



Central Bank of Iceland

Lessons from the financial crisis in Iceland

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The recent Icelandic saga

Two separate but interrelated sub-stories:

1. Iceland's boom-bust cycle and problems with macroeconomic management in small, open, and financially integrated economies
2. The rise and fall of three cross-border banks on the basis of EU legislation (the European "passport")

The two converged in a tragic grand finale in early October 2008, when Iceland's three commercial banks failed and were placed in special resolution regimes.



Plan of the presentation

- The build-up of macroeconomic imbalances
- The rise of the cross-border banks
- The crisis and the crisis management
- Policy responses
- The recession
- Stabilisation and recovery
- The lessons



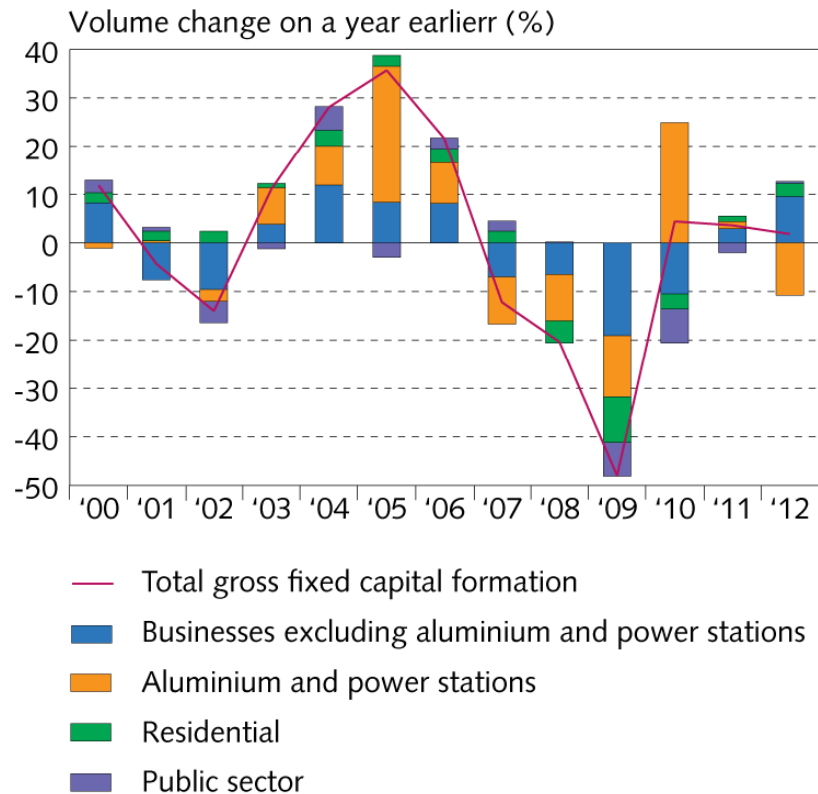
Macroeconomic imbalances



Build-up of domestic imbalances

Started as a positive FDI shock

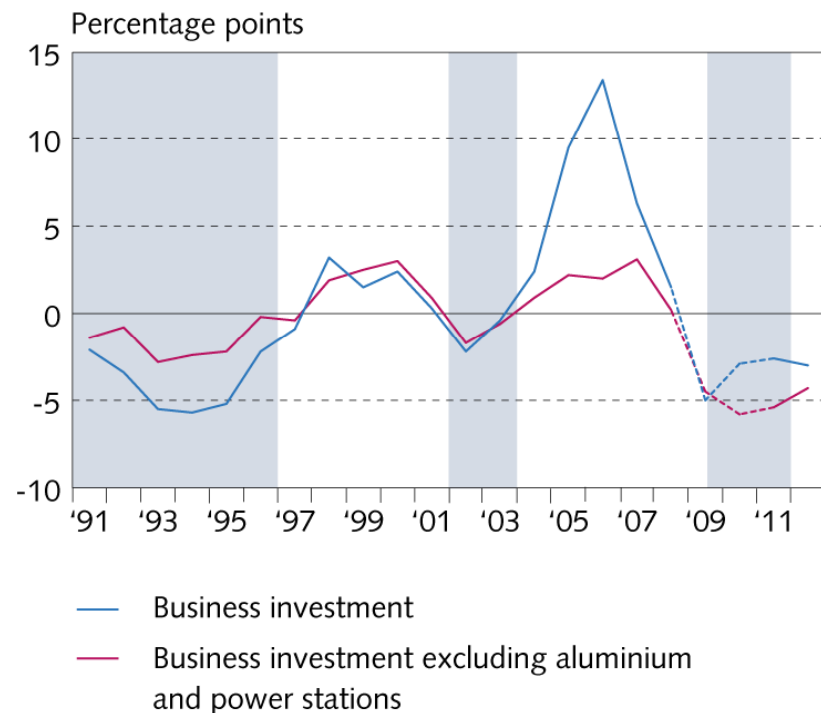
Gross fixed capital formation and contributions of its main components 2000-2012¹



