powers of the FME to act;
- provides for the creation of a special register of large borrowers;
- imposes restrictions on the acceptance of capital shares in financial institutions as collateral for loans so as to protect the quality of bank equity; and
- strengthens audit requirements.

The problem of excessive reliance on wholesale funding was solved by the creation of the new banks, which are almost entirely funded by deposits. Even so, the CBI has tightened the liquidity requirements that the banks must satisfy.

Box 1.4. **Follow-up of financial sector recommendations in the 2009 *OECD Economic Survey of Iceland***

Recommendations	Actions taken and current assessment
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.	Legislation is before Parliament to reform the deposit guarantee system along the lines envisaged in the EU. The system will have a deposit guarantee ceiling of EUR 100 000 and will be better funded. Fees will be risk adjusted.
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. Government authorisation should be required for a substantial expansion of the use of discount window facilities that have the potential to threaten CBI solvency.	Stricter controls on collateral eligible for CBI loans have been implemented.
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.	This approach has not been adopted as there would not have been enough assets left in the new banks to cover deposits. The loan portfolios of the new banks have been written up since they were reconstructed at the end of 2009.
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 three main banks have not been streamlined to make them profitable. There has, however, been considerable rationalization in the (much smaller) savings bank sector.
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 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.	Bank clients have not been required to switch foreign-currency loans into króna loans where that would create a foreign-currency exposure.
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.	A co-operation agreement between the FME and the CBI was signed in early 2011. It increases information between the two agencies and sets up regular meetings between them to allow better identification of common risks across institutions. The FME has the power to use prudential tools to reduce such risks. Both the FME and CBI are now under the responsibility of the Ministry of Economic Affairs. Based on international experience, macro-prudential supervision might be more effective if the CBI and FME were merged, thereby expanding the CBI's responsibilities to include prudential regulation and supervision.
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.	The banking system is now much smaller and less complex. FME staffing is now much higher in relation to the size of the banking system.
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 (Jännäri, 2009).	These measures were implemented in the Act on Financial Undertakings 2010.

The crisis also highlighted regulators' lack of statutory authority to intervene in financial institutions' operations at an early stage to either reduce the risk of failure or to resolve a failed institution. This weakness was shared by regulators in many countries. In Iceland, resolution powers were created by the Emergency Act 2008 specifically for the problem at hand; the regulator took control of the banks within days of having passed this Act. Iceland, along with many other European countries, now faces the task of legislating permanent intervention powers. A European Commission report (EC, 2009) argues that a clearer framework for intervention is required. The Bank for International Settlements makes suggestions on how to proceed on the resolution of cross-border banking institutions (BIS, 2010). The Icelandic government will align its legislation on intervention powers with whatever is decided at the European level.

Additional regulatory and supervision improvements will be made by fully adopting the Basel III framework. Many of the Basel III programmes, such as the leverage ratio and the capital conservation buffer, have very long phase-in periods. The Icelandic authorities plan to introduce a leverage ratio and capital conservation buffer ahead of the international schedule. Accelerated adoption of the stricter definitions of capital and higher capital requirements in Basel III will help restore confidence in the Icelandic banking system. The Icelandic banks maintained high capital ratios until the onset of crisis. This suggests that banks in Iceland were adept at finessing complex regulatory requirements. Simple regulations, such as the leverage ratio in Basel III, to supplement more nuanced risk-weighted capital requirements may aid regulators to spot trouble areas and provide a more complete picture of the health of Icelandic banks. Further, the authorities should continue to treat Basel III requirements as a floor to address the small size, high concentration, and relative lack of diversification inherent in the Icelandic market. For instance, Iceland's small currency zone makes it more susceptible to sudden restrictions in international capital markets. As such, it would be prudent for Icelandic banks to maintain higher liquidity than banks from larger currency areas. Similarly, if the Icelandic banking system remains largely domestic, augmented capital requirements may assist in reducing risks inherent limited geographic diversification.

Macro-prudential regulation is to be strengthened

Although the majority of the failures in the run-up to the Icelandic financial crisis were micro-prudential in nature, the situation was made much worse by a lack of response to the high correlation of risks across the three large banks. This was a failure of macro-prudential supervision, which "focuses on the stability of the system as a whole, with the aim of limiting systemic risk and potential output loss due to financial crises" (CBI, 2010). Specifically, macro-prudential regulation failed to address the high common vulnerability of the banks to the deterioration of global markets through foreign borrowing to finance highly-leveraged Icelandic investment groups' purchases of foreign assets. Moreover, the CBI and FME failed to restrain the tripling of bank credit to the economy between 2004 and 2008.

The use of macro-prudential regulation is still in its infancy throughout the international community. However, steps have been taken to address the problems that arose in Iceland prior to the financial crisis. Collateral eligible for central bank loans was tightened at the onset of the crisis, ending future problems of cross-linked loans, and the Act of Financial Undertakings 2010 sets up a register for large borrowers. This register should provide a better view of when the financial system may be overly reliant on the

solvency of a handful of entities. Further, the co-operation agreement between the CBI and the FME signed in early 2011 increases information flow between the organisations and requires regular meetings between the two agencies to assess developing risks (Box 1.5). Improved information flow should allow better identification of common risks across institutions. When the risks have been identified, targeted tools can be used to mitigate them, such as restricting the supply of credit to the sectors most affected (*e.g.* housing), or reducing exchange rate speculation by requiring higher reserve requirement for foreign currency net short positions. Implementing the Basel III provisions for countercyclical capital ratios and forward-looking provisioning can provide tools to address an expansion of credit at an overall macroeconomic scale.

Box 1.5. **Co-operation arrangements between the CBI and the FME**

Prior to the signing of the January 2011 co-operation agreement between the CBI and the FME, an earlier co-operation agreement between the two bodies signed in October 2006 was in force. It outlined meetings between the heads of the FME and CBI at least every four months to "discuss issues concerning the state of the financial markets and the companies operating them, and exchange information which is not regularly communicated". Beyond these high level meetings "FME and Central Bank experts on indications of systemic risk in financial markets shall hold meetings at least every four months. Other expert staff… shall hold regular meetings as deemed appropriate". Further "the Central Bank and the FME shall hold regular contingency exercises, normally every other year". However, while the agreement lays out co-operation between the two entities, "the contracting parties shall respect each other's field of operation" and the aim of the agreement includes "ensuring that all duplication of tasks in the joint activities shall be kept to minimum".

The recently signed agreement between the CBI and the FME keeps many of the same structures of the old agreement but is significantly more detailed and co-operation is more formalised. As before, the heads of the FME and CBI are to meet at least three times a year, but additional experts are explicitly included in the meetings and one of the meetings is specifically devoted to "exchange information and discuss co-operation between the two institutions in a broader context". Further, topics for discussions in the other two meetings are more clearly laid out including "macroeconomic stability, market development, and the likely impact of both on the financial system"; "micro-prudential risk factors [such as]… capital ratios, liquidity ratios, leverage ratios, foreign exchange balances, … large exposures and lending to related or connect parties". Experts from both institutions are tasked to meet in advance to prepare for the meeting. Beyond the meetings of the heads of the FME and CBI, additional risk assessment groups are created covering: foreign exchange risk, funding risk, settlement and payment intermediation risk, special micro/macro risk. Risk areas between the FME and CBI are laid out and each body is obligated to prepare "a summary of the status of the risk factors that it supervises" twice a year. As before, contingency exercises are to be held. It is notable that the language on "respecting each other's field of operation" and reducing duplication has been dropped.

Maintaining a financial regulator separate from the central bank may not be the best financial structure for Iceland. With monetary and regulatory polices needing to be used to prevent future crises, White (2011) suggests that as a general rule "there should then be one agency (likely the central bank) to ensure co-ordination of the various instruments available to policymakers as they try to lean against the credit cycle". Jännäri (2009)

specifically recommends merging the CBI and the FME, or at least subjecting them to the same management structure. Merging the FME into the CBI would have a number of advantages: it would help to ensure that information is adequately shared across the different agencies; and it would create a single institution which could be held accountable for failures (Blinder, 2010). Both the sharing of information and the lack of accountability created problems in the run-up to the financial crisis in Iceland (Box 1.6). Further, combining the agencies may be the preferred approach for small countries, such as Iceland, where human capital is scarce. The only empirical study examining the performance of the central banks regulatory authority in the recent downturn found that balance sheet expansions sourced in wholesale funding were less pronounced in countries where the central bank was the primary regulator and had strong powers of supervision and resolution (Merrouche and Nier, 2010).

Nonetheless, combining supervision function within the CBI has the drawback that there could be a conflict of interest between micro-prudential policy, which might require lower interest rates to protect troubled institutions it regulates from failure, and monetary policy, which might call for higher interest rates to reduce inflation (for example from a falling currency) (Pellerin, *et al.*, 2009). Also, it is unclear that FME functions such as insurance regulation, securities regulation, and debt collection regulation, have any synergies when placed into the CBI. On the other hand, seeds of the next financial crisis can occur in areas that are not expected to be a problem *ex ante* perhaps in one of these areas. For example, in the United States, many of the most troubled institutions, such as AIG and Lehman Brothers, were outside the standard regulatory structure. Whether or not regulation of insurance, securities, and debt collection are placed within a combined systemic regulator, it is vital that the macro-prudential regulator can extend the regulatory umbrella to any financial firm that is likely to be systemically important.

A further breakdown of the macro-prudential authority was the failure to rein in the growing imbalance between the financial system's net short-term foreign currency liabilities and the foreign currency available to the CBI in their role as the lender of last resort to the banking system. This imbalance did not lead to the crisis, but it reduced the margin for action once the crisis started and gave the banks little breathing room to attempt to work out their problems. One rule of thumb (Guidotti-Greenspan) suggests central bank foreign exchange reserves should stay above (net) short-term foreign liabilities of the banking system. In Iceland they had fallen to just under 6% of that by mid-2008, from more than 100% in the early 1990s (CBI, 2010b). Such a low level invites an attack on the banking system of a country with an independent currency as it will be difficult for the central bank to provide the needed foreign currency liquidity to the system. This rule of thumb has been found to be a significant predictor of a currency crisis (Matthiasson, 2008). Holding the ratio of foreign exchange reserve to short-term liabilities in Iceland above 100% prior to the crisis would have implied enormous foreign exchange reserves relative to the size of the country, which would have been very costly to finance. The low ratio was a signal of an overly large banking system. This problem is likely significantly less severe now as the CBI has doubled its net foreign currency reserves and foreign currency liabilities of the banking system are considerably reduced with a smaller and more domestically focused banking system.[2] To reduce the risks of future liquidity runs if the banking system were once again to expand abroad, the CBI should seek to maintain enough foreign currency reserves to match the net short-term foreign currency liabilities of the banking system.

Box 1.6. **Macro-prudential regulation prior to the crisis**

Basel III rules foresee using the capital adequacy ratio in macro-prudential supervision. These and other potential macro-prudential supervision tools, such as loan-to-value limits, have traditionally been the purview of the financial regulatory agency. However, financial supervision authorities have generally not had a macroeconomic focus. This has ignited much debate on the best institutional structure for macro-prudential supervision.

Prior to the financial crisis, macro-prudential issues could be addressed through the co-operation agreement between the CBI and FME (Box 1.5) or through the broader consultative group founded in February 2006 containing representatives of the Office of the Prime Minister, Ministry of Finance, Ministry of Commerce (now Ministry of Economic Affairs), FME, and CBI. However, this consultative group was "a platform for exchange of information and dialogue" that "would not make decisions on measures" (SIC, 2010, Chapter 2). The Special Investigation Commission (SIC) found that the group was not established by law nor did any law stipulate how necessary confidential data should be communicated to the group. For these reasons, the group did not have the necessary information to adequately perform its mission. Further, the SIC found there was uncertainty regarding powers and responsibilities of the consultative group. In the investigation following the financial crisis, the different members of the consultative group "each pointed fingers at the other concerning positive obligation[s] and no one assumed responsibility".

The council setup to oversee macro-prudential policy has been used in Norway and has recently been created in the United States (the Financial Stability Oversight Council). The composition of the FSOC is roughly similar to that of the former Icelandic consultative group (though there are multiple financial regulatory agencies). A notable difference between the US model and the prior Icelandic version is that the FSOC is not merely consultative, but also votes on specific changes to macro-prudential policy; another difference is that the Federal Reserve is the micro-prudential regulator for systemically important financial institutions. The member agencies of the FSOC are then tasked with implementing the groups desired policy change. The FSOC also has its own small research support staff.

The blanket deposit guarantee will eventually be replaced by limited deposit guarantee arrangements

There are challenges in moving to a limited deposit guarantee system

The government announced a blanket guarantee of retail deposits when the new banks were created to head off a bank-run. This objective was achieved. However, a blanket guarantee entails many distortions. First, competition between financial institutions is distorted if all institutions do not benefit from the guarantee. This situation may have contributed to the demise of non-bank financial institutions (finance companies) in Iceland. Second, savers do not discriminate between banks on the basis of their riskiness, giving the most risky banks the greatest access to funds. This effect blunts the incentive for banks to address their weaknesses and control their risks. To avoid the costs of these distortions to competition, the current blanket guarantee eventually needs to be replaced by a deposit guarantee arrangement that is not subsidised and has limited coverage. Such an arrangement would need to conform to EU regulations.

There are some challenges, however, that need to be overcome to withdraw the blanket guarantee effectively. First, even if the blanket guarantee is explicitly revoked, a perception might linger that an implicit blanket guarantee remains in place. This could be alleviated by having in place arrangements for the orderly resolution of banks in distress (see above) and a strong *ex ante* funded deposit guarantee system (see below). Secondly, confidence in the health of the banking sector needs to be re-established before the transition to more limited deposit guarantee arrangements can be made, especially once capital controls are removed, as this will free depositors to invest with foreign banks.

Simply replacing the blanket deposit guarantee with an unreformed private Depositors' and Investors' Guarantee Fund (DIGF) is not an option. The future DIGF will have to conform to new EU regulations that substitute coverage ceilings for minimum amounts of compensation in full and increase *ex ante* funding. There is already a bill in Parliament to reform the DIGF along these lines. The bill introduces a coverage ceiling of EUR 100 000 per depositor per institution and does away with the compensation in full on deposits up to EUR 20 000 under the old scheme. Funding is also to be increased markedly. As became evident in the crisis, the DIGF had far less funding available than was intended, as was the case of deposit guarantee schemes in other countries where banking sectors experienced significant stress.[3] This reflected the failure of deposit guarantee fees to keep pace with the growth in banks' deposits and reliance on guarantees from the banks themselves to guarantee funding gaps.[4] The bill provides for an increase in the new DIGF's *ex ante* funding to 1.5% of covered deposits within seven years, as required by the EU. Eventually, the aim is to increase such funding to 4% of covered deposits, four times the funding ratio before the crisis and twice the funding rate in the United States, which is in line with a recent analysis of the appropriate level (2%) there (FDIC, 2010). Since the financial system in Iceland is far more concentrated than in the United States and almost all other OECD countries, a high funding ratio as proposed is appropriate. To achieve these funding levels, risk-adjusted premiums are to be assessed that would comprise a linear fee of 1% of deposits multiplied by a risk-based element (greater than 1). The move to risk-based premiums is welcome as it reduces incentives otherwise inherent in deposit guarantee arrangements for financial institutions to pursue risky strategies (*i.e.* risk-adjusted premiums reduce moral hazard).

The proposed legislation also stipulates that the government does not guarantee the DIGF's liabilities, which was not stated explicitly in the old legislation. Following through on this clause, if enacted, would be facilitated by putting in place permanent arrangements for the orderly resolution of banks in distress. More generally, such arrangements are an important complement to deposit guarantee systems as they enable the regulator to intervene in financial institutions' operations at an early stage either to reduce the risk of failure or to resolve a failed institution, reducing expected payouts from the deposit guarantee scheme. This reduces incentives for financial institutions to take advantage of deposit guarantee arrangements by adopting more risky strategies.

Concluding comments

While costly policy errors were made in the run-up to the crisis, notably in prudential regulation and supervision and in extending liquidity to the main banks against dubious collateral in their last months of operation, policy since the crisis struck has followed the rule book on how to minimise its costs. The scale of the problem was quickly assessed, insolvent institutions were closed down, shareholders were wiped out and unsecured non-priority creditors bore most remaining losses, and new properly capitalised institutions

were reconstructed. The government has also acted to reduce barriers to the restructuring of non-performing loans to the non-financial private sector, although progress to date has been slow owing to the long period needed to reconstruct the main banks and the complexity of corporate debt restructuring, where significant cases of fraud have been identified. Much progress has been made in rectifying the weaknesses in prudential regulation and supervision exposed by the crisis and further reforms to strengthen it are planned. The Depositors' and Investors' Guarantee Fund is also being reformed to comply with new EU requirements, which will result in better guarantees for depositors and reduced incentives for risk taking (i.*e.* moral hazard) by covered financial institutions, although this reform needs to be complemented by the establishment of statutory authority to intervene in failing financial institutions' operations at an early stage. All of these developments presage the restoration of normal financial intermediation services and non-financial private-sector debt burdens that are manageable, laying the foundations for sustained economic growth.

Notes

1. It should be noted, however, that these bonds were not actively traded during 2010.
2. The ratio of reserves to short-term foreign liabilities of the financial system is not able to be calculated at present. Full accounts of the banking system are not available since the fourth quarter of 2008.
3. The levels of *ex ante* funding for systemic financial crisis resolution, including the levels of existing deposit insurance arrangements, turned out to be similarly inadequate in these OECD countries. For a discussion of these funding gaps, see Schich, and Kim (2010).
4. The "Financial Services and Markets – Act No. 98/1999 on Deposit Guarantees and Investor-Compensation Scheme", Article 6, states "that the total assets of the deposit guarantee account shall amount to a minimum of 1% of the average amount of guaranteed deposits in commercial and savings banks during the preceding year". The base is relatively large, as Iceland did not make use of any of the exceptions permitted under EU legislation (such as to exclude deposits by municipalities). The reference to "average deposits over the preceding year" (effectively the average of the year-end values of the preceding two years) as the basis for calculation of funding needs meant, however, that funding tended to lag behind the development of deposits, which were growing rapidly. This Act also states that a special assessment of up to 0.15% of insured deposits would be invited should the funds fall below the minimum. If that turns out to be insufficient, all members shall submit a declaration of liability to close the gap. Such declarations were apparently given, although they may not have been worth much in the case of at least some fund members.

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Chapter 2

Securing sustainable public finances

Iceland has made considerable progress in repairing the damage to fiscal sustainability incurred in the wake of the financial crisis but much remains to be done. The demanding fiscal consolidation targets agreed with the IMF under the aegis of the IMF SBA have been met so far and the 2011 budget conforms to the programme. As fiscal consolidation under the programme was front loaded into 2010-11, the prospects of meeting the programme's remaining targets, which extend to 2013, are good. To keep fiscal policy safely on a sustainable path, fiscal consolidation will need to be sustained well beyond the horizon of the IMF SBA. To this end, the government should gradually increase budget surpluses beyond 2013. Assuming a general government budget surplus of 3% of GDP from 2015 onwards and trend growth in nominal GDP of 4% per year, general government gross debt (excluding civil servant pension liabilities) could be reduced to below 60% of GDP by around 2020. It may, however, be prudent to create greater fiscal room for manoeuvre by sustaining the debt reduction policy for longer. While the government has implemented a variety of reforms to increase the probability that fiscal consolidation plans are actually implemented, it would do well to adopt a medium-term budget balance rule that is compatible with its debt reduction objectives.