1. Central Bank baseline forecast 2009-2012.
 Sources: Statistics Iceland, Central Bank of Iceland.

Business investment as % of GDP 1991-2012¹

Deviation from average for 1970-2007



1. Central Bank baseline forecast 2009-2012. Shaded areas show periods with negative output gap.

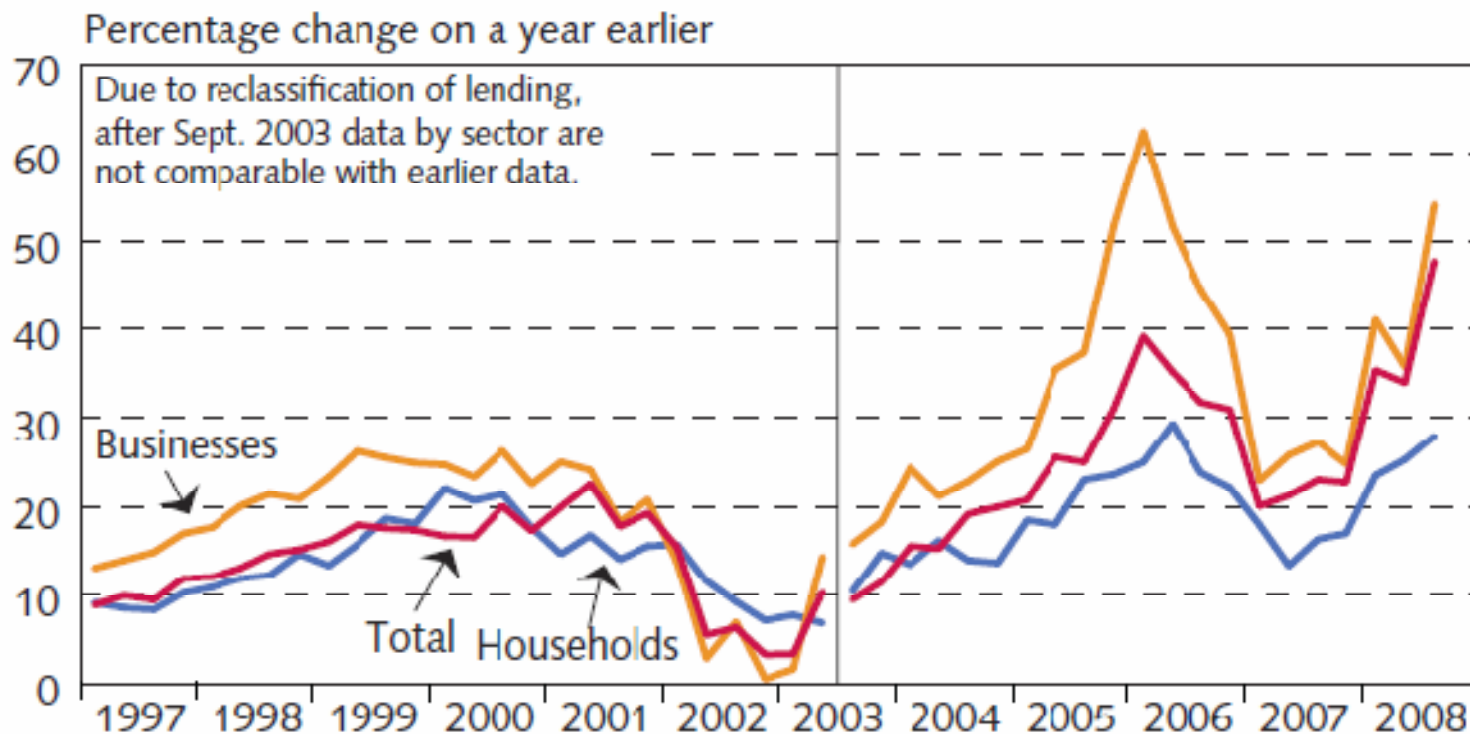
Sources: Statistics Iceland, Central Bank of Iceland.