The financial crisis wreaked havoc with Iceland's public finances. Overnight, Iceland faced large budget deficits and soaring public debt mainly as a result of the deep recession into which the economy plunged. The government was obliged to embark on a major fiscal consolidation programme to bring public finances back towards a sustainable path. The programme agreed with the IMF in late 2008 has resulted in a large improvement in the underlying fiscal position, but there is still far to go to put public finances back onto a credible, sustainable path. While a variety of institutional reforms have been made to increase the probability that consolidation plans are realised, fiscal rules would bolster fiscal sustainability. This chapter discusses the progress that has been made in consolidating public finances, some future risks to sustainability and ways in which the institutional framework for fiscal policy could be further strengthened.

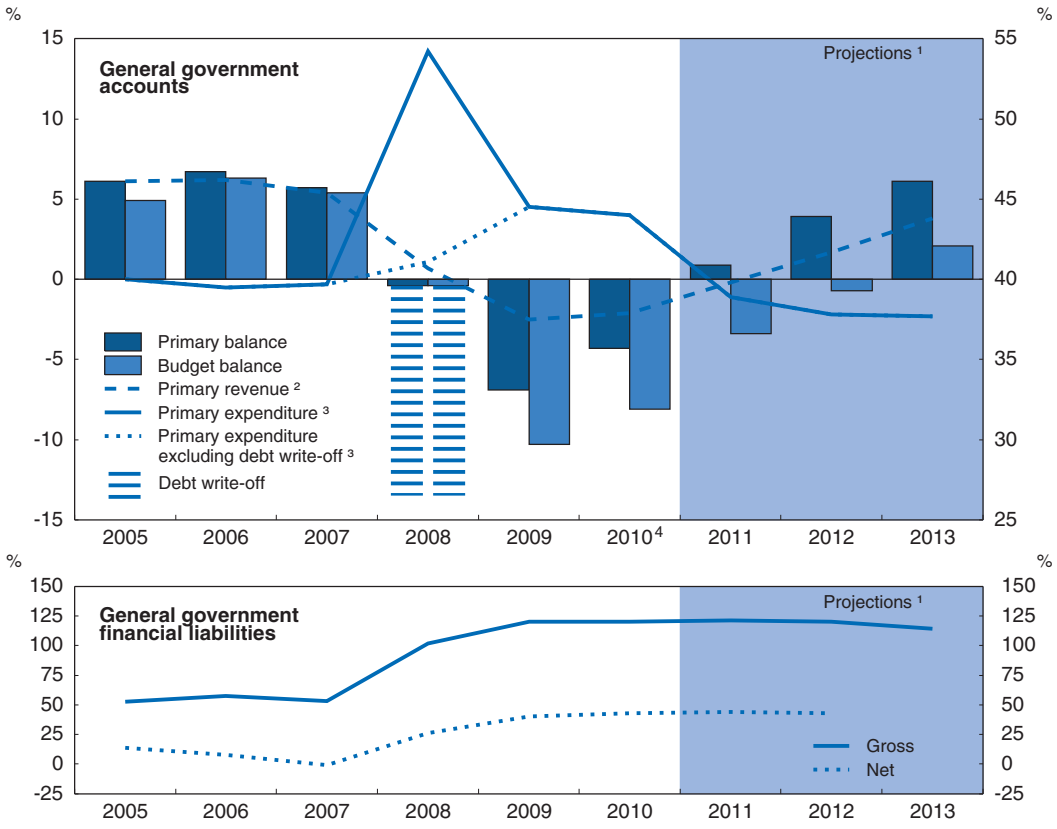
Public finances deteriorated markedly in the wake of the financial crisis

The run of budget surpluses during the boom years ended abruptly in 2008. Excluding large one-time losses on Central Bank of Iceland (CBI) lending to failed banks, the general government budget balance deteriorated by 5% of GDP in 2008 and by another 10% of GDP in 2009 (Figure 2.1). Both revenue decreases, notably for indirect taxation and income taxation, and expenditure increases, particularly for interest on public debt and unemployment benefits, contributed to the deterioration in the budget balance over the two years to 2009, although the contribution of the increase in expenditures was somewhat greater than that of the decline in revenues.

Including the debt write-off in 2008, these deficits added 23.4% of GDP to net general government debt over 2007-09, accounting for slightly more than half of the overall increase to 40.1% of GDP in 2009 (Table 2.1). Revaluation effects accounted for the rest of the increase. They had a larger impact on liabilities than on assets because more liabilities than assets are sensitive to changes in the exchange rate (notably, foreign debt), which depreciated sharply, and inflation (notably, indexed debt), which spiked up following the depreciation. The large increase in financial assets through financial account transactions, which accounts for the greater increase in gross debt than in net debt, mainly reflects the subordinated loans made to the new banks and the equity stakes acquired in them when they were capitalised in 2009 (around 20% of GDP). There was also a large increase in deposits at the CBI, where the proceeds of official loans under the IMF Stand-By Arrangement (SBA) other than from the IMF and Norway were deposited, increasing the CBI's foreign exchange reserves.

Figure 2.1. **Public finances are improving after having deteriorated markedly in the wake of financial crisis**

As per cent of GDP



1. Projections of the Ministry of Economic Affairs (2011). Gross debt projections include civil servant pension liabilities (about 20% of GDP).
2. Total revenue less property income (on the right scale).
3. Total expenditures less interest payments (on the right scale).
4. Primary expenditure and budget balances include a one-off charge of 1.5% of GDP for called loan guarantees.

Source: Statistics Iceland; Ministry of Economic Affairs, *Pre-Accession Economic Programme 2011*; and OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932445733

Over 2007-09, the direct fiscal cost of the financial crisis – 17% of GDP – accounts for less than one half of the increase in net general government debt and mainly arose from losses on the CBI loans to the banks (see Chapter 1). Since then, the direct fiscal costs of the recent financial crisis have increased owing to recapitalisation of the Housing Finance Fund (2.1% of GDP) and the calling of loan guarantees (1.5% of GDP), bringing the total to about 20% of GDP, which is higher than in any other country except Ireland (see Chapter 1). There is a possibility of further direct fiscal costs (up to around 3% of GDP) if the EFTA court finds that the Iceland government is liable for the unpaid debt of the Iceland Depositors' and Investors' Guarantee Fund to Icesave depositors.

Table 2.1. **Decomposition of the evolution of general government financial assets and liabilities over 2007-09**[1]

% GDP

	2007	Financial account transactions	Revaluation effects	Stock-flow adjustment[2]	2009
	A	+ B	+ C	+ D	= E
Financial assets	**54.3**	**26.9**	**7.9**	**–9.0**	**80.1**
Of which					
Currency and deposits	10.2	7.1	2.0	–1.7	17.6
Loans	15.0	6.5	7.5	–2.5	26.5
Shares and other equity	17.3	9.5	0.8	–2.9	24.7
Other accounts receivable	11.9	3.7	–2.4	–2.0	11.2
Financial liabilities (gross debt)	**53.3**	**50.2**	**25.4**	**–8.9**	**120.0**
Of which					
Securities other than shares	9.6	31.6	2.2	–1.6	41.8
Domestic loans	5.6	11.4	3.1	–0.9	19.2
Foreign loans	13.3	3.7	12.3	–2.2	27.1
Insurance technical reserves	20.5	0.3	7.9	–3.4	25.3
Other accounts payable	4.3	3.4	–0.4	–0.7	6.6
Net financial assets[3]	**1.0**	**–23.4**	**–17.3**	**–0.2**	**–39.9**

1. Financial liabilities data include civil servant pension liabilities (about 20% of GDP).
2. The effect of GDP growth on the debt-to-GDP ratio.
3. A negative number refers to a positive net debt position.

Source: Statistics Iceland for data; OECD calculations.

The government is implementing a demanding fiscal consolidation programme under the aegis of the IMF SBA

The goal of the programme is to restore Iceland's public finances to a sustainable path. Until recently, this was to be achieved by increasing the general government primary balance by approximately 13% of GDP between 2009 and 2013, to a surplus of 6% of GDP (Table 2.2). The increases were to be front-loaded, with about 4% of GDP per year in each of 2010 and 2011 excluding the cost of called loan guarantees in 2010 (1.5% of GDP). The increase in the primary balance up to 2011 predominantly reflects central government expenditure reductions whereas subsequent increases are mostly to be achieved through increases in revenues from cyclically low levels. Local governments are assumed to maintain a stable budget position over 2009-11 and improve their position by about 0.5% of GDP over 2012-13. The Ministry of Finance is currently re-evaluating the targets for 2013 and the required adjustment in public finances in light of the evolving economic outlook and lower debt assumption by the government than had been anticipated. The revised consolidation plan is expected to aim for smaller increases in the primary balance and overall balance – to at least 3% of GDP and to a small surplus, respectively – by 2013 than in the original plan. The speed and scale of this consolidation, even after the revision, are broadly comparable with those that occurred in other Nordic countries following their financial crises in the 1980s and 1990s and build on the experience that Iceland gained with its own (albeit smaller) consolidation in the 1990s (Figure 2.2).

The government has endeavoured to limit the impact of consolidation measures on low-income households, for example by making greater use of means testing, increasing the progressivity of personal income taxation, and focusing public sector wage cuts on high-income earners. At the same time, budget room has been made for a temporary extension of the duration of unemployment benefits from three years to four years (see Chapter 3).

Table 2.2. **General government budget plan**[1]

% GDP

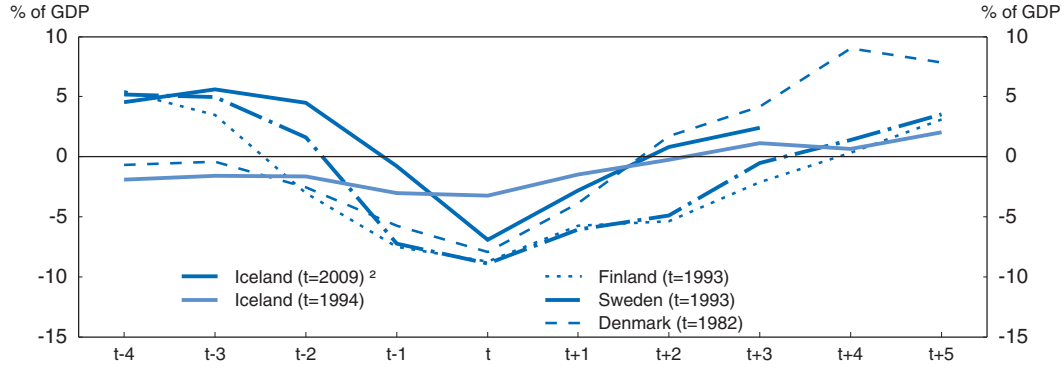
	2009	2010	2011	2012	2013
Primary revenue	**37.5**	**39.7**	**39.8**	**41.7**	**43.8**
Of which					
Total taxes	30.8	31.8	31.1	31.9	32.5
Social security contributions	3.1	4.2	4.0	4.0	4.1
Other	3.7	3.7	4.7	5.8	7.1
Primary expenditure	**44.5**	**44.0**	**38.9**	**37.8**	**37.7**
Of which					
Compensation of employees	15.0	14.6	13.0	12.1	11.8
Other collective consumption	12.5	12.3	9.9	9.1	8.7
Social transfers	8.2	7.8	7.5	6.9	6.5
Subsidies	1.9	1.8	1.6	1.5	1.4
Gross fixed capital formation	3.5	2.6	2.3	2.4	2.5
Other	3.4	4.8	4.6	5.8	6.8
Primary balance	**–6.9**	**–4.3**	**0.9**	**3.9**	**6.1**
Net lending	**–10.0**	**–7.8**	**–2.6**	**0.1**	**2.8**

1. The plan presented in Ministry of Economic Affairs (2011) has been updated with data up to 2010 since published by Statistics Iceland.

Source: Statistics Iceland for 2009 and 2010, Ministry of Economic Affairs for subsequent years.

Figure 2.2. **The fiscal consolidation programme is comparable to those in other Nordic countries following their financial crisis**

General government primary balance[1]



1. Excludes debt write-off (13.2% of GDP) in 2008 and called loan guarantees (1.5% of GDP) in 2010.
2. OECD (2011) projections for 2011 (t + 2) and 2012 (t + 3).

Source: OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932445752

The increase in the primary balance up to 2011 reflects central government fiscal consolidation measures that are somewhat more focused on expenditure reductions than revenue increases (Table 2.3). Current expenditure is being reduced by new measures to cut public administration and supervisory costs. Various transfer payments are being lowered through increased means testing. Public investment is expected to fall from an average of 1.9% of GDP over the past decade to 1.2% of GDP in 2011, and cuts have fallen mostly on road construction. This reduction, however, will not be sustained as the government has decided to embark on high-return road infrastructure projects over 2011-15 amounting to ISK 36 billion (2.3% of GDP), although financing has only been agreed to date on the smaller

Table 2.3. **Central government fiscal consolidation measures**[1]

Accrual accounting, difference from each year's baseline, ISK billion in current prices

	2009	2010	2011	Cumulative
Revenue				
Income tax and capital gains tax	10.8	3.9	7.2	21.9
Social security contributions	6.0	18.4	1.1	25.5
VAT		4.0	0.3	4.3
Excise taxes	6.5	5.5	0.8	12.8
Environment and resource taxes		4.7	2.0	6.7
Net wealth tax and inheritance tax		3.5	2.7	6.2
Prepayment of personal pension plans	5.3	–0.5	–0.9	3.9
Other	0.4	4.2	0.0	4.6
Total	**29.0**	**43.7**	**13.2**	**85.9**
% of GDP	**1.9**	**2.8**	**0.8**	**5.3**
Expenditure				
Current expenditure	–15.3	–14.0	–11.4	–38.9
Transfer payments	–9.3	–15.9	–7.8	–30.0
Investment and maintenance	–17.7	–13.9	–3.9	–31.1
Avoided wage and benefit increases	–5.5	–11.0	–5.0	–21.5
Total	**–47.8**	**–54.8**	**–28.1**	**–121.4**
% of GDP	**–3.2**	**–3.6**	**–1.7**	**–7.5**

1. These figures reflect direct measures for raising new revenue and reducing expenditures. The increase in the budget balance has been smaller than the measures because the crisis has caused revenues to fall and expenditures to rise markedly.

Source: Ministry of Finance.

of the three projects involved. Nevertheless, these projects should have a neutral impact on the longer-term sustainability of public finances as they are to be financed by user charges. Wage and benefit increases are being avoided until 2011 by freezing public sector wage rates and the reference amounts for the main benefit and grant categories. From 2012, wages of government employees are assumed to rise by 2% annually while transfer payments increase in line with inflation. The largest increases in revenue from consolidation measures are for social security contributions, income tax and excise taxes. Social security contribution rates were increased by 1.65 percentage points in mid-2009 and by a similar amount at the beginning of 2010 to cope with rapidly rising expenditure on unemployment benefits. Personal income tax revenues are being increased by reforms that make the system more progressive, notably by replacing the previous flat-rate system with three income tax brackets and by sharply increasing tax rates on capital and corporate income.[1] Excise taxes have been increased on fuels, alcohol and tobacco, partly to recover the erosion in real terms that had occurred owing to the failure to adjust them for inflation.

The targets of the consolidation programme for both 2009 and 2010 were met. The general government primary budget deficit was held to 6.9% of GDP in 2009 and cut to 2.8% of GDP (excluding the one-off cost of called loan guarantees) in 2010. The increase in revenues reflects higher taxes and social security contributions while the largest reductions in expenditures were for gross fixed capital formation, compensation of employees and social transfers.

In accordance with the consolidation programme, the 2011 central government budget is designed to achieve a primary surplus of about 1% of GDP. Consolidation measures again are more focused on the expenditure side of the budget than the revenue

side. Expenditure cuts involve, as before, a freeze on wages and benefits, some selective cuts in large expenditure items (road construction and child benefits), graded targets for contracting operational costs and subsidies with more stringent targets for general administration, supervision and services and more lenient targets for welfare services and medical insurance. The main revenue measures are an increase in capital income tax and increases in the temporary taxes on wealth, carbon emissions, electricity and hot water use that were introduced in 2010. The carbon tax and the taxes on electricity and hot water use should be made permanent as they contribute to greater economic efficiency: pricing carbon emissions is the cornerstone of a policy to reduce them at least cost; and the taxes on electricity and hot water use, which are taxes on resource rents, do not distort economic decisions, in contrast to other taxes. Moreover, the carbon tax should be increased from three quarters of the carbon price in the European Emissions Trading Scheme (ETS) to the full price to increase the level of abatement in Iceland to an efficient level and, along with the taxes on electricity and hot water use, be made permanent.

Credit default swap (CDS) rates for the Iceland government have fallen markedly as the government has implemented its demanding fiscal consolidation programme, from around 1 000 points at the height of the financial crisis to around 250 basis points currently, which is well below the levels in some peripheral euro area countries (see Chapter 1).

Consolidation efforts will need to be maintained for many years to keep fiscal policy on a sustainable path

Iceland will need to continue fiscal consolidation well beyond the horizon (2013) of the IMF SBA to bring government debt down to a level where there is no longer a significant risk of a public debt spiral developing. Ostry *et al.* (2010) estimate that there is a high probability of Iceland still being close to its debt limit in 2015, beyond which a debt spiral would develop if the fiscal policy reaction to changes in public debt were to follow the historical pattern (increases in the primary balance would not be large enough to offset the flow costs of public debt) (Box 2.1). Moreover, there is a risk that the flow cost of funding debt – *i.e.* the difference between interest rates and economic growth – could be less favourable in the future, increasing the amount of consolidation required to keep fiscal policy on a sustainable path. This cost began falling globally in the mid-1990s and reached

Box 2.1. **Fiscal space**

Fiscal space is defined as the difference between the current level of government debt as a share of GDP and the level beyond which a debt spiral would develop if the fiscal reaction to changes in public debt were to follow the historical pattern. In other words, beyond the debt limit, increases in the primary balance would not be sufficient to offset the flow cost of public debt ([debt/GDP] × [r – g]) if they conformed to the historic pattern of adjustment. To estimate fiscal space, Ostry *et al.* (2010) estimate a fiscal policy reaction function for 23 OECD countries in a panel regression with the general government primary balance to GDP as the dependent variable. The response of the primary balance varies across countries through the country fixed effect and the effects of other independent explanatory variables. This policy reaction function and estimates of the gap between interest rates and economic growth in each country are then used to calculate each country's debt limit as a share of GDP, from which the current level of debt as a share of GDP is deducted to calculate fiscal space.

Box 2.1. **Fiscal space** *(cont.)*

To take into account the uncertainty about coefficient estimates in the primary balance regression, the authors report estimates of fiscal space (*i.e.* the difference between 2015 projected debt levels and the debt limit) in terms of the probability that a country has a given amount (0, 50, or 100% of GDP) of remaining fiscal space (Table 2.4). These estimates show that there is only a 49% probability that Iceland has positive fiscal space, which qualifies Iceland for being close to its debt limit given that the authors consider that a country is close to its debt limit if the probability of positive fiscal space is less than 80-90%. For countries close to their debt limit, the authors conclude that timely fiscal consolidation that goes beyond the historical reaction to changes in public debt is needed to remain on a sustainable fiscal path and to convince markets that policy is not proceeding on a "business as usual" basis.

Table 2.4. **Estimated probability of given fiscal space**[1]

In per cent

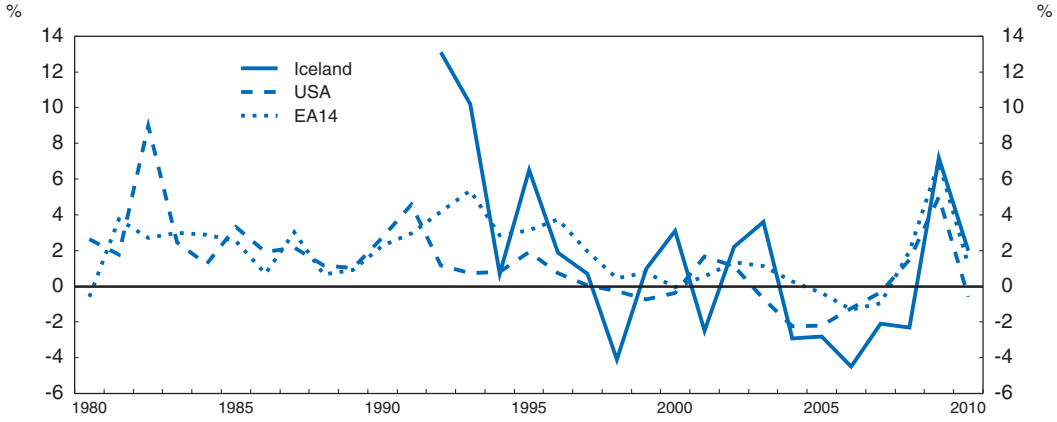
	Memorandum		Probability of a given fiscal space		
	Projected interest rate-growth rate differential[2]	General government gross debt (end 2015) % of GDP[3]	Fiscal space > 0	Fiscal space > 50 (% of GDP)	Fiscal space > 100
Australia	1.2	20.9	99.8	99.5	99.5
Austria	0.8	77.3	97.9	97.8	75.1
Belgium	2.1	99.9	95.9	89.7	2.9
Canada	0.4	71.2	92.2	92.1	70.3
Denmark	0.1	49.8	100.0	100.0	100.0
Finland	1.4	76.1	96.2	96.0	69.3
France	0.5	94.8	88.7	86.6	12.0
Germany	1.5	81.5	93.0	92.3	35.3
Greece	2.2	158.6	6.3	0.1	0.1
Iceland	**4.1**	**86.6**	**49.1**	**44.0**	**5.8**
Ireland	3.2	94.0	66.0	55.9	1.7
Israel	0.2	69.9	97.1	97.1	80.7
Italy	1.7	124.7	17.3	1.7	0.2
Japan	1.0	250.0	0.1	0.1	0.1
Korea	–2.3	26.2	100.0	100.0	100.0
Netherlands	0.6	77.4	99.3	99.2	83.1
New Zealand	2.5	36.1	93.3	93.0	92.1
Norway	–0.7	53.6	100.0	100.0	100.0
Portugal	2.2	98.4	34.4	27.1	0.4
Spain	2.6	94.4	69.9	61.0	1.6
Sweden	–0.7	37.6	99.9	99.9	99.9
United Kingdom	1.3	90.6	78.1	75.9	8.9
United States	1.6	109.7	71.8	52.2	1.2
Median	*1.3*	*81.5*	*93.0*	*92.1*	*35.3*
Mean	*1.2*	*86.1*	*75.9*	*72.2*	*45.2*

1. Fiscal space is defined as the difference between the current level of public debt (*World Economic Outlook* projections of general government gross debt in 2015 as a percentage of GDP) and the debt limit (beyond which debt dynamics become explosive) assuming that the historical pattern of fiscal adjustment to changes in public debt is maintained. The authors of this analysis (Ostry *et al.*, 2010) consider that a country is close to its estimated public debt limit if the probability of positive fiscal space is less than 80-90%. Dark and light cells indicate cases where the probability of a given minimum amount of fiscal space is less than 50%, or between 50 and 85%, respectively.
2. Difference between economic growth and long-term government bond yields (average for 2010-14) projected in the *World Economic Outlook*.
3. *World Economic Outlook* projections.

Source: Ostry *et al.* (2010), "Fiscal Space", *IMF Staff Position Note*.

low levels during the past decade (Figure 2.3). The fall in Iceland was particularly marked, as capital inflows held down interest rates in a high growth environment. Interest rates could rise relative to economic growth in coming years as global investment increases, especially in emerging market economies, and the proportion of the global population in the high-saving age group declines (Dobbs *et al.*, 2010). In addition, economic growth can be expected to weaken as population ageing reduces growth in the working-age population. At the general government gross debt-to-GDP ratio projected by the Ministry of Economic Affairs in 2013 (110% of GDP, including civil servant pension liabilities of 20% of GDP), each percentage point rise in the gap between interest rates and economic growth increases the primary balance required to stabilise the debt-to-GDP ratio by 1.1% of GDP.

Figure 2.3. **The flow cost of funding public debt fell to low levels before the financial crisis**[1]



1. The flow cost is defined as the gap between the long-term government bond yield (r) and economic growth (g).
Source: OECD, *OECD Economic Outlook Database*.

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To keep fiscal policy on a sustainable path, the government should gradually increase budget surpluses beyond 2013. Assuming a general government budget surplus of 3% of GDP from 2015 onwards and trend growth in nominal GDP of 4% per year, such a policy would reduce gross general government debt from 87% of GDP (*i.e.* excluding civil servant pension liabilities of about 20% of GDP) in 2015 to below 60% of GDP by around 2020, a faster pace of debt reduction than the minimum stipulated under the proposed revision to the Stability and Growth Pact (SGP) for countries with general government gross debt in excess of 60% of GDP (debt must be reduced at an annual average rate of at least 1/20th of the excess over 60% of GDP over any three year period). The speed and scale of increases in public debt in countries severely affected by financial crisis suggests that this debt level may not leave adequate room for manoeuvre to cope with particularly adverse developments. Certainly, it would be much more difficult for Iceland now to keep its public finances on a sustainable path if public debt had been at this level before the crisis instead of 33% of GDP (excluding civil service pension liabilities). The pre-crisis level of public debt could be restored by maintaining budget surpluses at around 3% of GDP until 2025.

The government has implemented institutional reforms to strengthen fiscal discipline

To increase the likelihood that fiscal consolidation plans are implemented, the government has undertaken a number of institutional reforms. First, beginning with the 2010 budget, the Medium Term Outlook (MTO) projections (which cover the next four years) required under the Government Financial Reporting Act of 1997 have become targets for the adjustment path of the primary balance and overall spending envelope, supported by a stronger political commitment from the government. Second, a two-stage budget approval process has been adopted (*i.e.* top-down budgeting) in which the Minister of Finance submits to Parliament a report on fiscal policy and its objectives, including a revision of the consolidation plan, for a policy discussion. On the basis of the policy report, the Minister of Finance presents the budget proposal for the next fiscal year to Parliament, including expenditure frames for ministries and agencies, and it then approves the appropriation of funds for individual spending categories and projects. The aim of these arrangements is to involve Parliament in the formulation of policy objectives at an early stage as well as to ensure that all cabinet members take responsibility for achieving the government's spending targets and prioritising individual spending categories. Third, the government has imposed limits on, and greater scrutiny of, carryovers and no longer permits drawing on future appropriations. Finally, the government has taken steps to reduce earmarking of revenues, as this practice conflicts with fiscal management by means of expenditure frames. These various reforms should be strengthened by requiring each minister to account for ministry performance before Parliament.

The framework for local government finances, which has been relatively unconstrained by central government, is also being reformed to ensure that local government finances are compatible with the national fiscal plan. The bill that has been presented to Parliament includes a three-year rolling average budget balance rule, which requires corrective action if a local government is in breach, and a ceiling on the ratio of debt to tax revenues (debt cannot exceed 150% of regular local authority income). As many municipalities have significantly higher debt than permitted by the bill – indeed, seven have debt (excluding debt of enterprises owned by the municipality) greater than 250% of tax revenues – they have been allowed a relatively long period (up to ten years) to respect the debt rule. Government control will be more invasive for municipalities that are further from the target. The bill also states that municipalities' loans are not government guaranteed. These reforms are welcome as fiscal consolidation tends to be more successful in countries that have national or supranational rules (Guichard *et al*., 2007).

The adoption of fiscal rules would help to sustain needed fiscal restraint

Fiscal policy is currently tightly constrained by the IMF SBA. Once it ends and its constraints are off, there is a risk that fiscal restraint will not be maintained. To counter this risk, the government should adopt fiscal rules, which are permanent constraints on fiscal policy through simple numerical limits on budgetary aggregates (Kopits and Symansky, 1998). The key rule to adopt is a budget balance target because there is a direct link between this variable and fiscal sustainability (IMF, 2009). The target, which should cover the medium term, should be compatible with the government's debt

reduction objectives. This rule would complement the expenditure targets and top-down budgeting that are features of the new medium-term budgeting framework discussed above.

For a fiscal rule to contribute to achieving fiscal sustainability, the cost of breaking the rule must be higher than the benefit of doing so. Evidence suggests that rules that do not have effective enforcement mechanisms tend to fare worse than rules that do and are more likely to be abandoned or reversed (Debrun *et al.*, 2008). As sanctions are rarely envisaged (they require an effective third-party enforcer), formal fiscal rule enforcement procedures should rely on mechanisms maximising reputational cost and/or mandating corrective actions (IMF, 2009). One such mechanism that could be considered is fiscal responsibility legislation along the lines of that in Australia and New Zealand (Box 2.2).

Box 2.2. **Fiscal responsibility legislation**

Fiscal responsibility legislation in Australia and New Zealand aims to improve fiscal performance by strengthening incentives for governments to implement responsible fiscal policies. These laws set out principles of responsible fiscal management. Governments may temporarily deviate from them but are required to explain such deviations, indicate the approach to be taken to return to the principles and the period of time that this is likely to take. These frameworks oblige governments to formulate a fiscal strategy and assess it against principles of responsible fiscal management. The frameworks also impose transparency requirements that allow the public to judge whether or not fiscal management is responsible, thus putting the government's reputation for responsible fiscal management on the line.

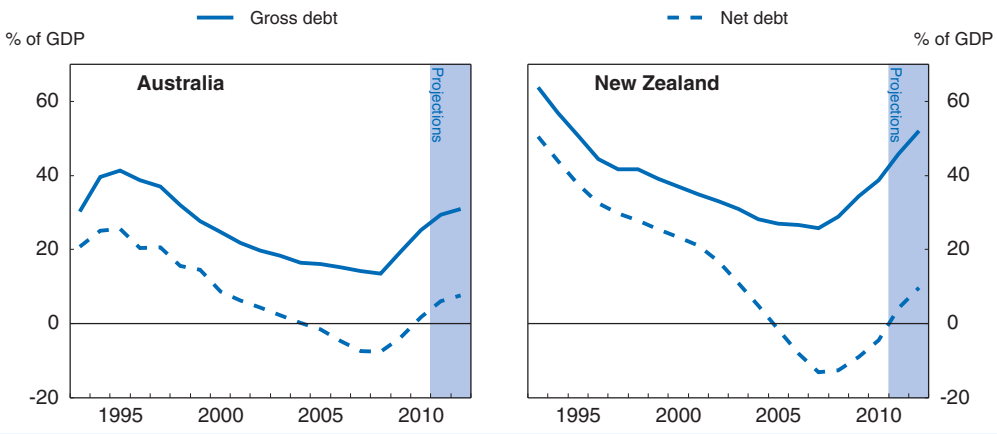
A core principle in both countries' legislation is that fiscal management should aim to maintain government debt at prudent levels or reduce it to these levels if not already there. Prudent levels of debt are not spelled out, but factors to take into account in assessing whether or not debt levels remain at or fall to prudent levels under the government's fiscal strategy are identified. In Australia, prudent debt levels avoid the financial risks arising from excessive net debt while in New Zealand, prudent debt levels provide a buffer against factors that may impact adversely on the level of total debt in the future. In New Zealand, the legislation stipulates that government must ensure that total operating expenses in each financial year are less than total operating revenues in the same financial year until prudent levels of debt have been achieved. Once prudent total debt levels have been achieved, the government must ensure that, on average, over a reasonable period of time, total operating expenses do not exceed total operating revenues.

Legislation in both countries requires a variety of reports to be published to enhance transparency, thereby enabling the public to assess whether or not fiscal management complies with the principles of responsible fiscal management. These include reports on fiscal strategy, short and medium-term fiscal projections, long-term fiscal projections (permitting an assessment of the effects of the fiscal strategy on future generations), budget outcomes and the economic and fiscal outlook when a general election is called. In Australia, the government or the opposition (if the Prime Minister agrees to refer the request) may ask the Secretaries to the Departments of the Treasury and Finance to prepare a costing, which will be published, of any of its publicly announced policies if a general election is called.

Box 2.2. **Fiscal responsibility legislation** *(cont.)*

Both Australia and New Zealand have significantly reduced government debt levels since such legislation was introduced (in Australia, the Charter of Budget Honesty Act, 1998; and in New Zealand, the Fiscal Responsibility Act, 1994) (Figure 2.4). The low debt levels achieved by 2007 put these countries in a strong position to weather the global financial crisis. Both countries now face the challenge of restoring the strong fiscal positions that prevailed before the crisis.

Figure 2.4. **Government debt has fallen in Australia and New Zealand since fiscal responsibility legislation was introduced**



Source: OECD, *OECD Economic Outlook Database*.

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Note

1. The capital and corporate income tax rates have been increased from 10% and 15%, respectively, in 2009 to 20% in 2011.

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Chapter 3

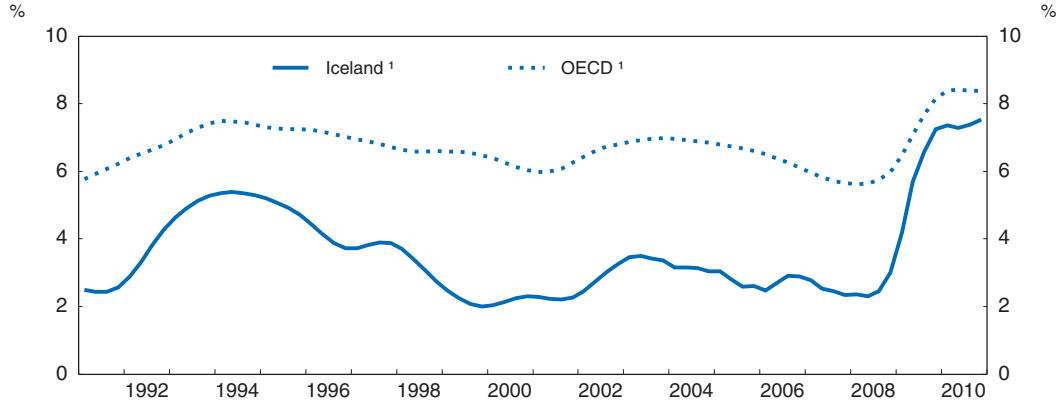
Returning to work in Iceland

Prior to the recession Iceland had one of the strongest labour markets in the OECD. High labour force participation rates and extremely low unemployment, particularly long-term unemployment and youth unemployment, were fostered by a quickly growing economy, relatively low labour taxes, and a flexible labour force. The deep recession of the past couple of years has, however, significantly impaired Iceland's labour market. Even so, this has only moved the Icelandic labour market performance to around the OECD average in terms of unemployment. The Icelandic government has increased programmes targeted at youth and long-term unemployment, groups which otherwise would have a high likelihood of remaining without work. Further, outside of the hard hit construction sector, it appears there is little sectoral shift in the demand for labour. These features, along with continued low taxes and a flexible labour force, suggest that the Icelandic labour market is well placed to pick up strongly as economic growth resumes. Nonetheless, adjustments to labour market policies through revising courses for the unemployed to better address the needs of the labour market, increasing the size of on-the-job training programmes, and revising the structure of unemployment benefits would reduce the likelihood of an increase in structural unemployment and promote a return to work in Iceland.

The Icelandic labour market continues to slump in the wake of the financial crisis

The recession that hit Iceland in 2008-10 inflicted a severe blow to output and the labour market with employment falling 6% from peak to trough. Most of those who lost their jobs have remained in the labour force, rather than emigrating or exiting from the labour market, keeping Iceland's labour force participation rate more than 10 percentage points above the OECD average. As a result unemployment increased significantly, from 2¼ per cent in 2007 to 7½ per cent in 2010 – the highest rate on record (Figure 3.1) – while the employment rate (share of the population with a job) has fallen considerably, from 84% of the working age population in 2007 to 78% in 2010, the lowest since the late 1970s. The authorities' challenge is now to promote the return to work and avoid cyclical unemployment from becoming a long-term, structural feature of the Icelandic economy.

Figure 3.1. **Iceland traditionally had very low unemployment, but it has shot up in the wake of the financial crisis**



1. 4-quarter moving average of unemployment rate.

Source: OECD, *OECD Economic Outlook Database*.

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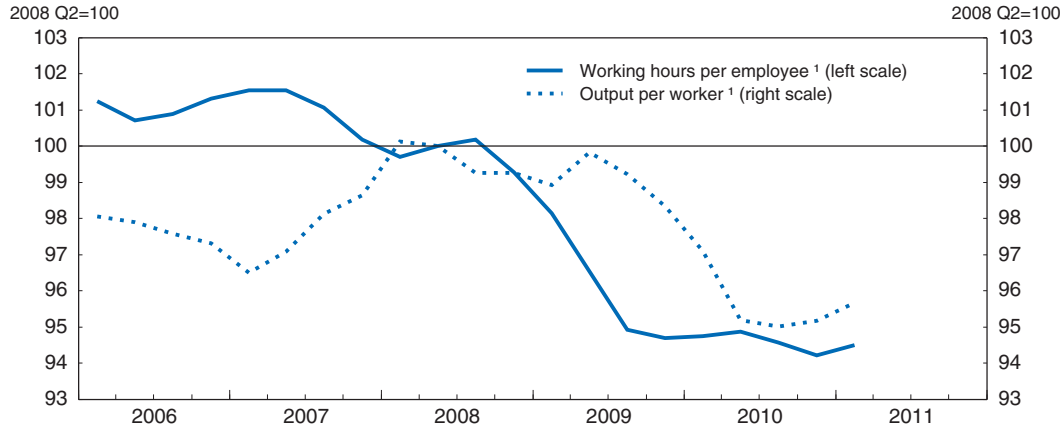
Reintegrating the out-of-work will be made more difficult as hours and workloads of current employees have fallen to adapt to the lower level of economic activity. Output per worker has dropped about 5% since peaking at the start of 2008, which may be indicative of labour hoarding during the recession. The drop in hours per worker explains most of the fall in output per worker (see Figure 3.2), but the remaining gap suggests somewhat less productive uses of time when workers are on the job. Firms will likely increase the utilization of these part-time and less productive employees before taking on new employees. As a result the recovery in the labour market will likely to occur more slowly than the recovery in output. (OECD 2010a, p. 77).