Build-up of domestic imbalances

Credit boom following privatisation of the banks

Credit system lending growth Quarterly data

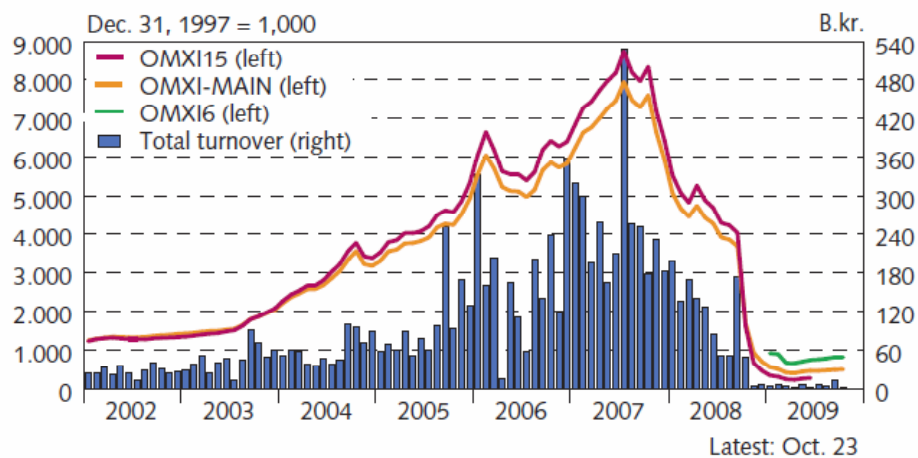




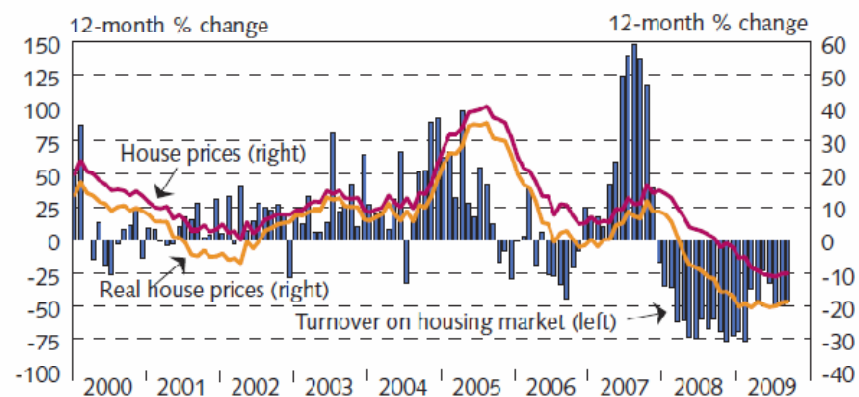
Build-up of domestic imbalances

Fuelling asset price bubbles

OMXI equity market
Monthly turnover and equity prices



Residential housing in Greater Reykjavík
Monthly turnover and prices

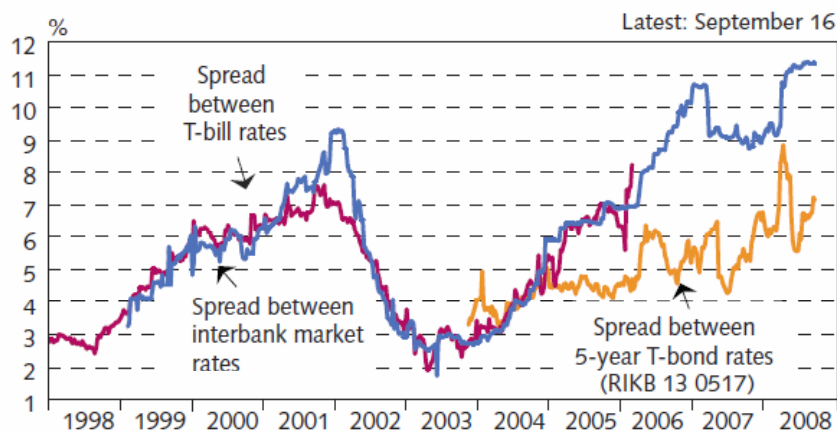




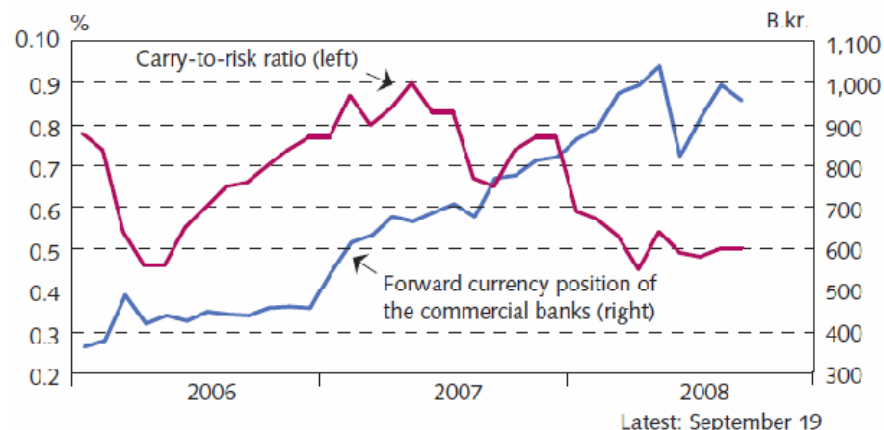
Build-up of domestic imbalances

Wide interest rate differential encouraged carry trade

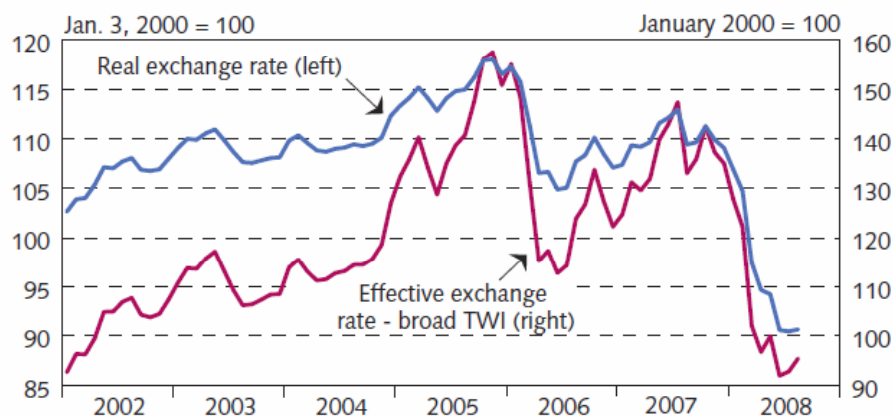
Interest rate differential with abroad
Weekly data



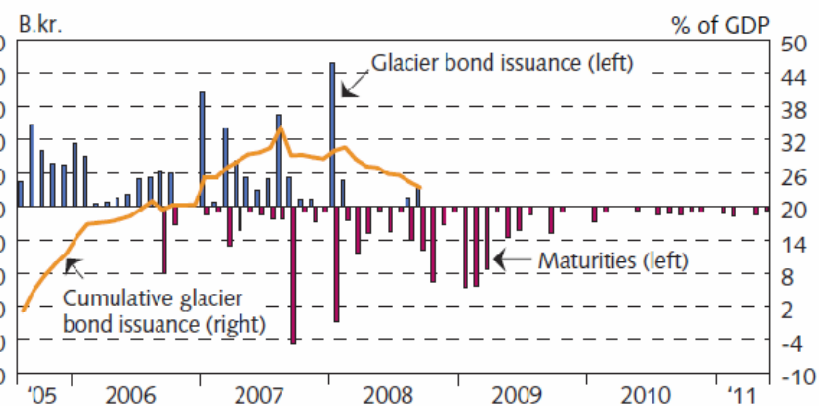
Carry-to-risk ratio and forward currency position of the commercial banks
Monthly data