Figure 3.2. **Output per worker and working hours have fallen**



1. 4-quarter moving average.

Source: Statistics Iceland; OECD, *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932445828

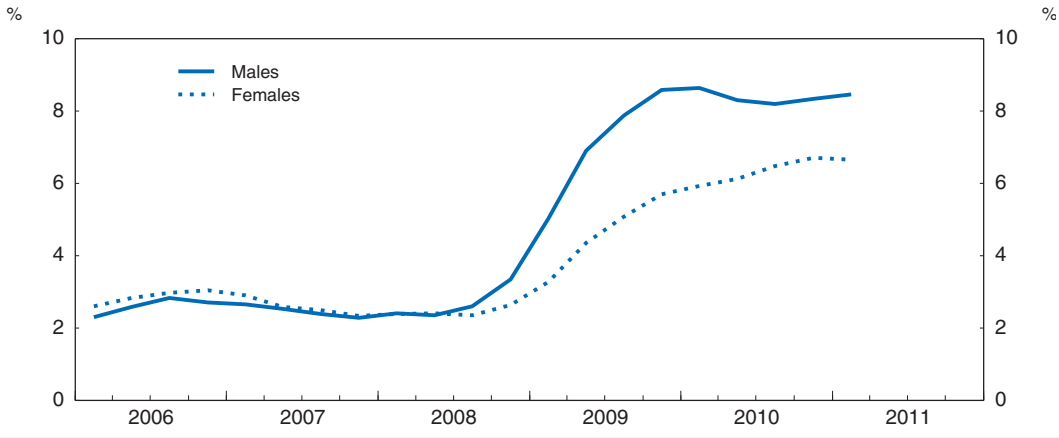
While the crisis mainly originated in the financial sector, the loss of jobs has been widespread. Apart from the very hard hit and quite volatile construction sector, the distribution of employment across sectors has changed only modestly since the onset of the crisis with the rate of this change being little more than the average over the past 20 years. The lack of structural upheaval in the employment mix will reduce the time-consuming and expensive effort of retraining a significant proportion of the population to move into other sectors. The exception to this story is the Icelandic construction industry which was hit much more severely than other sectors and, indeed, accounts for the bulk of the job losses. The bust in this sector has also affected the mix of jobs between men and women (see Box 3.1). The construction sector is traditionally extremely volatile and most of the loss in jobs in the sector resulted from a return to normal after the 2005 to 2008 boom raised the sector's share of employment far above previous levels.

Box 3.1. **Gender and unemployment in Iceland during the recession**

Like most OECD countries, women in Iceland comprise just under half of civilian employment, but, with the loss of jobs during the recession being most severe in the male-dominated industry of construction, the unemployment rate has increased more strongly among males than among females (Figure 3.3). With the labour force participation rate also falling more among men than women, the employment-population ratio for men has dropped 9 percentage points since 2007 (from 86 in 2007 to 77 in 2010), but only 5 percentage points for women (from 77 in 2007 to 72 in 2010). While the recent gap between the unemployment rate of males and females in Iceland is large compared with the OECD average, other countries with large housing booms and busts, such as the US and the UK, have seen similar gaps between male and female unemployment open up, and Ireland and Estonia have seen the appearance of much larger gaps (Figure 3.4).

Box 3.1. **Gender and Unemployment in Iceland during the Recession** *(cont.)*

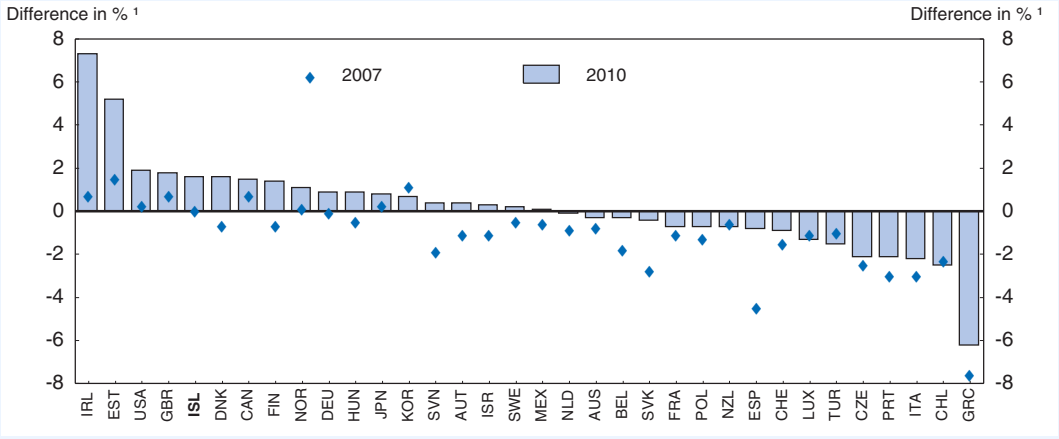
Figure 3.3. **The unemployment rate has increased more strongly among male workers**[1]



1. 4-quarter moving average.

Source: OECD, *Main Economic Indicators Database*. StatLink http://dx.doi.org/10.1787/888932445847

Figure 3.4. **The difference in male-female unemployment rates in Iceland is larger than the OECD average**

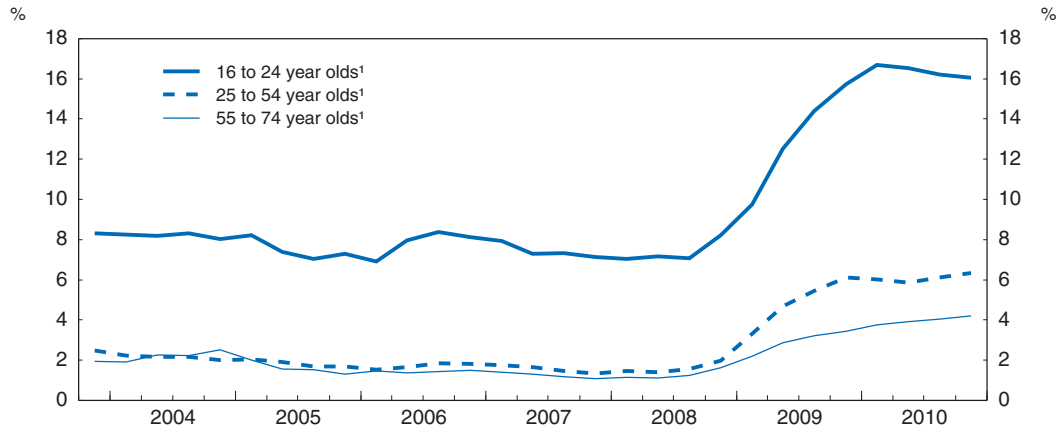


1. Male unemployment rate minus female unemployment rate.

Source: OECD, *Main Economic Indicators Database*. StatLink http://dx.doi.org/10.1787/888932445866

Workers with lower skills and young workers have been the worst hit by the crisis. Based on the International Labour Organization's correspondence of skill levels with occupations, the relatively less-skilled occupations of clerks, plant and machine operators, and elementary occupations accounted for more than 60% of the job losses between 2007 and 2009, despite being only 20% of the workforce. The rise in the unemployment rate has been highest for the less educated, though all education levels have seen significantly higher unemployment rates. Youth have also been disproportionally affected (Figure 3.5). Prior to the recession, Iceland had one of the best rates in the OECD of youth being either employed or in education, but the rise in youth neither employed nor in education has been one of the largest in the OECD in the past couple of years (Figure 3.6).

Figure 3.5. **Young workers have seen the most severe increases in unemployment**



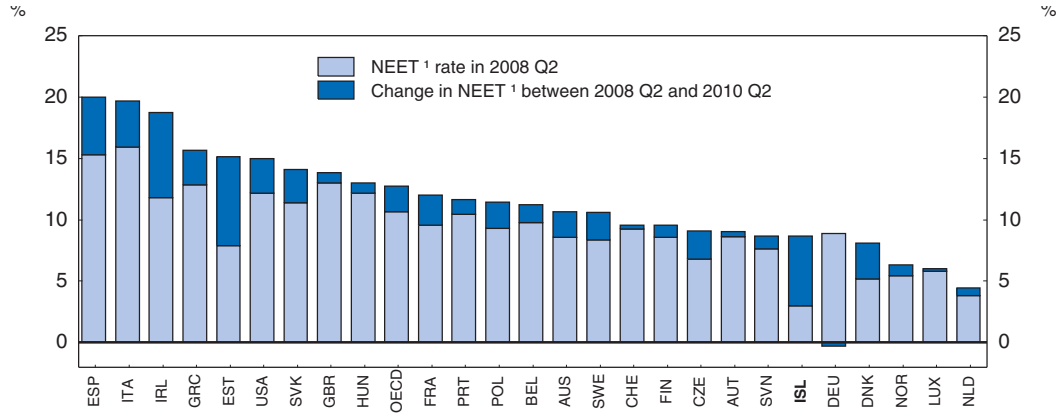
1. 4-quarter moving average of the unemployment rate by age group.

Source: Statistics Iceland.

StatLink http://dx.doi.org/10.1787/888932445885

Figure 3.6. **The rise in youth not attached to the labour force or in education has been large**

Age group 15-24



1. Neither in employment, nor in education or training.

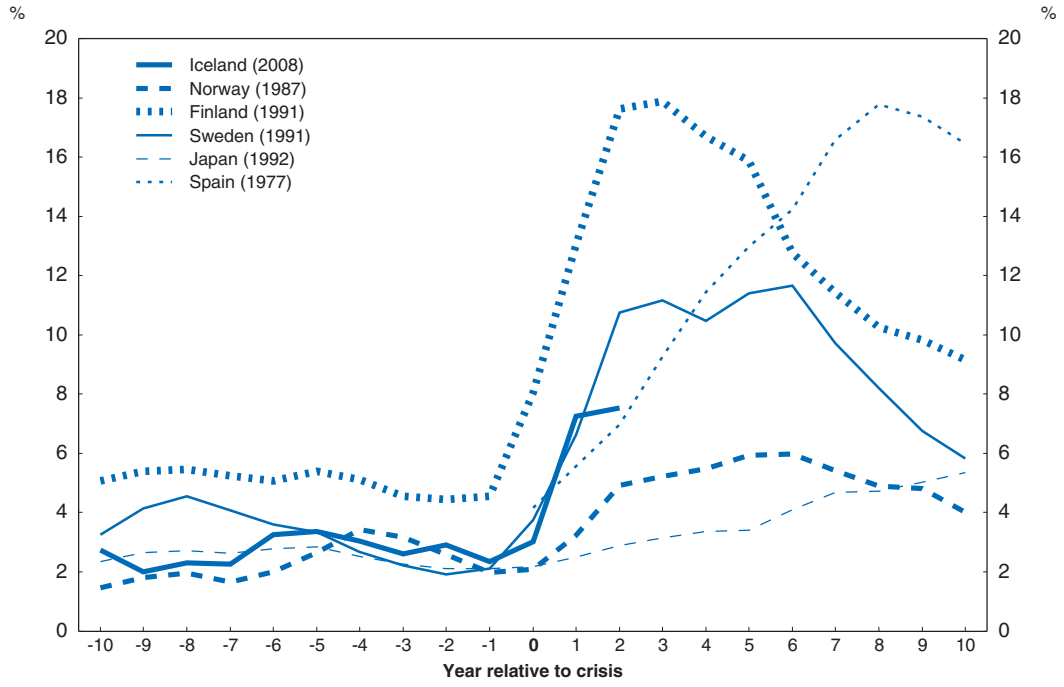
Source: OECD (2010b), *Off to a Good Start? Jobs for Youth*.

StatLink http://dx.doi.org/10.1787/888932445904

High unemployment will likely decline slowly

The recovery in the labour market will take a long time and it is unlikely that Iceland will reach the very low, pre-crisis levels of unemployment anytime in the next decade. In other advanced-country financial crises, unemployment remained significantly higher in the decade after the crises than in the decade before it (Reinhart and Reinhart, 2010) (Figure 3.7). Financial crises are particularly harmful to employment because they reduce the ability of firms that are dependent on external financing to retain employees. This results in larger-than-normal increases in unemployment relative to the fall in output following financial crises (Sharpe, 1994). Financial crises with large house price swings, as in Iceland, tend to be among the most harmful to labour markets and tend to be associated with even larger responses of unemployment to declines in output than financial crisis which are not associated with house price busts (IMF, 2010). Thus there is a risk that the high unemployment will linger in Iceland.

Figure 3.7. **Unemployment increases persist after large financial crises**[1]



1. The financial crises with which the Icelandic crisis is compared are the largest in advanced countries since WW II, as identified by Reinhart and Reinhart (2010).

Source: OECD, *OECD Economic Outlook Database*.

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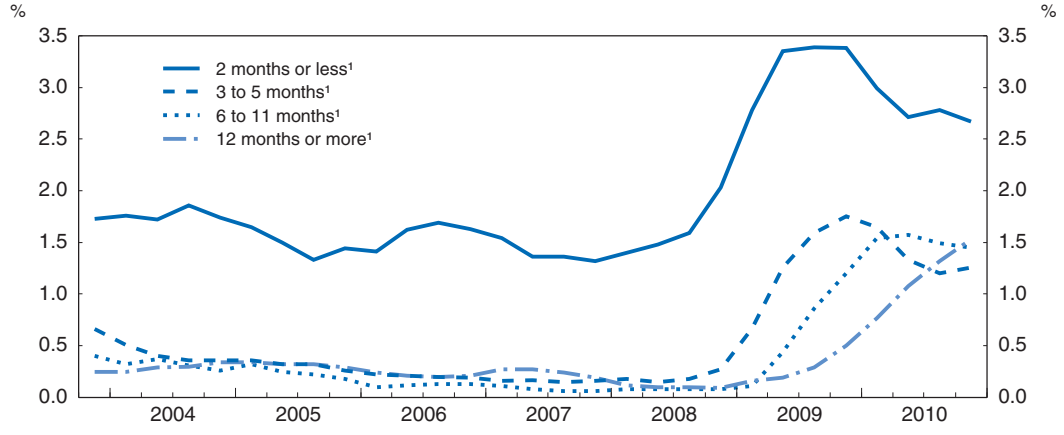
Despite this risk, the labour market in Iceland is showing signs that conditions are primed for improvement. The share of the labour force unemployed less than 12 months has begun falling suggesting a reduced inflow of people into unemployment and the beginning of a turnaround in the labour market (Figure 3.8).

Figure 3.8. **Long-term unemployment is still rising, but short-term unemployment has begun falling**



1. 4-quarter moving average of the share of labour force unemployed for given numbers of months.

Source: Statistics Iceland.

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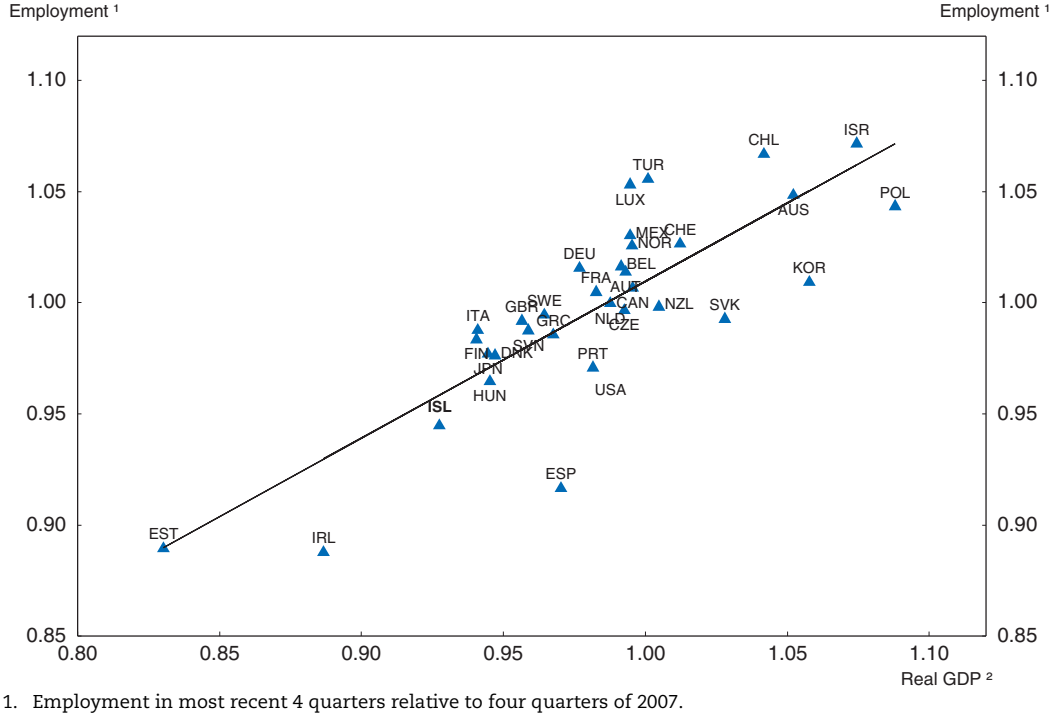
However, the same figure shows the share of the labour force unemployment for 12 months or more has increased to high levels by Icelandic standards and continues to rise.[1] This continued rise in long-term unemployment carries the risk of cyclical unemployment becoming structural. The long-term unemployed are difficult to re-integrate into the labour force, and the longer these workers continue to be unemployed the more their skills degrade. Recent cross-country estimates suggest that the probability of finding a job declines as time on unemployment increases (Danton and Murtin, 2011). As this long-term unemployment has increased, Iceland's structural unemployment rate (the unemployment rate consistent with stable wages and prices) is estimated also to have increased by ½ percentage point since 2007 to 3¼ per cent (OECD, 2011).

Economic growth is key to reducing unemployment

The most important means of reducing the risk of a continued high unemployment rate is for Iceland to experience strong, sustainable economic growth. Looking at other OECD countries, the fall in Icelandic employment since 2007 is in line with what would be expected given the considerable fall in output in Iceland (Figure 3.9). The consistency of the fall in employment with the fall in output, along with the wide sectoral distribution of the job losses, mentioned above, suggests that there is probably not a fundamental breakdown in the labour market which would impede an increase in employment once output growth is re-established.[2] Nonetheless, as noted above, it will likely take some time for an increased demand for labour to translate into lower unemployment. Creating the recovery in output will be difficult, however, and is discussed in other chapters of this *Survey*: the importance of returning the banking sector to health was discussed in Chapter 1 and the limited scope for macroeconomic stimulus was discussed in Chapter 2.

Figure 3.9. **The fall in employment is closely explained by the fall in output**



1. Employment in most recent 4 quarters relative to four quarters of 2007.
2. Real GDP in most recent 4 quarters relative to four quarters of 2007.