Nominal and real effective exchange rate of the króna
Monthly averages



Króna Eurobond issuance¹
Monthly data



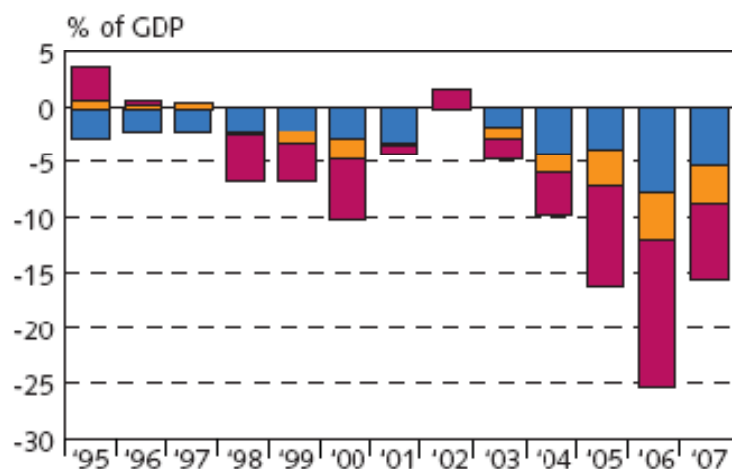


Build-up of domestic imbalances

Iceland's economy was vulnerable to the global crisis

Chart VII-1
Current account balance components¹

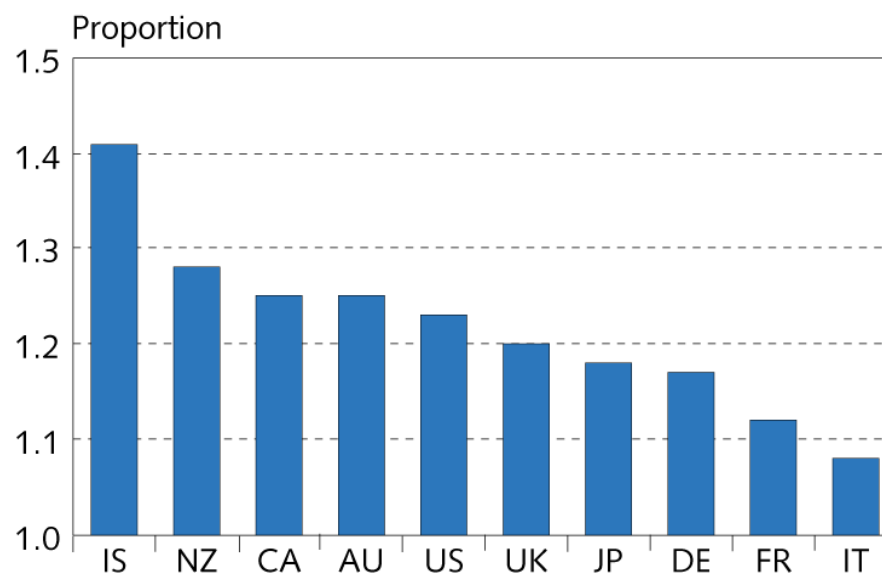
Annual data 1995-2007



- Merchandise account balance
- Service account balance
- Income account balance

1. Net current transfer is included in balance on income.
Sources: Statistics Iceland, Central Bank of Iceland.

Total household assets as proportion of net wealth at year-end 2007¹



1. IS: Iceland, NZ: New Zealand, CA: Canada, AU: Australia, US: United States, UK: United Kingdom, JP: Japan, DE: Germany, FR: France, IT: Italy.

Sources: OECD, Reserve Bank of Australia, Reserve Bank of New Zealand, Central Bank of Iceland.



The rise of the cross-border banks



The European Economic Area

- Iceland became a member of the EEA in 1994
- Free movement of capital
- European “passport” for financial institutions headquartered in any country within the area
- Common legal and regulatory framework ...
- ... but supervision, the safety net (e.g., deposit insurance and LOLR), and crisis management and resolution remained largely national
- There was a built-in vulnerability/risk in this setup, especially for small countries outside the euro area



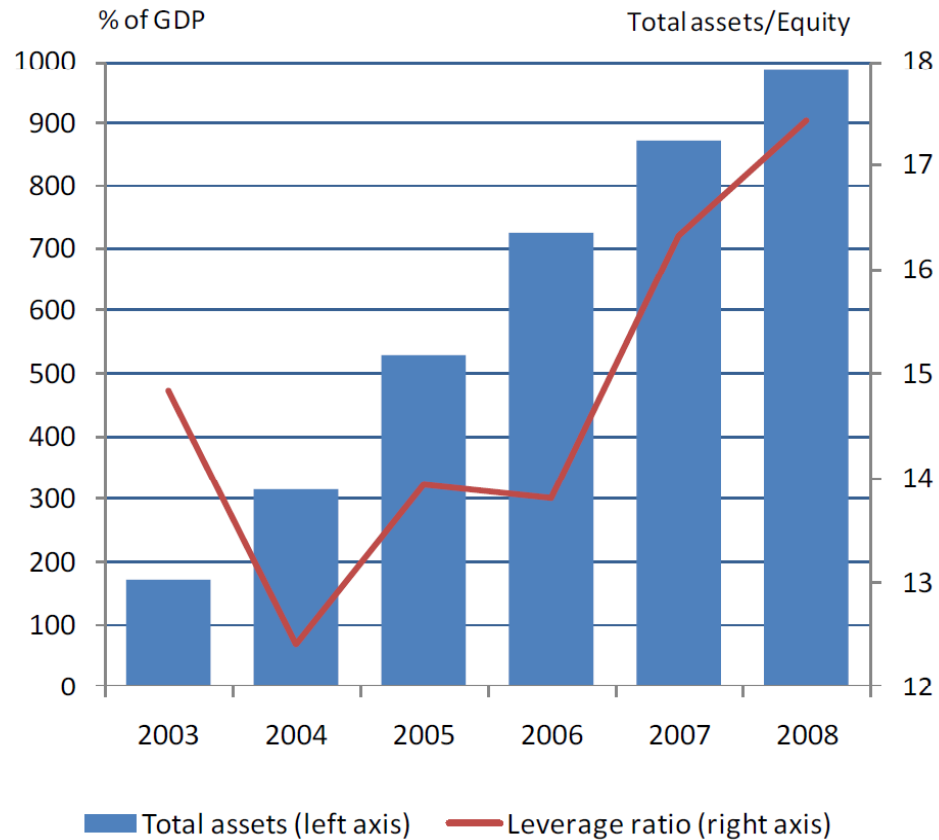
Consolidation and privatisation

- The Icelandic banks began consolidating in the 1990s.
- They were gradually privatised from the late 1990s, a process largely completed in 2003.
- Based on the EU “ passport,” Icelandic banks grew very rapidly by expanding their activities abroad, for the most part by acquiring financial institutions in other countries, opening up bank branches, and stepping up foreign operations.