Source: OECD, *OECD Economic Outlook Database*. StatLink http://dx.doi.org/10.1787/888932445961

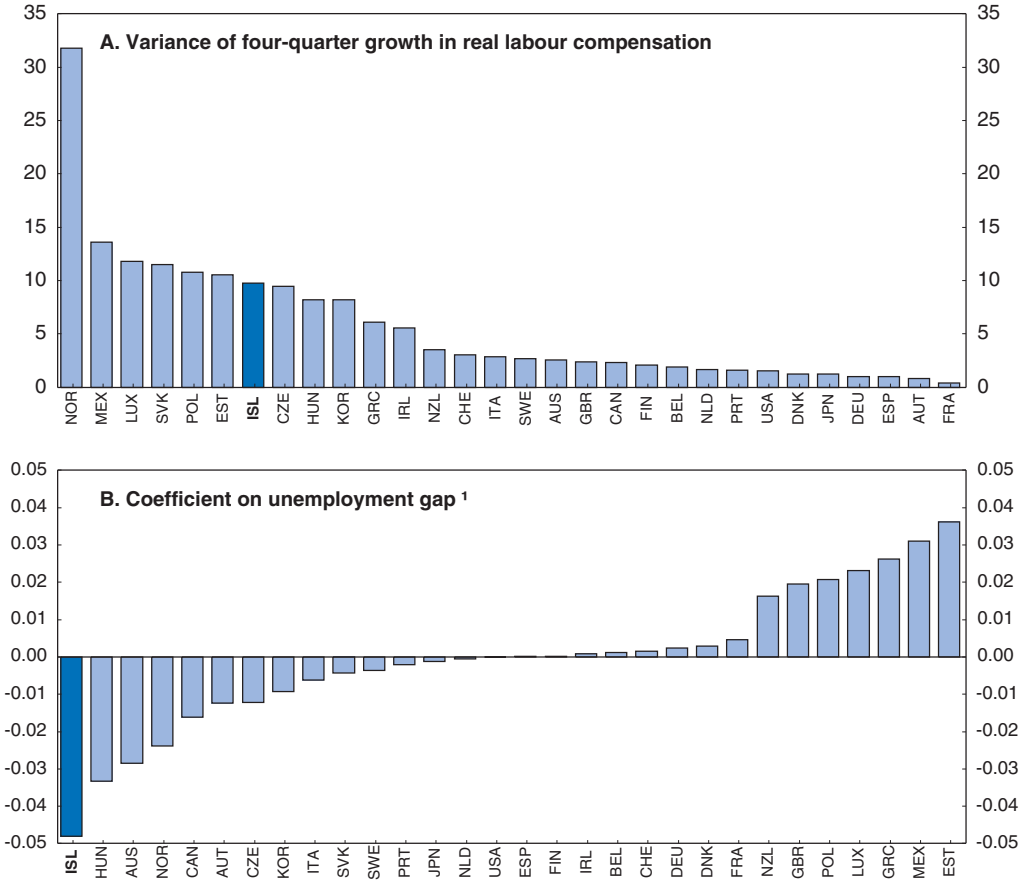
The flexibility of the labour market will also help

While output growth gradually increases the demand for labour, the flexibility of the Icelandic labour market will mitigate the risk that the current high unemployment will turn into a large rise in structural unemployment. Labour-market flexibility, when combined with well functioning labour-market institutions, allows a more appropriate matching of individuals and jobs. In Iceland this labour market flexibility is evidenced by the flexibility of real labour costs and the flexibility of the size of the labour force. Another feature that will help Iceland adjust is the geographic concentration of jobs and the labour force.

Real labour costs are flexible

Iceland has flexible labour costs, as demonstrated most recently by the 12% fall in real hourly wage rates that has occurred in the wake of the crisis. Even before then the labour market was characterized by relatively flexible real wages. The top panel of Figure 3.10 shows that the variance of the growth rate in real labour cost was somewhat above the OECD average during the decade before the crisis. A more economically relevant definition of the flexibility of real labour costs is their degree of response to the state of the economy. This is shown in the second panel of Figure 3.10, which displays the coefficient on the unemployment rate

Figure 3.10. **Real wages have been very flexible in Iceland**



1. Coefficient on the unemployment rate gap from a regression of log(real labour force compensation[t + 4]/real labour force compensation[t]) on a constant, log(real labour force compensation[t]/real labour force compensation[t – 4]), average unemployment rate gap[t] to [t – 4], and log(output per worker[t]/output per worker[t – 40]) using quarterly data from 1997 to 2007.

Source: OECD, *OECD Economic Outlook Database.*

StatLink http://dx.doi.org/10.1787/888932445980

gap from a regression of the growth of real labour compensation on a constant, the unemployment rate gap (difference between unemployment and NAIRU), a long moving average of labour productivity growth, and lagged real labour compensation growth.

However, much of the flexibility in real labour compensation has been a result of the high inflation rate in Iceland. It is notable that that since inflation declined in the mid-1990s unemployment has tended to run higher and be more variable than previously in Iceland. During the 2008-10 crisis, inflation once again contributed significantly to the adjustment of real wages: in nominal terms, the wage index increased by 15% from 2007 to 2010 but fell by 12% in real terms as the temporary run-up of inflation more than offset these nominal raises. As inflation once again returns to a low level, the manner in which wages are set in union contracts will be a key part of maintaining a flexible labour market (Box 3.2).

Box 3.2. **Icelandic Labour Unions**[*]

Around 85% of the Icelandic labour force is unionized, by far the highest in the OECD. The largest union federation, the Icelandic Federation of Labor (ASI) covered 63% of all union members in 2004. Employers are also represented by an umbrella organisation, the Confederation of Icelandic Employers (SA), which represents about 2 000 firms. The result is a very centralized and co-ordinated bargaining process. In times of economic bounty, individual unions within the ASI are more likely to bargain on their own to attempt to receive the maximum increase. However, in times of economic stress, wage bargaining becomes more centralized. In all cases, the timing of contract negotiations is co-ordinated.

Similar to other Nordic countries and unlike many European countries and the United States, Icelandic law stipulates few rights concerning labour. Instead union contracts generally govern working conditions. Negotiated wages in union contracts are always considered minimums and there is considerable leeway for raising wages above those minimums. Minimum wages are generally around 55 to 60% of average wages and 80% of median wages. Contracts usually stipulate that employees must be given 1 to 6 months notice of a termination and severance pay is rare. Employers do not need to give a reason for termination. Employees generally receive 24 to 28 days vacation, depending on seniority. The period of wage contracts can run from one to four years.

On 5 May 2011, a new collective agreement covering the period through 1 February 2014 was signed calling for a general wage increase of at least 11.4 per cent over the next 3 years and increase in the minimum wage of 23.6 per cent over the period. If economic conditions are significantly different than projected during the negotiations, then the agreement can be terminated or re-negotiated prior to February 2014.

[*] This box draws heavily from Olafsdottir (2010).

Flexible size of the labour market

The size of the labour market is also fairly flexible in Iceland. Since 1991 the labour force has expanded by 25%, but there have been three periods of significant labour force contraction (a 1¼ per cent contraction from 1995 to 1997, a 1½ per cent contraction from 2001 to 2004, and a 2¼ per cent contraction in the most recent two years). Depending on the source of the flexibility, changes in the size of the labour force can put strains on government services or reduce the tax base creating an economy with higher per capita government debt burdens. Nevertheless, flexibility in the size of the labour force takes pressure off of needed changes in real wages to equilibrate the labour market and can keep the unemployment rate from staying high for a long time.

Most of the flexibility in the size of the labour market in Iceland comes from net migration flows, which are among the highest in the OECD (Table 3.1). Net migration from 2005 to 2007 added 4½ per cent to Iceland's population. In the past two years, net migration has lowered the population by 2%. This inflow and outflow has not been entirely foreign population; the outflow of population has been about equally split between non-native and native Icelanders. First generation immigrants made up 12% of the Icelandic 16 to 65 year old population in 2009, up from 6% in 2005. Despite some outward movement in the immigrant population, their share fell only to 11% of the 16 to 65 year old population in 2010.

Table 3.1. **Net migration rates**

In per thousands

	2004	2005	2006	2007	2008	2009	2010
Iceland	**1.8**	**13.0**	**17.3**	**16.5**	**3.6**	**–15.2**	**–6.7**
Luxembourg	9.6	13.1	11.4	12.5	15.8	13.3	. .
New Zealand	3.7	1.7	3.6	1.4	0.9	4.9	. .
Ireland	11.6	15.9	16.9	15.5	8.7	–1.7	–7.7
Italy	9.6	5.2	6.4	. .	. .	. .	. .
Switzerland	5.4	4.8	5.2	9.9	12.8	8.5	. .
Australia	5.3	6.7	8.8	10.3	14.0	. .	. .
Czech Republic	1.8	3.5	3.4	8.1	6.9	2.7	. .
Spain	14.7	15.0	14.2	16.0	10.1	. .	. .
Norway	2.8	3.9	5.1	8.5	9.0	8.1	. .
Portugal	4.5	3.6	2.5	1.9	0.8	. .	. .
Netherlands	–1.0	–1.7	–1.9	–0.4	1.6	2.1	. .
Denmark	0.9	1.2	1.8	4.2	5.3	4.0	. .
Sweden	2.8	3.0	5.6	5.9	6.1	6.8	. .
Austria	6.2	5.4	2.9	4.2	4.1	2.5	. .
Germany	1.0	1.0	0.3	0.5	. .	. .	. .
Belgium	4.2	4.5	4.8	. .	. .	. .	. .
Finland	1.3	1.7	1.9	2.5	2.6	2.6	. .
Canada	6.6	7.0	6.9	7.3	8.4	8.0	. .
United States	3.1	3.3	3.2	2.8	2.9	2.8	. .
Hungary	1.8	1.7	2.1	1.4	1.7	1.6	. .
Japan	–0.4	0.0	0.0	–0.4	–1.0	. .	. .
Slovak Republic	0.5	0.6	0.7	1.3	1.3	0.8	. .
Greece	3.7	3.5	3.6	3.6	3.2	. .	. .
France	1.7	1.6	1.9	1.1	1.2	1.1	. .
Poland	–0.2	–0.3	–0.9	–0.5	–0.4	. .	. .

Source: OECD demography and population, *population and vital statistics Database*; additional data from Statistics Iceland and Central Statistics Office Ireland

High immigration flows are preferable to some other forms of labour market exit, particularly exits through the disability pension scheme. In Iceland, as with much of the OECD, disability recipients have been growing as a share of the labour force. Increased enrolment in disability pensions puts a considerable cost on society through increased social support payments, and those on disability benefits are unlikely to return to the workforce as the economy recovers. On average in the OECD, unemployment is twice as high for people with disability as for those without, though the unemployment rate for people with disability in Iceland is only somewhat higher than for those without disability (OECD, 2010d).

Geographical labour mobility problems are low

Another area which could be a concern in some countries is a reduction in geographic mobility. For example, geographic mobility has been slowly declining in the United States since at least the mid-1990s (Kaplan and Schulhofer-Wohl, 2010), which could reduce the flow of people from areas where jobs are scare to areas where they are plentiful. This creates a geographic mismatch between the location of people and the location of jobs, thereby keeping the unemployment rate from falling after a recession. A fall in geographic mobility could be more pronounced in the current economic environment because a large number of individuals owe more on their house than it is worth, making it difficult for them to sell and move. (However, evidence of this occurring in practice is debateable. See Schulhofer-Wohl [2010].) In Iceland it is estimated that about 20% of all homeowners owe more than their home is worth (Working Groups of Experts, 2010). Such a high level of "underwater" mortgages could create some problems in Iceland, particularly through reduced emigration. However, with around 65% of the workforce living in the capital area, potential problems of geographic mismatch are considerably smaller than in less concentrated countries.

Policy actions can speed up the reduction in unemployment and lessen increases in structural unemployment

Despite the factors mitigating the risk of a large rise in structural unemployment in Iceland, the fact remains that the longer potential workers are without jobs the more out of touch with the labour force they become, making them harder to re-employ. Labour support programmes can reduce this risk by exerting pressure on the unemployed to remain in touch with the labour market and upgrading their skills where appropriate. In general the Icelandic authorities have done well to create an environment that maximizes employment and also to respond to the needs of the recent crisis. Institutional barriers to unemployment are relatively low in Iceland (Box 3.3). Nonetheless, some adjustment to labour market programmes may help speed the return to work.

Box 3.3. **Institutional barriers to employment**

OECD (2011), based largely on De Serres, *et al.* (2011), examines a number of institutional factors that can affect unemployment including employment protection legislation, unemployment income support, and taxation.

Employment protection legislation reduces the ability of firms to dismiss employees, and as a result makes them more hesitant to hire employees in the first place. De Serres, *et al.* (2011) finds a large robust effect of greater employment protection legislation increasing the persistence of shocks to the unemployment rate, and some effect of such legislation increasing the average level of unemployment. Using an index derived from 21 items covering the areas of dismissal of workers with regular contracts, additional costs for collective dismissals, and regulation of temporary contracts, the latest OECD index of employment protection legislation suggests Iceland has slightly less strict employment regulation than the average. Among the 30 OECD countries and 10 emerging market countries surveyed, Iceland ranked the 16th lowest on strictness of employment protection legislation (Venn, 2009). The only area in which Icelandic labour market protection legislation ranks relatively high is in collective dismissals.

Generous *unemployment benefits* reduce the incentives of the out-of-work to search for jobs, and can raise the level of unemployment. On the other hand, by reducing the pressure on the unemployed to take the first job offer, unemployment benefits may allow them to find a job they are better suited for, thus improving the match of the job with their skills and raising productivity. The generosity of

Box 3.3. **Institutional barriers to employment** *(cont.)*

benefits can be measured by the share of pre-unemployment share of income they replace (the replacement rate) as well as the duration of those benefits. De Serres, *et al.* (2011) finds that more generous initial unemployment benefits increases the level of the unemployment rate, and that providing benefits over a longer period, may increase the persistence of unemployment rate. Similar results have been found in other studies (Aaronson *et al.*, 2010, Valleta and Kaung, 2010; Elsby, Hobjin, and Sahin, 2010). OECD (2009) suggests the replacement rate for Iceland, at just below 60% in the first year of unemployment, is quite similar to the median OECD country, but the replacement rate in Iceland does not fall much in years two and three of unemployment. Indeed, by year three the replacement rate in Iceland is about twice the median OECD country.

The level of unemployment benefits may be a particular concern for the less skilled and those who are likely to be on the lower end of the income distribution. In such cases the replacement rate may be quite high compared to what the unemployed might earn moving back into the workforce. This can create a significant disincentive for work. In Iceland, unemployment benefit after the first few months, at around ISK 150 000 per month, approaches ¾ of the regular salaries for the bottom quartiles of occupations which comprise about 9% of private sector employment (Table 3.2).

Table 3.2. **2009 Unemployment benefits were about three-quarters of private sector regular salaries for the bottom quartile of some occupations**

	Monthly regular salary of bottom quartile (thousands ISK)	Bottom quartile share of private sector employment
Professionals	450	5.2
Managers	449	2.5
Technicians and associate professionals	312	4.4
Craft workers	279	2.9
Clerks	253	1.4
Service workers	220	4.9
General, machine and specialized workers	191	3.8
Unemployment benefits (after initial period)	150	. .

Source: Statistics Iceland.

High *labour taxes* create a wedge between what the business pays for labour and what the individual receives. The higher labour cost reduces firms' desire to hire workers and the lower take home pay received by the employee reduces individual's willingness to take jobs. Empirically, De Serres, *et al.* (2011) finds that higher labour market taxes increase both the level and persistence of unemployment by reducing the outflow rate of individuals from unemployment to a job. Labour taxes in Iceland are well below the OECD average (Table 3.3).

Table 3.3. **The average tax on wages is relatively low in Iceland compared with other OECD nations**

	Single person, 100% of average earnings, no child, 2009	One-earner married couple at 100 of average earnings 2 children, 2009	Two-earner married couple, one at 100% of average earnings and other at 67%, 2009
Hungary	53.4	43.7	44.8
Sweden	43.2	37.6	39.0
OECD average	36.5	26.0	31.3
US	29.4	13.8	24.2
Iceland	**28.3**	**8.6**	**22.9**
New Zealand	18.4	0.6	15.3

Source: OECD, *Taxing Wages Database*.

Public employment services

Expenditure on public employment services has been significantly linked to lower levels of unemployment (De Serres, *et al*., 2011). However, given that the number of unemployed is currently substantially larger than the number of job openings in Iceland, public employment services will be unable to find the unemployed new jobs quickly. Instead, active labour market policies during a severe recession are likely to be the most beneficial in helping the out-of-work to maintain contact with the labour market so that they are ready when the jobs do return. The government has wisely invested heavily in such services despite the significant fiscal crisis. The five-fold increase in the budget for active labour market programmes in Iceland since 2007 has avoided a considerable decline in resources per unemployed person, which would have reduced the ability of the public employment service to follow-up on cases and offer appropriate job matching and training services.

Active labour market policies are an important part of Iceland maintaining a low unemployment rate during good times. The Icelandic Directorate of Labour targets those most in need by concentrating the majority of its resources on youth and long-term unemployed. Activation policies that aim to contact the unemployed within the first few months on unemployment benefits, and require regularly attending meetings or courses, assist in moving individuals back to work quickly and reducing inappropriate receipt of benefits. Slightly more than 20% of the unemployed in 2010 were enrolled in occupational courses, 7½ per cent were enrolled in apprenticeships, internships or provisional contracts, and 18% in other labour market programmes (Ministry of Economic Affairs, 2011). Around 20% of individuals activated for the first time do not show up to activation meetings.

Formal job training

Internationally, estimates of the effectiveness of job training have been mixed (Box 3.4). However, because job training keeps workers attached to the labour market, it may be more effective in periods where unemployment is high and the likelihood of finding a job is lower. Further, these programmes may be more effective for less-skilled groups than for more-skilled workers – exactly the population most hit by the current downturn in Iceland. These groups are those most able to shift labour across sectors to support the changing needs of the economy. Since many of the less-skilled are also younger workers, they are also very vulnerable to scarring effects in which a period of unemployment lowers lifetime earnings (Gregg and Tominey, 2005).

In Iceland, numerous types of skills training classes are available for the unemployed – in fact the long-term unemployed are required to take occasional classes to maintain unemployment eligibility. However, due to the relative brevity of the courses (many last only a couple of days) and broadness of the topics, it is unclear how useful some of these courses are in preparing workers for jobs. Revising the list of approved job skills courses and their duration, in consultation with the organisations representing the interests of employers and labour, to best address the goal of moving the unemployed into jobs may increase the effectiveness of the job training programmes and speed up the return to work.