Rapid expansion of the banks

Banks' balance sheet expansion and leverage



Consolidated accounts of three largest commercial banks. 2008 data is end-June.

Source: Central Bank of Iceland.

Geographic dispersion

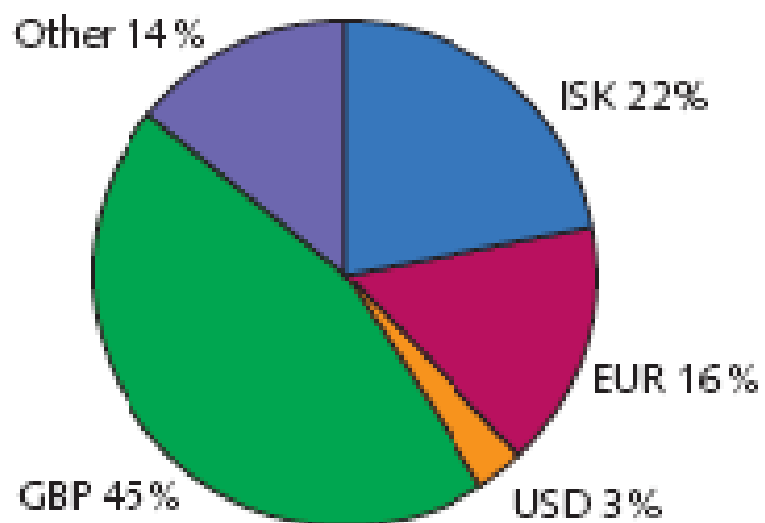


- 41% of total assets in foreign subsidiaries
- 60% of total lending to non-residents and 60% of income from foreign sources
- Over 2/3 of total lending and deposits in foreign currency
- **Kaupthing – operated in 13 jurisdictions:** Austria, Belgium, Denmark, Dubai, Finland, Germany, the Isle of Man, Luxembourg, Norway, Qatar, Sweden, Switzerland, and the UK.