Along these lines, a review of the usefulness of different training and other employment measures for the youth unemployed is currently being conducted by the Directorate of Labour. This assessment follows a special effort in 2010 called "Youth in Action" aimed at reaching the 16 to 29 year old age group with employment services. Projects such as computer science, business administration, computer repair, music, languages, artistic creation, food preparation, driving and heavy equipment handling,

Box 3.4. **Job training in the short and long run**

The effect of job training on the unemployment rate is not clear. De Serres, *et al.* (2011) finds that job training increases both the inflow of workers into unemployment and the outflow of workers from unemployment into jobs. Card, Kluve and Weber (2010) find that classroom and on-the-job training programmes are one of the more effective types of active labour market policies at raising outcomes two years after an individual enters the program. Similar results have been found in other studies that suggest job training programmes tend to raise the probability of returning to work in the long run (Freidlander and Burtless, 1995; Gerfin and Lachner; Boone and Van Ours, 2009). However, in the short-run other studies have found that job training programmes have little or even negative effects because they reduce job search and job offer receipts (Dyke, *et al.*, 2005; Holtz *et al.*, 2006). Holtz, *et al.* (2006) reconciles these finding by suggesting that although job search assistance programmes dominate training in the short run, over longer horizons the gains to human capital development from job training are larger.

hygiene and self-improvement were offered. By November about half of the youth eligible, (8 630), had accepted offers to participate in some project, which could end up lasting from one hour to six months. The total cost of the programme through the end of 2010 was around ISK 341 million (approx. EUR 2 million) (Ministry of Economic Affairs, 2011).

Internship – on-the-job training

Much job training occurs on the job rather than in classrooms. In fact, one of the most useful programmes in Iceland is a small long-term internship programme in which the Icelandic employment services pay a stipend to a company to train unemployed workers for six months. This stipend lowers the cost of hiring a new worker for the first six months and can act as a type of marginal employment subsidy that may represent the best trade-off for money spent (OECD, 2010a, p. 80-83). To avoid problems of firms firing high-paid workers to hire lower-paid ones, the subsidy can only be claimed by firms which have not fired workers in the past six months. At the end of the programme most of the workers stay with the company that they interned with. This high-value programme remains quite small with only 700 long-term unemployed enrolled (just under 15% of the long-term unemployed) because the demand for workers by firms is low. With fairly strong results, expanding this programme temporarily as conditions permit should be a priority for returning difficult cases to employment. One possible way to expand this programme is make more businesses eligible for it. Currently, only businesses which have been in operation for two years are eligible. Reducing or eliminating this period would expand the number of eligible businesses, and encourage the growth of new businesses. However, by subsidizing the long-term unemployed only, this programme distorts the labour market and may simply lead firms to hire the long-term unemployed over shorter term unemployed, who may be a better match for the position. As labour market conditions improve, and long-term unemployment becomes less of a concern, an evaluation to determine the net employment benefits of the programme should be undertaken.

Revise unemployment benefits

The level of unemployment benefits in Iceland is slightly more generous than average among the OECD nations. After a few months where unemployment benefits are tied to the workers previous salary, but subject to a ceiling, the benefit level falls to a common level (around ISK 150 000 per month) and stays at that level for (currently) four years. This

level of benefits provides a replacement rate of around 60% of workers' previous earnings, which is comparable to other OECD countries in the first year of unemployment, but quite high by the final year (Table 3.4). After one year of work, an individual's eligibility for benefits is reset and they can once again take a full four years of unemployment benefits. Such ease in resetting benefit could lead to a cycle in which individuals work for one year then spend some years on unemployment benefits. However, as noted in Box 3.3, the level of unemployment benefits are low enough that they are unlikely to be an attractive option for all except those at the lowest end of the wage scale.

As noted in Box 3.3, unemployment benefits can reduce the incentive to search and raise the unemployment rate. However, in times of abnormal labour market turmoil, when few jobs exist relative to the number of out-of-work, unemployment benefits probably have considerably less effect on raising the unemployment rate than in normal times. Indeed, the US Congressional Budget Office (Congressional Budget Office, 2010) has estimated that extensions of unemployment benefits in the United States during the current downturn

Table 3.4. **Prior to the recession Iceland's unemployment benefits were close to the OECD average in the first year of unemployment, but higher than average after the first year**

Net replacement rates at different points during an unemployment spell, 2007

	Year 1	Year 2	Year 3	Year 4	Year 5
Norway	72	72	72	72	72
Belgium	65	63	63	63	63
Austria	61	58	58	58	58
Denmark	68	68	68	68	9
Ireland	50	50	50	50	50
Portugal	79	79	56	24	3
Germany	64	48	42	36	36
France	67	64	31	31	31
Finland	60	58	33	33	33
Australia	42	42	42	42	42
Spain	69	65	25	25	13
New Zealand	38	38	38	38	38
Sweden	66	63	41	8	8
Iceland	**57**	**54**	**54**	**8**	**8**
United Kingdom	28	28	28	28	28
Netherlands	71	59	3	3	3
Switzerland	80	40	0	0	0
Luxembourg	87	8	8	8	8
Canada	52	14	14	14	14
Hungary	48	13	13	13	13
Poland	42	16	8	8	8
Czech Republic	33	11	11	11	11
Japan	45	3	3	3	3
Turkey	46	0	0	0	0
Slovak Republic	32	3	3	3	3
Greece	33	5	1	1	1
Italy	37	0	0	0	0
Korea	31	0	0	0	0
United States	28	0	0	0	0
Median	*52*	*40*	*25*	*13*	*9*

Note: Countries shown in descending order of the overall generosity over five years. Calculations consider cash incomes as well as income taxes and mandatory social security contributions paid by employees.
Source: OECD (2009).

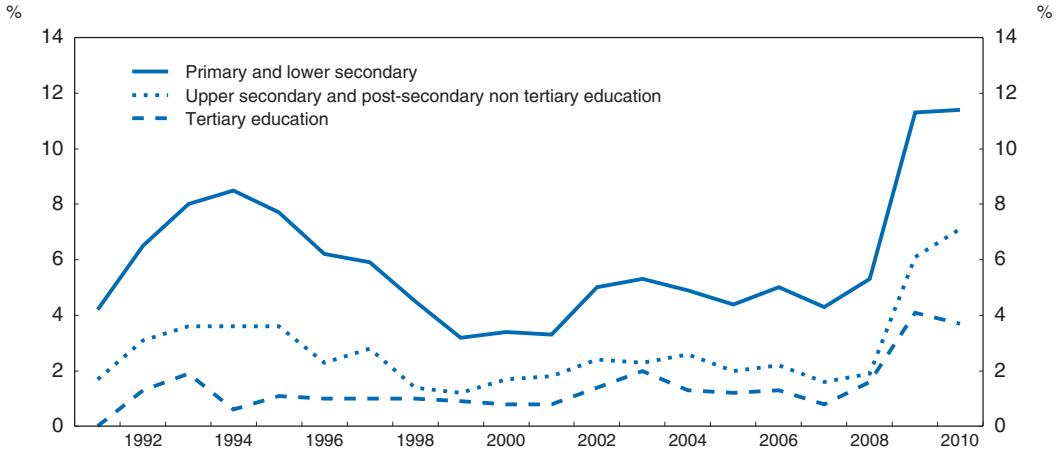
actually increase employment by increasing the spending of the unemployed. As the labour market improves, extended unemployment benefits are likely to be more of a drag on the labour market. After the recovery has taken hold and unemployment has been reduced, the duration of unemployment benefits should be allowed to decline, as planned, from the current four years to three years, the level pertaining before the crisis. Making the level of benefits decline with the length of time on unemployment is one possible change which can increase the incentive for the unemployed to return to work, while still maintaining support for those in need. Further, consideration should be given to readjusting the speed at which individuals can become fully eligible for benefits. However, given Iceland's low level of long-term unemployment prior to the crisis, the length and generosity of Iceland's benefits does not appear to have been a significant problem.

Long-run education

Over the long-run, increasing educational attainment will be an important factor in avoiding an increase in structural unemployment. More highly educated persons have a lower risk of being unemployed and have higher wages in Iceland, as in most countries. In Iceland between 2000 and 2009, workers with a tertiary education had unemployment rates that averaged 4 percentage points below workers with only a primary education (Figure 3.11). This difference has increased in the wake of the financial crisis to more than 7%, and the unemployment rate has already begun dropping for the most educated. The average level of educational attainment in Iceland is low compared with the OECD mean, but there has been considerable progress in raising secondary and tertiary completion rates in the past 10 years (OECD, 2010e). The government has announced a programme, Strategy 2020, which aims to further decrease the number of people who have not formally acquired an upper secondary school degree from 34% of the 20 to 66 year old age group to 10% by 2020 (Ministry of Economic Affairs, 2011).

Education in Iceland is more bifurcated than in most OECD countries with a high dropout rate, but a large share of those dropouts coming back in their late twenties and thirties to finish their degrees. When this graduation outside of the typical age range is taken into consideration, completion rates Iceland for secondary and tertiary education are higher than the OECD average (OECD, 2010e). It is not clear that such a system should be

Figure 3.11. **Unemployment rates are significantly lower for the more educated**



Source: Statistics Iceland.

StatLink http://dx.doi.org/10.1787/888932445999

discouraged, as taking time off before completing studies may provide students with greater focus to their studies and improve matching after studies are completed. However, during the recession queues have increased for individuals attempting to re-enter the traditional educational system to finish off secondary degrees. Limiting the ability of dropouts to return to finish their degrees could have long-term deleterious effects on their trajectory for labour market earnings and could increase the share of Icelanders who are stuck in low-skilled jobs or unable to find work. To address this problem, the government has recently decided on a special education and labour market initiative for the next three years to improve access for individuals re-entering education. Secondary schools will be granted funds to accept all eligible applicants under 25, and opportunities will be expanded for those above that age, in particular with up to 1 000 long-term unemployed being offered educational opportunities in secondary schools, adult learning centers, or universities.

Additional methods of speeding the return to work

Other possible measures to speed the return to work beyond those mentioned above are also available and have been used by other countries in the recent recession (Box 3.5). However, for fiscal and timing reasons, these methods are less relevant for Iceland at this time.

Box 3.5. **Additional methods of increasing employment**

Beyond the measures mentioned above and attempted in Iceland, other methods exist for bolstering employment during and after a recession.

Direct public employment – Rather than attempting to stimulate private sector hiring, the government can expand government employment and use the additional labour for projects such as construction and maintenance. While such a programme may be successful at temporarily increasing employment, they carry a significant cost for the government budget. In a meta-analysis of programme evaluations, Card, Kluve, and Weber (2010) find that such programmes are relatively unsuccessful at improving outcomes for those involved once the programme is over. There has been little use of direct hire public employment programmes in Iceland as a result of needed fiscal restraint. However, with the improvement in the budget position being ahead of IMF targets, some expansion of government spending in the form of increased road building is expected to be undertaken.

Short-time work schemes – Short-time work schemes involve government subsidization to reduce layoffs. They have been used in a variety of OECD countries, most notably Germany, Belgium, Finland, Italy and Japan, in the current recession, and have been successful at reducing layoffs of permanent employment in exchange for larger declines in average hours (OECD, 2010c). By design these schemes promote changes in hours over changes in employment and they may therefore impede any needed reallocation of labour to more efficient uses and slow the recovery. Since the purpose of short-time work schemes is to avoid layoffs, rather than create hiring, they are most useful while output and employment are declining and should be phased out during the recovery. While hours did fall in Iceland (see Figure 3.2), there was little co-ordinated government support for implementing a short-time work scheme. With the economy appearing to be at about the trough in output, implementing a short-time work scheme at this point would not be appropriate.

Tax or hiring credits – Tax reductions which reduce unit labour costs to encourage private sector hiring have been used in a number of OECD countries: reductions in the employer social security contributions (Germany, Japan, Portugal, and Hungary), targeted labour tax cuts for new hires (France, Spain, Ireland, and Portugal), and expanded gross hiring subsidies targeted at specific groups such as the long-term unemployed (Austria, Korea, Portugal, and Sweden). Iceland has not attempted a widespread labour tax reduction; however, the on-the-job training programme, mentioned above, does meet many of the features that would be desirable in a targeted tax or hiring credit.

Concluding remarks

In general, the Icelandic authorities have done a good job at creating a labour market which fosters high employment. This market has been significantly harmed by the recent recession. The authorities have responded about as well as can be expected to this challenge given the considerable fiscal crisis by expanding active labour market programmes and focusing on the youth and long term unemployed. Nevertheless some adjustments to the current programmes in the form of realigning job-skills training courses, expanding internship opportunities, and adjusting unemployment benefits may assist in the return to work over the next few years. A small risk remains that the current high unemployment will lead to a rise in long-term structural unemployment. However, as economic growth resumes, the labour market appears to be well-positioned to improve, but that improvement is likely to be slow and the extremely low rates of unemployment observed in Iceland before the boom are unlikely to be seen again anytime soon.

Notes

1. The data are from Statistics Iceland and are created on a basis comparable to labour market data from other OECD countries. Further, the analysis is based on 4-quarter moving averages to reduce seasonal-adjustment issues. However, within-year data using alternative definitions of the unemployment and the labour force compiled by the Icelandic Directorate of Labour, and used by the Central Bank of Iceland, suggest that the increase in the number of long-term unemployed may be levelling off.
2. Examination of job inflow and outflows across occupations, along with possible shifts in the Beveridge curve, would provide a more complete assessment of possible structural labour market problems, but such data was not available.

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Chapter 4

Ensuring a sustainable and efficient fishery

Iceland has managed its large fishing industry in a sustainable and profitable way. The foundations of this success are setting Total Allowable Catches (TACs) based on scientific recommendations of what is biologically sustainable and the Individual Transferable Quota (ITQ) system, which gives each holder the right to catch a certain of the TAC in various species. The efficiency of this system could be under threat from potential policy responses to the perceived unfairness of quotas having initially been given away and by Iceland's possible accession to the EU. However, there is nothing the government can do now to undo the unfairness of the initial allocation. Nevertheless, it could be attractive to increase the special fisheries resource rent tax as it is likely to be a more efficient tax than most others, although the increase should not be so great as to damage the fisheries management system. The resource rent could also be increased by reducing TACs from the current, biologically sustainable level to the level that maximizes rent. Provided that Iceland is able to negotiate to maintain the authority to set TACs and to keep the ITQ system, joining the EU, and hence the Common Fisheries Policy (CFP), should not reduce the efficiency of the Icelandic fisheries management system.

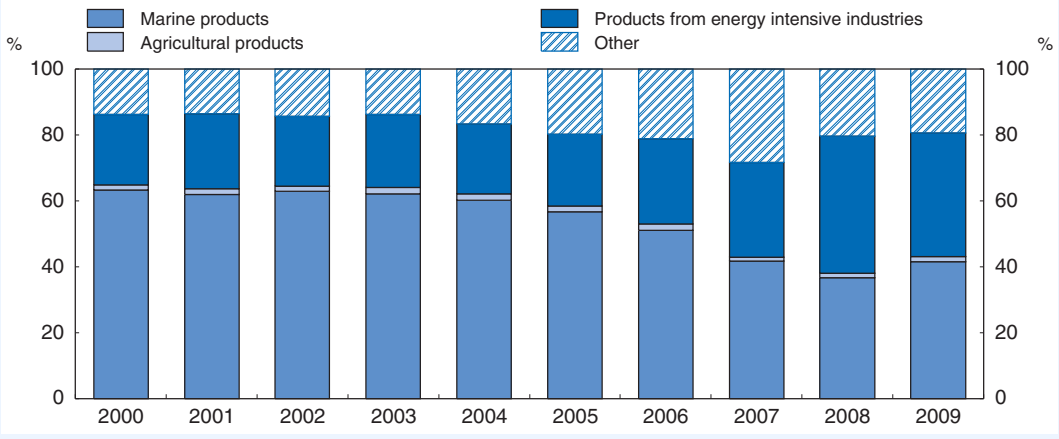
Iceland has managed fish stocks that are not shared with other countries in a sustainable and profitable manner. This success has mainly been achieved by broadly following scientific advice in the setting of total allowable catches (TACs), which has led to sustainable resource use, and by the use of an Individual Transferable Quota (ITQ) system, which is a specific type of Rights Based Management (RBM) regime. Efficient and sustainable management of fisheries resources makes an important contribution to economic prosperity in Iceland given the large scale of the industry (Box 4.1).

Box 4.1. **The role of the fishing industry in the Iceland economy**

The Icelandic economy is heavily reliant on the fishing industry. Fish products account for around 40% of merchandise exports (measured in value), down from around 70% in 1990 (Figure 4.1). This reduction in the share of merchandise exports is mostly due to increased aluminium production. With a total catch of about 1.4 million tons, Iceland is among the 20 biggest fishing nations in the world. Fishing and seafood processing accounted for more than 11% of GDP in 2010, although this was boosted somewhat by the low value of the exchange rate; the average share of fisheries in GDP over the last decade (2000-09) was 9%. Around 5 000 people work in harvesting while around 3 600 people work in the fish processing industry. This represents 3% and 2.2% of the total workforce, respectively.

Figure 4.1. **Shares of different industries in total merchandise exports**

As per cent of total



Source: Statistics Iceland.

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Although the role of the fishing industry in Icelandic exports has decreased in recent years, there are important secondary effects of the fishing industry throughout the economy. Various industries are closely linked to the fisheries, such as shipyards, electronic companies, shipbrokers and marketing firms. Agnarsson and Arnason (2007) find, using historical data, that a 1% increase in the production value of the fishing industry results in a 0.3% short run increase in GDP. On the declining role of the fishing industry in the Icelandic economy, see also Danielsson (2004) and Danielsson (2008).

Nevertheless, the efficiency of the fisheries management system could be reduced by potential policy responses to the perceived injustice of quotas initially having been given away as well as being transferable and by Iceland's possible accession to the EU and hence conformity to the Common Fisheries Policy (CFP). Policymakers will need to chart a course that allows progress to be made on these fronts without damaging the features of the fisheries management system that have made it so successful. The industry will also need to contribute to meeting Iceland's challenging obligations to reduce Green House Gas (GHG) emissions, the fishing industry being a major source of emissions in Iceland. The Icelandic fishing fleet already pays the recently introduced carbon tax, which contrasts with the treatment accorded to many other fleets that not only do not pay a carbon tax but even receive fuel subsides.

Scientifically-based TACs and the ITQ system are the foundations of Iceland's successful fisheries management system

Previous fisheries management arrangements failed to prevent overfishing in Iceland

Iceland struggled for several decades to gain full control over its fishing grounds. The Exclusive Economic Zone (EEZ) was set at 12 miles in 1958 and then increased to 50 miles in 1972. Even after this increase, foreign fleets' catches in the fishing grounds around Iceland remained substantial. For example, they caught around 100 thousand tonnes of cod in 1975, amounting to around one third of the total cod catch that year from these fishing grounds.[1] Lacking control over these fishing grounds, it was impossible for the Icelandic authorities to implement a fisheries management system to achieve a sustainable and efficient industry. With the enlargement of the EEZ to 200 nautical miles in 1975, most of the commercially important fish stocks in the fishing grounds around Iceland fell within Iceland's EEZ.[2] Following the extension of the EEZ, foreigners' share of the catch diminished rapidly. Since the early 1980s foreign catches have been almost negligible and are restricted by special contractual arrangements.

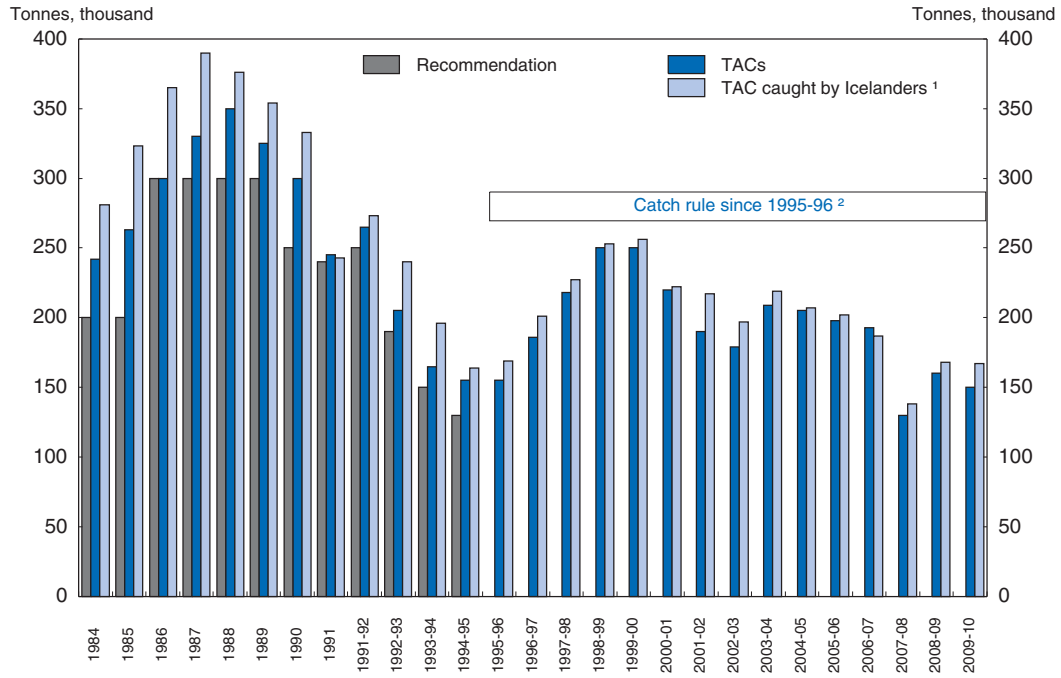
Overfishing remained a chronic problem, however, until the Individual Transferable Quota (ITQ) system was introduced, starting in 1984 (see below). The various measures from 1976 to 1983 restrict catches, mostly TAC restrictions and effort controls, proved all but useless. These controls failed owing to the substitutability of inputs (OECD, 2006).

The cornerstone of the fisheries management system is catch limitation (TAC)

The total catch of each species in Iceland's fishing grounds is restricted to a specified Total Allowable Catch (TAC). The TAC for each fishing year is decided by the Minister of Fisheries based on recommendations from the Marine Resource Institute (MRI).[3, 4] Stock assessments are based on systematic research of the major fish stocks and the ecosystem. Before the MRI presents its advice to the Minister, the stock assessments and outlook are evaluated by the International Council for the Exploration of the Sea (ICES). The MRI also collaborates with other multi-national organisations, such as the Northwest Atlantic Fisheries Organization (NAFO), to evaluate the state of stocks outside Iceland's EEZ.

While TACs for cod, the most economically important species, typically exceeded the MRI's recommendations somewhat in the early years of the current management system, this ceased to occur following the adoption of a total catch rule in 1995-96, which aligned TACs and recommendations (Figure 4.2). Catches have, however, slightly exceeded TACs owing to various factors at various times, such as catches for research, economic incentives

Figure 4.2. **Recommendation, Total Allowable Catches (TACs) and actual catches of cod**



1. All catches must be landed. Fishing by foreign fleets is negligible.
2. A harvest control rule has been in place since 1995-96. It specifies the percentage of the biomass that may be caught.

Source: Marine Resource Institute and Fisheries Directorate.

StatLink http://dx.doi.org/10.1787/888932446037

(notably the right to overfish as by-catch, but with the fish concerned being sold at no profit to the fisherman) to counter discards and, in two consecutive fishing years (2008-09 and 2009-10), not deducting the coastal catches from quotas (such catches are now deducted). For mackerel stocks, which are not the focus of this study as they are shared with other countries and hence not fully controlled by the Icelandic fisheries management system, quotas set by the EU, Faroe Islands, Iceland, Norway and the Russian Federation have not been compatible with the International Council for the Exploration of the Seas' (ICES) scientific advice on sustainable catches (Box 4.2).

The success in keeping catches close to the recommended TACs is to some extent attributable to an efficient monitoring and enforcement system. Ensuring that the catches are not greater than the TAC is the task of the Fisheries Directorate, which receives records of landings for each vessel. Landings take place only in designated landing ports with certified weighs and weight personnel. The Fisheries Directorate uses a computerised catch registration system to collect, store, process and disseminate information on the catches of all Icelandic vessels. All ports of landing are connected to the Directorate's database and as soon as catch has been landed and weighed by authorised weigh-masters the results are entered into the registration system and sent to the Directorate. This ensures that the Directorate has up-to-date information on the catch of each vessel, classified by species, port of landing, fishing gear, fishing grounds and the buyers of the catch. This system makes it possible to deduct the catch from the quota of the relevant vessel.

Box 4.2. **The mackerel dispute**

The North-East Atlantic mackerel stock straddles a number of Exclusive Economic Zones (EEZs). It was co-managed by the EU, Norway and the Faroe Islands. In recent years, however, the mackerel stock has changed its migration pattern, probably due to changes in sea temperatures, and large quantities of mackerel have migrated into the Icelandic EEZ. In light of this change, Iceland requested to participate in the co-management of this fishery but was initially rejected by the other parties, who considered that Iceland was not a coastal state in this fishery. Iceland responded by unilaterally setting a national quota for its fisheries from this stock. In 2010, Iceland was finally recognized as a coastal state in the mackerel fishery and the four coastal states, as well as the Russian Federation, have since held regular consultations. They have not been able to reach agreement on the comprehensive management of the mackerel stock but have unilaterally set national quotas. The aggregated quotas considerably exceed the total allowable catch recommended by International Council for the Exploration of the Seas (ICES).

North-East Atlantic mackerel catches have been considerably in excess of ICES advice since 2007 (ICES, 2010). The main reasons for this overfishing are the absence of effective international agreement on catch limitation between all nations involved in the fishery as well as inter-annual transfer of quotas not fished in 2009 to 2010, discards, and estimated overshoot of catches.

To investigate whether illegal catches have been sold to processors, the Fisheries Directorate performs back-calculations. This is done by converting processed products into live weight and comparing the result with the legally registered catch landed in the relevant processing plant. If the investigation reveals that the weight of the converted product exceeds the volume of officially recorded catch, this is taken as a proof of illegal catches and results in fines on the relevant fish processing plant. The Coast Guard is responsible for at-sea surveillance of the fishing fleet, which includes regular monitoring of boats and gear and enforcing area and seasonal closures.

The other building block of fisheries management in Iceland is the ITQ system

The ITQ system was introduced in 1984 for the cod fishery and subsequently applied to other species (Table 4.1). With the Fisheries Act in 1990, all important fisheries were under an ITQ system. Under this system, each fishing entity owns or has a right to a certain percentage of the TAC in various species. These quotas are to a large extent tradable – quota share (permanent quota) can be sold and annual catch quota can be transferred between vessels, with some limitations. Small scale fishermen were originally excluded from the system and operated under effort limitations. Additional exceptions included measures such as regional quotas and special rules regarding long-liners.[5]

Table 4.1. **Chronology of the key steps in the evolution of the ITQ system in Iceland**

1984	Individual transferable vessel quotas in the demersal (near bottom living) species fisheries
1985	Effort quota option introduced into the demersal species fisheries
1988	Transferable vessel quotas in all fisheries. Effort quota option retained
1991	Comprehensive uniform system of individual transferable share quotas in all fisheries for all vessels over 6 Gross Registered Tonnes (GRT).
2004	Individual transferable share quotas for vessels under 15 GRT with special quotas for boats fishing with long-line.

Source: Arnason and Runolfsson (1999) and OECD.

A major advantage of ITQs over simply setting allowable catches annually is that ITQs give holders a strong interest in the fisheries resource being exploited in a biologically sustainable way. This ensures that the quotas continue to be valuable. These incentives in turn result in political pressure to limit TACs, which contrasts with pressure in other fisheries management systems, where industry participants have no incentive to restrain TACs as there is no guarantee that they will profit from the future increase in fish stocks.

Another advantage of ITQs is that they permit rationalisation of the industry to increase efficiency. In the absence of ITQs, the fishing fleet had expanded much more quickly than the catch, resulting in declining productivity and incomes. Following the introduction of ITQs, the overcapacity of the fishing fleet has declined and the average size of boats increased. Smaller fishermen sold their ITQs to larger fishing companies, which use larger, more efficient boats.

Since the introduction of the ITQ system the industry has become much more economically efficient, with labour productivity now higher than in the Norwegian and Swedish fisheries (Eggert and Tveteras, 2007). The increase in efficiency has lifted the value of the resource rent and hence, of licences. Recent estimates of the net resource rent amount to ISK 14-34 billion (0.9-2.2% of GDP) per year (Kristofersson, 2010 and Steinsson, 2010). This is in line with the experiences of other rights based management systems (see Arnason, 2002).

This economic success is shared with the other countries that operate ITQ systems such as New Zealand, Canada and Denmark (OECD, 2006; Arnason, 2002; Andersen *et al.*, 2010). Governments in these countries have also generally followed scientific evidence in setting TACs. By contrast, countries relying on traditional input controls have generally failed to prevent overfishing and overcapitalisation. This has, for example, been the case in many European fisheries (Commission of the European Communities, 2009). Politicians have frequently overridden scientific recommendations on TACs to increase their fishing industry's short-term income at the expense of its long-run survival. The pressures for politicians to behave in this way have been intensified by overcapacity in the industry, a phenomenon that also plagued Iceland before it introduced ITQs (OECD, 2006).

Resource rents could be increased by restricting fishing effort to below the level compatible with biological sustainability

Keeping TACs close to scientific recommendations may guarantee biological sustainability and yield a higher fisheries-resource rent than at higher TACs, but does not maximise the value of the rent, which is the most economically efficient outcome. Due to increasing marginal costs of fishing and the self-renewable nature of fish stocks, setting lower TACs would increase net rent from the fishery (Box 4.3).

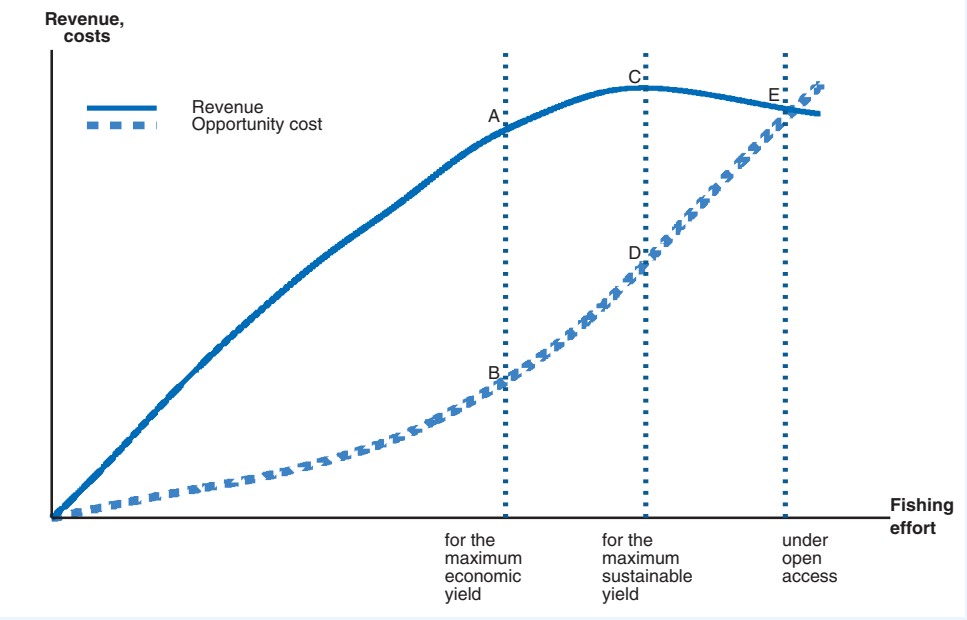
Box 4.3. **Incorporating economics when determining TACs**

From a fisheries management viewpoint the choice of the extraction level is important. Contrary to common belief, choosing the level that maximizes sustainable yields or catches is generally not the optimal policy, as demonstrated in Figure 4.3, which depicts the fundamental economic problem with managing fisheries. Figure 4.3 shows a theoretical revenue curve and a cost curve of general shapes. The cost curve shows economic cost, *i.e.* the opportunity cost associated with fishing activity. The revenue curve shows all the revenue that can be extracted from the industry, given the effort level. Both the revenue and cost curves reflect simple but common biological characteristics.

Box 4.3. **Incorporating economics when determining TACs** *(cont.)*

As Figure 4.3 is drawn, there is a simple relationship between effort on the one hand, and catches and revenues on the other. All the points on the revenue curve correspond to sustainable catches. Given such a relationship, the setting of TACs is equivalent to choosing effort levels that result in corresponding catches.

Figure 4.3. **The resource rent is lost in open fisheries**[1]



1. On the vertical axis, total revenue is drawn assuming a general biological growth function and assuming that prices are exogenous and that yields are sustainable. Total costs are economic costs (opportunity cost), taking into account the economic return on capital and also reflect common biological characteristics. The horizontal axis shows fishing effort, not catch volumes. Fishing effort is a vector of various inputs, such as fishing time, vessel size, engine power, labour and other factors.

There are three different effort levels shown on this graph that each have an important economic meaning:

- At the effort level (theoretically) associated with open access, rent is zero. As long as there is rent to be extracted from the fishery (*i.e.* where revenue exceeds opportunity cost) under open access, there is an incentive for new entry. This will continue until all economic rent has been dissipated (point E).
- The effort level associated with the maximum sustainable yield also corresponds to the level where sustainable catches are at their maximum (prices are exogenous). Rent, which is the difference between revenues and opportunity costs, is given at this point by the distance CD in the graph.
- The effort level that maximizes economic yield. At this point, rent, which is equal to the distance AB in the figure, is maximized. Due to increasing marginal costs of fishing and the self-renewable nature of the fish stocks, leaving more fish in the sea to grow than corresponds to maximum sustainable catches increases rent by lowering unit harvesting costs. This is the so-called stock effect.

Some progress has been made in how targeting the effort level associated with the maximum economic yield could be implemented in commercial fisheries (see *e.g.* Dichmont *et al.* [2010] and Larkin *et al.* [2010]).

Although the theory of restricting TACs to the effort level that maximises the resource rent instead of sustainable revenue is well established, there are few fisheries that are actually managed in this way. An exception is the Australian Northern Prawn Fishery. Estimates from this fishery point to substantial stock effects – stocks should be 9-26% bigger than the level that produces maximum sustainable catches (and revenues) to maximise resource rents. The harvest control rule for cod takes into account economic aspects and therefore partly addresses this for the cod stock, which is the most important one in economic terms.

For Iceland, Arnason (2011) estimates that cutting TACs from the level that maximizes sustainable catches to the level that maximises rent could increase rent in the cod fishery, which usually generates around one-third of the marine export value, from USD 240 million (in 2005) to around USD 667 million annually. The biggest part of this potential rent gain is due to a rebuilding of the cod stock, which was greatly overexploited in the past. A smaller part is due to reduced fishing effort and capital. These estimates are subject to various uncertainties but are nevertheless indicative. One should be careful to assume that such economic gains can be quickly realized as they would call for a difficult and costly transition. In view of these potential gains, scientists and policymakers in Iceland should aim to set TACs at levels that maximise the resource rent. In practice, this would mean that TACs should be set below, not above, the levels specified by the MRI. In the longer run, research work might help to estimate more precisely the rent-maximising catch. In the event that TACs are reduced towards the rent-maximising level, the government should increase the special fisheries resource rent tax to capture all of this estimated increase in rent. This should not affect the value of ITQs as this gain in fisheries rents has not been anticipated and hence, has not been capitalised into quota prices.

Nothing can be done now to correct the perceived unfairness of the initial free allocation of quotas

Despite the good performance of the ITQ system, it is under political pressure because quotas were initially allocated on the basis of fishing boats' average catches during the preceding three years instead of being auctioned off or sold. This initial distribution is widely perceived to have been unfair because the resource rent from this common resource accrued to those with catch history rather than the general public.[6] However, it should be borne in mind that this allocation of quotas was made in the context of placing limits on the right to fish, this being a move from an open access system.

The government could claw back the resource rent from quota holders either by increasing the fisheries resource rent tax (Box 4.4) to the point where ITQs have no value or, if it wanted to preserve the ITQ system, by confiscating ITQs and auctioning them. The problem with the first option is that the incentives that fishers have to lobby for lower TACs and to monitor other fishers – both of which increase the value of ITQs – would vanish. This would likely lead to an increase in catches and a decline in resource rents. The second option would avoid these pitfalls but, like the first option, could harm Iceland's reputation for protecting perceived property rights. Moreover, experience in other countries suggests that it is politically difficult to auction fishing rights owing to opposition from fishers who would have to pay for access to the resource that they already have (Box 4.5).

The current government set up a special committee and commissioned a report on what could be done to claw back the fisheries resource rent. The committee reported in summer 2010, and concluded that it was in many ways problematic to take back ITQs from

Box 4.4. **The current fisheries resource tax**

The current resource tax was introduced by Parliament in 2002 and replaced levies that previously financed the Fisheries Development Fund (*Þróunarsjóð sjávarútvegins*) and a levy for monitoring and surveillance. The tax is levied on all species. The effective tax is calculated in such a way that it depends both on the amount of quota held by the fishing firm as well as its economic performance. The reference period is the 12 months to 30 April in the preceding calendar year. The total catch value for that year is calculated and fuel, wages and other operating costs are then deducted. The total tax revenue for that fishing year equals 9.5% of this amount. The tax is then calculated per cod-equivalent by dividing total tax revenue by the catch on cod-equivalent kilos. This results in a tax per cod-equivalent kilo that is levied for the next fishing year.

A demonstrative example:

Total catch value May-April 2010-11	ISK 100 billion
Wages (39.8%)	ISK 39.8 billion
Fuel	ISK 10 billion
Other operating costs	ISK 24 billion
Base for tax	**ISK 26.2 billion**
9.5% of base	ISK 2.49 billion
Catch in cod-equivalent kg	450 million kg
Tax on cod-equivalent kg for fishing year 2010/2011 (ISK/kg)	**5.53 ISK/kg**

In this way the tax paid takes account of fluctuations in the profitability of the industry as well as the amount of quota issued the year before. The tax is paid for all catches. Hence, if the quotas are increased from last year, firms pay the tax per kilo on the increase as well. In the same way, if quotas are reduced, firms pay the tax for fewer kilos. In this way the taxation takes into account fluctuations in the catch between fishing years.