Chart 13

Currency composition of deposits 2007¹

Deposits to customers

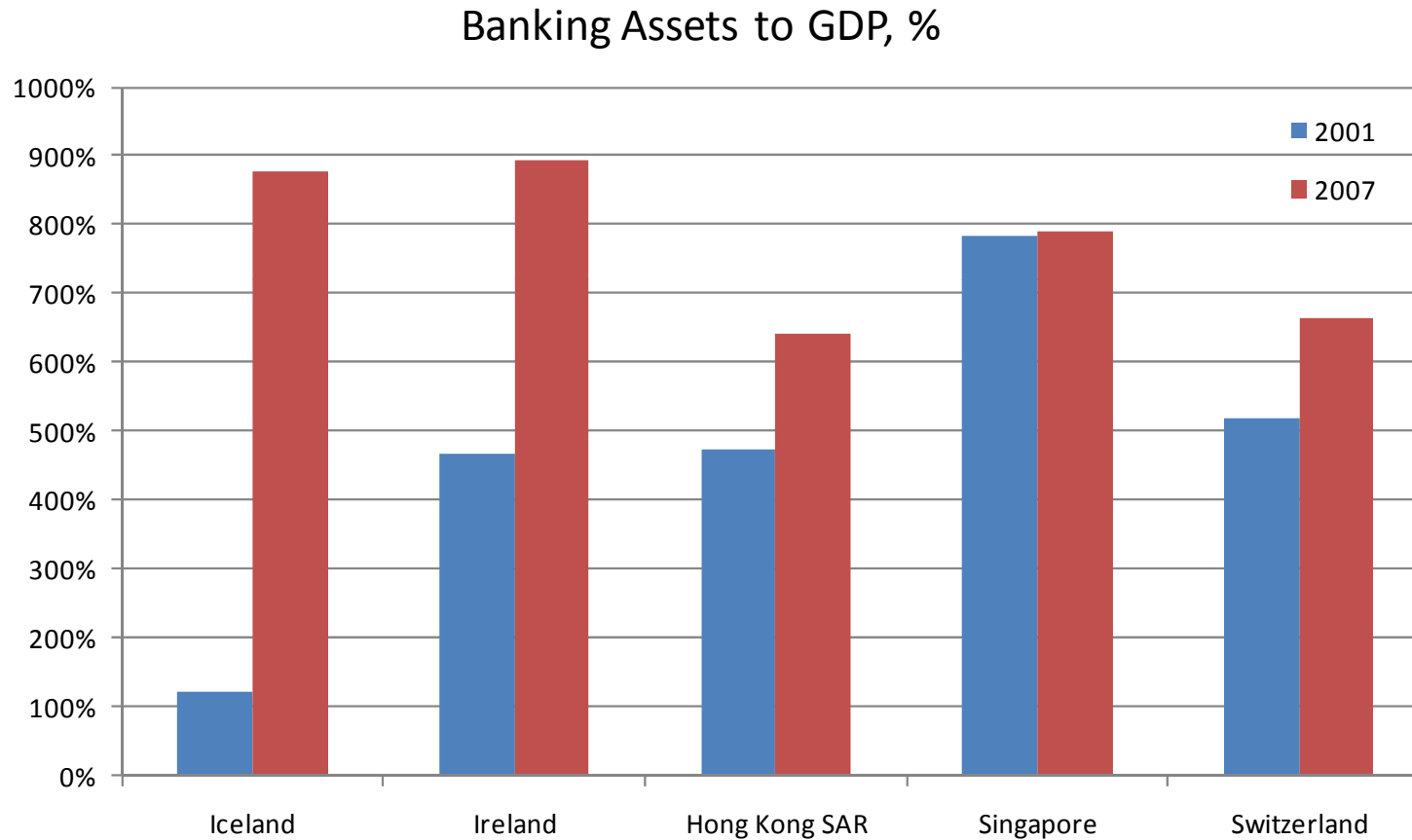


1. Largest commercial banks' consolidated accounts.

Sources: Commercial banks' annual reports, Central Bank of Iceland.