Box 4.5. **Other countries' experience in auctioning fishing rights**

A number of countries have proposed to auction fishing rights but have backed down owing to opposition from fishers who would have had to pay for a right that they currently enjoy free. This was the case in Estonia, for example (Eero *et al.*, 2005, OECD, 2009). Fishermen considered it unfair to pay for fishing rights while competing in international markets with fishermen who did not pay for such rights. At the same time the implementation of the auctions themselves became problematic as the bidders engaged in co-operative behaviour in the bidding process, which is a well-known problem in auction theory (Laffont and Tirole, 1983). Similarly, in Russia the auctioning of quotas was introduced in 2001 but was for all practical purposes abandoned in 2004 (Honnelund, 2005). The only seemingly successful case where fishing rights have been auctioned is in the Washington State Puget Sound geoduck fishery, which has specific characteristics and is managed under a devolved management system with extensive stakeholder participation (Huppert, 2005).

current holders and redistribute them, for example, through an auctioning mechanism. Such an action would not only be technically difficult but also unfair to existing owners, many of whom have bought a high proportion of the ITQs that they hold. Those that received quotas in the beginning may have benefitted from windfall gains but they can hardly be drawn back into state coffers by taking quotas from companies that bought them

at market prices. Taking quotas from the fishing companies would also have negative effects on the balance sheets of companies in the fishing industry and ultimately financial institutions if the companies went bankrupt. According to a recent study, a linear confiscation over a 20-year period would result in fishing companies that together hold 40-50% of the TACs in all species going bankrupt (Gunnlaugsson *et al.*, 2010).

The transferability of quotas has also been questioned for social and political reasons. The point has been made that the quotas are user rights to a common resource and those who receive such rights should profit from renting or selling those rights. From an economic viewpoint, the transferability of quotas is crucial to achieve economic efficiency. The quota market allows for an efficient reallocation of quotas as well as the easing of entry and exit into the fishery through the market system. A recent study shows that the quota markets are efficient (Agnarsson and Thrainsson, 2010). Trade in quotas is substantial, with around 35-40% of the total TAC being traded on the markets each year.

The special resource rent tax should be increased but not by so much as to undermine the ITQ system

Nevertheless, increasing the resource-rent tax beyond the cost recovery level would be attractive as a means of reducing the deadweight costs of taxation. From the point of view of economic efficiency, a resource rent tax is in principle the best tax as it does not distort economic decisions and hence has no excess burden (*i.e.* no costs beyond the amount of money raised) (Box 4.6). Increasing a resource-rent tax would thus make room for reductions in other taxes that have excess burdens, increasing economic efficiency and hence national income, although the gains are likely to be smaller for a resource tax on a self-renewable resource, such as fishing stocks, than for other natural resources, such as mineral deposits, because the tax affects the size of the rent on a self-renewable resource but not on a non-renewable resource. Accordingly, the benefits of reducing other taxes that distort economic decisions would need to be weighed against the costs of reducing the resource rent by progressively diminishing the value of quotas (which capitalise expected resource rents) and hence incentives to lobby for lower TACs and to monitor other fishermen, and of reducing the financial viability of fishing enterprises. This suggests that the special fisheries resource tax should be increased from the current level, which still does not quite cover the operating costs of the fisheries management system, but that the increase should not go so far as to undermine the political and monitoring benefits of the ITQ system or to jeopardise the financial viability of fishing enterprises. In the event that an increase in the special resource rent tax succeeds in creating a political consensus for the ITQ system, which has been lacking since its creation, the fishing industry would be compensated to some extent by increased certainty over their property rights.

Box 4.6. **The taxation of resource rents**

Rent from natural resources is usually defined as the returns from resource exploitation in excess of the opportunity cost of extraction. In theory, taxing resource rents is non-distortionary as it does not alter investment or production incentives (Grafton, 1995, 1996, Miller *et al.*, 2000). The implementation of resource taxes, however, poses practical challenges.

Box 4.6. **The taxation of resource rents** *(cont.)*

The historical roots of the non-distortionary nature of resource taxes date back to Ricardo (1821) when analyzing resource rents from land. The basic justification is that land is a fixed and indestructible input in production which generates land rents. Taxing those rents does not reduce land use and is therefore seen as an ideal tax base. Rent taxes have been used extensively in resource based industries such as mining, but also in fisheries. Australia has recently adopted a special Mineral Resources Rent Tax (MRRT) which is based on the concept of a Brown tax (Brown, 1948), where a tax is levied on all real transactions on a cash flow basis. As cash flows can be positive or negative, the MRRT has been modified in a way to deal with such fluctuations as well as with the time inconsistency of tax revenues and tax rebates.

Although the theoretical superiority of resource rent taxes is widely accepted, there are some important issues which should be kept in mind when it comes to self-renewable resources, like fish stocks. In particular, in analysis of resource rents it is assumed that they depend on an input factor in fixed supply, which is not the case of fish stocks, that linear extraction technologies are used and that firms are identical. However, rents are not fixed in fisheries and can be expanded in various ways. Examples include: productive investment in fish stocks and habitat; finding new fishing opportunities (innovation); improving fishing practices; and developing new products. One of the tasks of fisheries management and economic policy in general is to encourage the expansion of such rents (Anderson, Arnason and Libecap, 2010).

As taxing resource rents discourages firms from expanding them, it distorts economic decisions, leading to costs (*i.e.* excess burden) in excess of the amount of revenue raised. If the rent is completely removed by taxation, there are no more incentives to expand it. This means that the rebuilding of fish stocks is not in the interest of the fishers and must be implemented by command-and-control measures.

This does not mean that resource taxes should not be considered as a tool for collecting rent from fisheries. Rather, the fisheries resource rent tax should be set at a rate where its marginal excess burden is no higher than for other taxes.

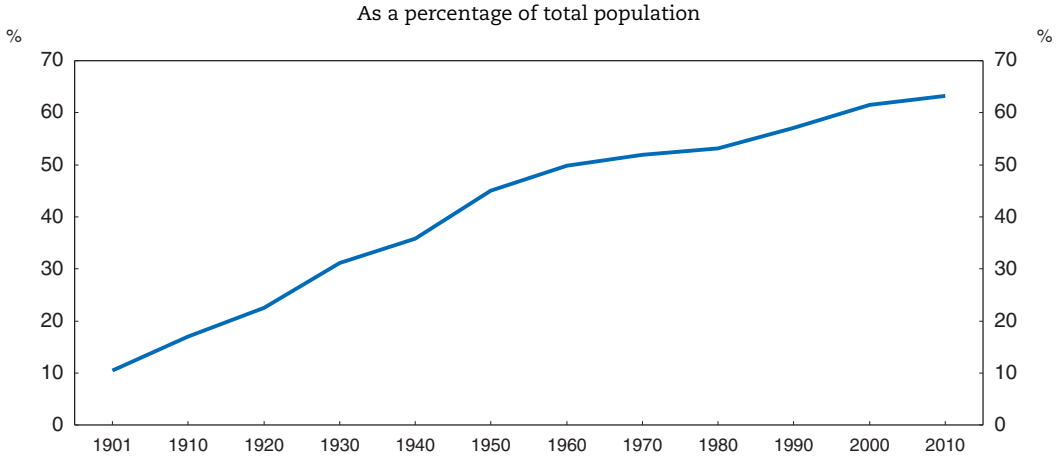
The fisheries management system should not be undermined in the pursuit of social objectives

The increases in efficiency in the fishing industry in recent decades have taken a toll on employment opportunities in rural areas highly dependent on the fishing industry. In part, this has been caused by the success of the ITQ system in encouraging rationalisation of the industry and thus increased efficiency. Fishers in these areas have sold their quotas to more efficient operators elsewhere. The decrease in labour use in the fishing industry due to technical advances, where machines have taken over manual labour, has also been a factor.[7] Yet another factor has been the decrease in TACs, which has been necessary to secure the sustainability of the fish resources.

This has raised concerns about population loss in these areas. However, migration from rural areas to the capital area is not a new phenomenon (Figure 4.4). In the 20th century, Iceland changed from being a rural society to having more than half of the population living in the capital and adjacent municipalities.

Figure 4.4. **Population living in the capital area**

As a percentage of total population



Source: Statistics Iceland.

StatLink http://dx.doi.org/10.1787/888932446056

The government has introduced various measures to work against the migration from the countryside to the capital area. The fisheries management system has partly been used to that effect. As has been mentioned already, the small scale fishers were exempt from the ITQ system when it was first implemented, mostly due to fears that they would be bought out of the industry. Various measures were taken to safeguard their livelihoods while at the same time there was an increased pressure on this fleet to adopt some form of quotas to limit their catches. To increase employment in coastal communities, fishers using a long-line that is baited onshore have been allowed to double their catches in demersal (living near the bottom) species.

Since 2009 specific catch quotas have been allocated to so-called coastal fishing to support small scale fishermen in rural areas. Boats that operate under this system must obtain a special licence from the Directorate of Fisheries. They may only catch during specified times of the day. Those boats may only use hand-lines and their catches per fishing trip are limited. Once the total allowed catches have been reached, all those licences are suspended. Some of the fishermen allotted licences for coastal fishing are former quota holders who have sold their quotas. In this way they re-enter the fishery after having already sold out. The coastal fishery is notably less efficient than the ITQ fleet managed with a cap on catches and days at sea limits.

All such exemptions have a negative effect on the efficiency of the fisheries management system. Keeping in mind the importance of the fisheries to the Icelandic economy, the government should be cautious in making amendments to the Fisheries Act that weaken the ITQ system by authorising such measures. It would be preferable to use other measures to strengthen rural areas, such as investments in infrastructure and education.

Iceland is negotiating to maintain the key features of its fisheries management system in its EU accession negotiations

Iceland is currently negotiating conditions for its possible accession to the European Union (EU). Joining the EU means that Iceland would participate in the Common Fisheries Policy (CFP). The EU has generally not succeeded in setting TACs at sustainable levels and faces huge challenges with regards to economic efficiency (see OECD, 2010, Commission of the European Communities, 2009). The EU is currently revising the CFP with a view to

making it more effective in achieving its objectives. Given the economic and political significance of the fishing industry, the special conditions that Iceland is able to negotiate for the sector will have an important bearing on whether joining the EU is attractive to Icelanders or not. The Icelandic authorities plan to negotiate to maintain the key features of Iceland's fisheries management system that underpin efficiency and sustainability – the right to set TACs nationally based on scientific advice and the rights based management system (ITQs) – as well as foreign ownership restrictions on ITQs (see below).

It is possible under EU rules for individual member countries to manage some of their fisheries with ITQ systems. As for other EU member states, the Common Fisheries Policy (CFP) defines the overall framework for the management of fish resources for these countries. One of the main elements of the CFP is that TACs allocated to member states for specific species and areas are based on the principle of relative stability. This means that fishing opportunities are allocated among the member states in such a way as to ensure the relative stability of the fishing activities of each member state for each stock concerned. According to this principle, national TACs are based on historical catch levels and imply the maintenance of a fixed percentage of authorised fishing effort for the main commercial species for each member state. Another element is an overall capacity ceiling for national fleets to hinder overexpansion. Due to the principle of relative stability, countries have the flexibility to manage their fisheries according to their national legislation, as long as it does not circumvent the CFP general framework. As examples, the Netherlands introduced an ITQ system for the sole and plaice fisheries in 1976 and in Denmark ITQs have been used since 2003 (Andersen, *et al.*, 2010).

There are currently restrictions on foreign ownership in the harvesting sector. Direct foreign investment is prohibited but companies that are up to 25% foreign-owned (33% in some circumstances) may own fisheries companies. Combined indirect ownership is allowed up to 49%. Such restrictions on ownership are permitted under the European Economic Area agreement. It is unlikely that such restrictions would be allowed if Iceland were to join the European Union.

Provided that the ITQ system can continue to be enforced, removing the restrictions on foreign ownership of ITQs should not pose a problem for industry efficiency. Foreign owners of ITQs, like their domestic counterparts, would have an incentive to lobby for TACs to be constrained to a level that maximises rents, and hence the value of the quotas, and to monitor quota enforcement.

Removing the restrictions on foreign ownership of ITQs is, in any case, unlikely to provoke large scale sales to foreigners. So long as foreign-based fishing companies are not able to reduce labour costs by replacing Icelandic fishing crews with lower-paid foreign crews and do not receive direct subsidies or transfers for Icelandic companies acquired, there is no reason to believe that they would have a lower cost structure and, therefore, systematically be prepared to pay more for Icelandic companies to acquire their ITQs than domestic investors. Icelandic fishing companies are already amongst the most efficient in the world, reducing the scope for foreign investors with plans to raise efficiency to outbid local investors. Even in the event that foreign companies did not have to respect Iceland union-based wage minima, giving these companies a potential cost advantage over their Icelandic rivals, it is still unlikely that there would be large scale sales to foreigners because domestic companies could replicate this cost advantage by transferring their ITQs to foreign subsidiaries and hiring cheaper foreign crews.

If foreign companies do not have to respect Iceland union-based wage minima, there is a risk that removing restrictions on foreign ownership of ITQs could result in a loss of employment for Icelandic fishers, although it would be limited by their higher productivity stemming from local knowledge of Icelandic fishing grounds, fishing techniques and handling. In view of this risk, it would be preferable to have a transition period for the removal of restrictions on foreign ownership of ITQs to reduce adjustment costs of transferring labour from the fishing industry to other activities.

There is also a risk of foreign owners relocating processing facilities, although it is difficult to see why Icelandic fishing companies would not already have done so if this were profitable, especially as they have already acquired fishing companies in other countries. Icelandic companies appear to have found that proximity to fishing grounds and the availability of immigrant labour have made it attractive to keep processing in Iceland. In the event that such facilities were to be relocated, the transition period for the removal of restrictions on foreign ownership of ITQs referred to above would help to reduce the adjustment costs of transferring labour and capital to other uses.

The entry of foreign vessels into Icelandic waters would be unlikely to affect the system of enforcement. The bulk of Icelandic catches are landed and processed in Iceland or on-board Icelandic freezing trawlers. The Icelandic surveillance and monitoring systems are highly developed and verification of catches is not a major problem in Iceland, although discards occur as in most other fisheries. Foreign vessels would be subject to the same, effective system of surveillance as Icelandic vessels to hinder illegal catches and unreported landings.

Reducing the Icelandic fishing industry's Greenhouse Gas (GHG) emissions

Iceland has adopted ambitious targets for reducing GHG emissions (30% below the 1990 level by 2020). While significant reductions in the fishing fleet's emissions have already been achieved – from 655 Gg in 1990 (38% of emissions from fuel combustion) to 517 Gg in 2008 (27% of emissions from fuel combustion) – further progress will be required given the importance of the industry in total emissions if Iceland is to meet its emission reduction targets.

In 2009, a Committee appointed by the Minister of the Environment published a report on reducing GHG emissions (Ministry for the Environment, 2009). According to the report, from a purely technical viewpoint the fishing industry can contribute considerably. Emissions from fish meal factories could be reduced by almost 100% by using electricity rather than burning fuel. Similarly, emissions of the fishing fleet could be reduced by 75% by increased use of bio-fuels and energy saving measures. Considerable costs would be involved in such a transformation, especially in securing reliable electricity for fish meal plants, which would call for large investments in electrical power plants and infrastructure.

A recent study (Bernódusson, 2010) indicates that the growing of rapeseed and the transformation of rapeseed oil into bio-fuel is a promising way to mitigate the GHG emissions of the fishing fleet. Whether domestically grown rapeseed oil, or other bio-fuels, will replace more traditional fuels depends on many factors, including oil prices.

Concerning the GHG emissions of the fishing fleet, there are currently no fossil fuel subsidies or tax expenditures for Icelandic fishing vessels. However, the fishing fleet does not pay a special road and infrastructure tax on its fuel, in common with other off-road

users. Revenue from this tax is not higher than necessary to fund road development and maintenance. Accordingly, exemption from it should not be considered as an indirect subsidy.

A carbon tax is levied on all fossil fuels used for combustion. This tax was introduced at the beginning of 2010. In the beginning, it was set at approximately 50% of the annual average price of emission rights on the EU ETS (Emission Trading Scheme) auction market. At the beginning of 2011, this rate was raised to 75%. The tax is based on the carbon content of fuels and is thus different for different fuel types. If such a carbon tax is not levied on competing fishing fleets, this could lead to the Icelandic fishing becoming less competitive on the global market.

The substitutability between fuel and other inputs is inelastic and fuel use is mostly determined by the amount of catches and the effort exerted. With rising oil prices, Icelandic fishing firms have concentrated more than before on fuel efficiency and the possibility of moving away from fossil fuel. Fuel consumption of the fishing fleet has in fact been steadily decreasing over the last few years and according to forecasts it may further decrease by 10% until 2050 (Orkuspárnefnd, 2009). However, higher oil prices have incited vessel owners to replace standard vessel fuel with more crude oil, which increases emissions (*ibid*. pp. 10). The carbon tax should reduce this effect by raising the price of crude oil relative to standard vessel fuel. Even so, policymakers should look into the effects of fuel prices and taxation on substitutability between different fuels and the effect on emissions.

Notes

1. Foreign vessels caught around one fourth of the haddock and around half of the saithe and redfish at this time.
2. There are, however, a few fisheries that Iceland shares with other nations, notably the Norwegian-Icelandic herring stock, capelin and more recently, mackerel.
3. The MRI is an independent research institute which conducts stock assessments and fisheries advice in conformity with international criteria and is active in the international scientific community, such as the International Council for the Exploration of the Sea (ICES).
4. Although the mainstay of the fisheries management system is the setting of the TAC, there are numerous other fisheries management measures in place, such as area closures (temporary and permanent) and restrictions on fishing gear.
5. Fishers using a long-line which is baited onshore may double their catches in demersal (living near the bottom) species. This exception is to increase employment in coastal communities.
6. The initial allocation of quotas and the accompanying barring from entry of others than quota holders has also been contested by the United Nations High Commissioner for Human Rights, who concluded in 2007 that there had been a violation of the equality principle inherent in Article 26 of the International Covenant on Civil and Political Rights (Views, adopted by the Human Rights Committee on 24 October 2007, concerning communication No. 1306/2004: *http://eng.sjavarutvegsraduneyti.is/news-and-articles/nr/9306*). It is clear that this conclusion goes against the conclusions of Icelandic national law.
7. However, there has been an increase in the number of people working in the fish processing industry since 2007 and the number of fishers has increased since 2008. The reasons for this increase in the number of labourers have not been thoroughly studied. Fluctuations in catches and catch composition can play a role in explaining this increase. There has been a slight increase in the number of part-time workers in Iceland since 2008, but data on how much of that increase is in the fishing industry are not readily available.

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(10 2011 10 1 P) ISBN 978-92-64-09320-1 – No. 58123 2011

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Please cite this publication as:

OECD (2011), *OECD Economic Surveys: Iceland 2011*, OECD Publishing.
http://dx.doi.org/10.1787/eco_surveys-isl-2011-en

Volume 2011/11
June 2011

OECD publishing
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ISSN 0376-6438
2011 SUBSCRIPTION (18 ISSUES)
ISSN 1995-3240
SUBSCRIPTION BY COUNTRY

ISBN 978-92-64-09320-1
10 2011 10 1 P