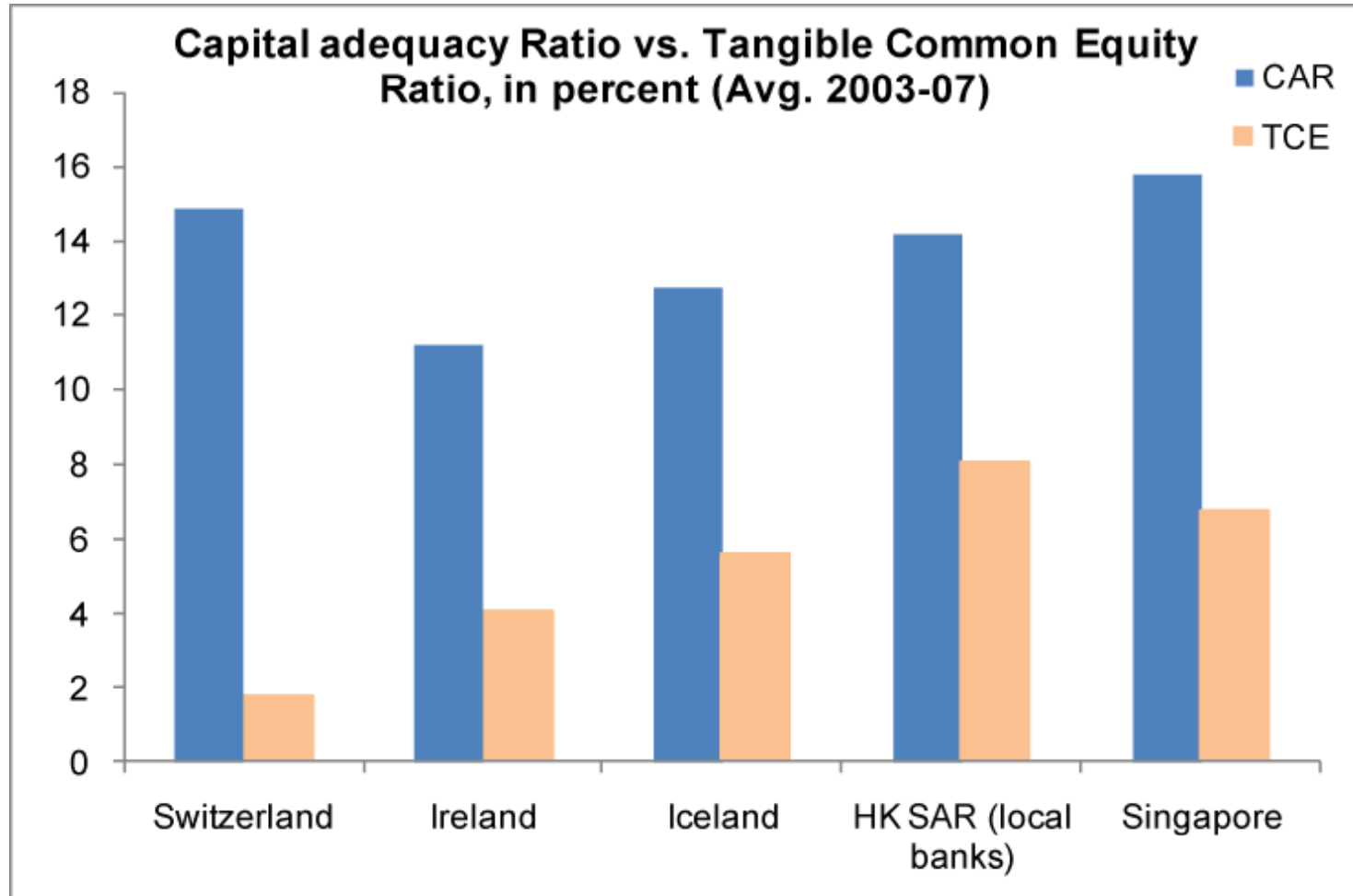


Small countries - big banks



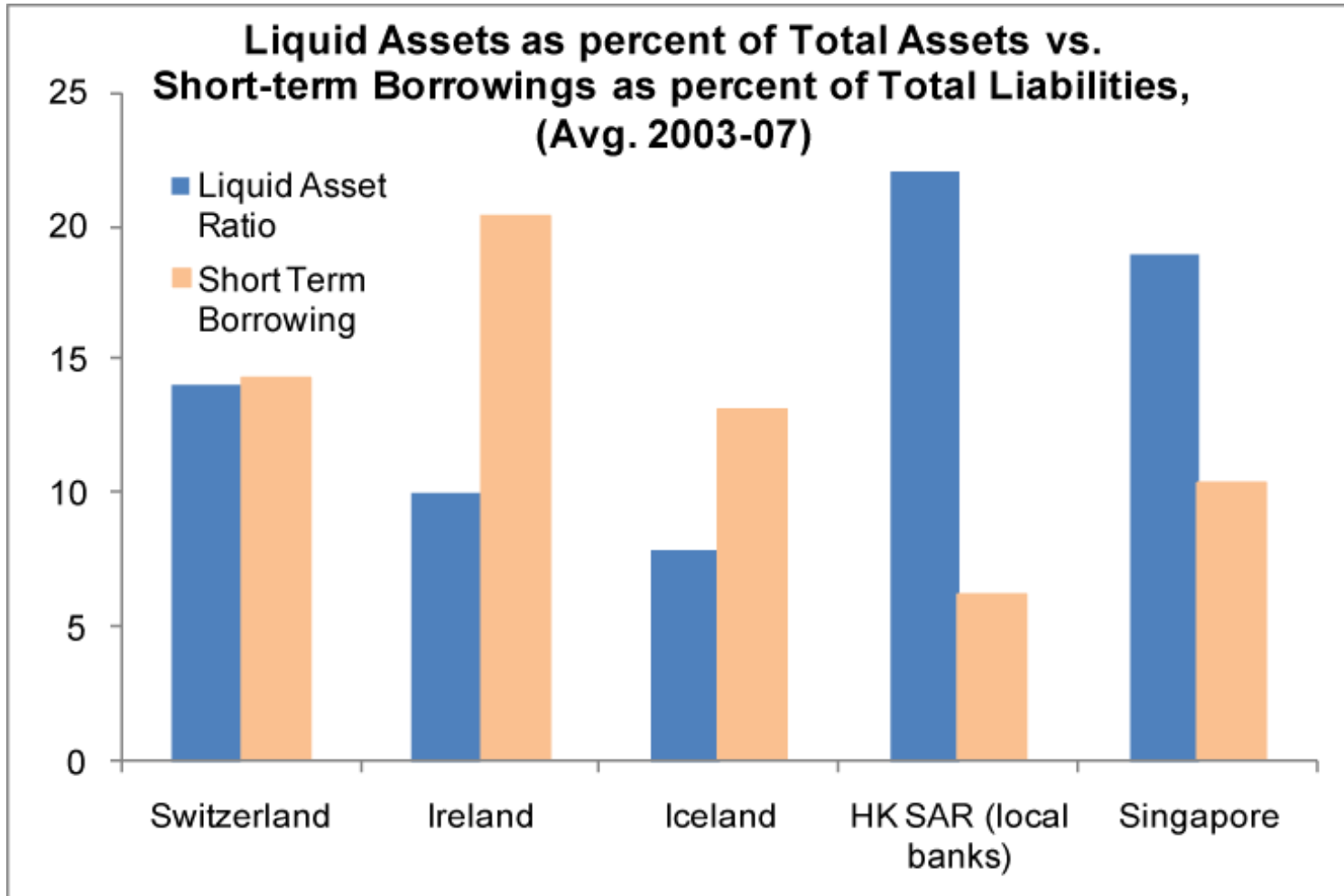
Source: IMF: Cross-Cutting Themes in Economies with Large Banking Systems

Not outliers in terms of capitalisation





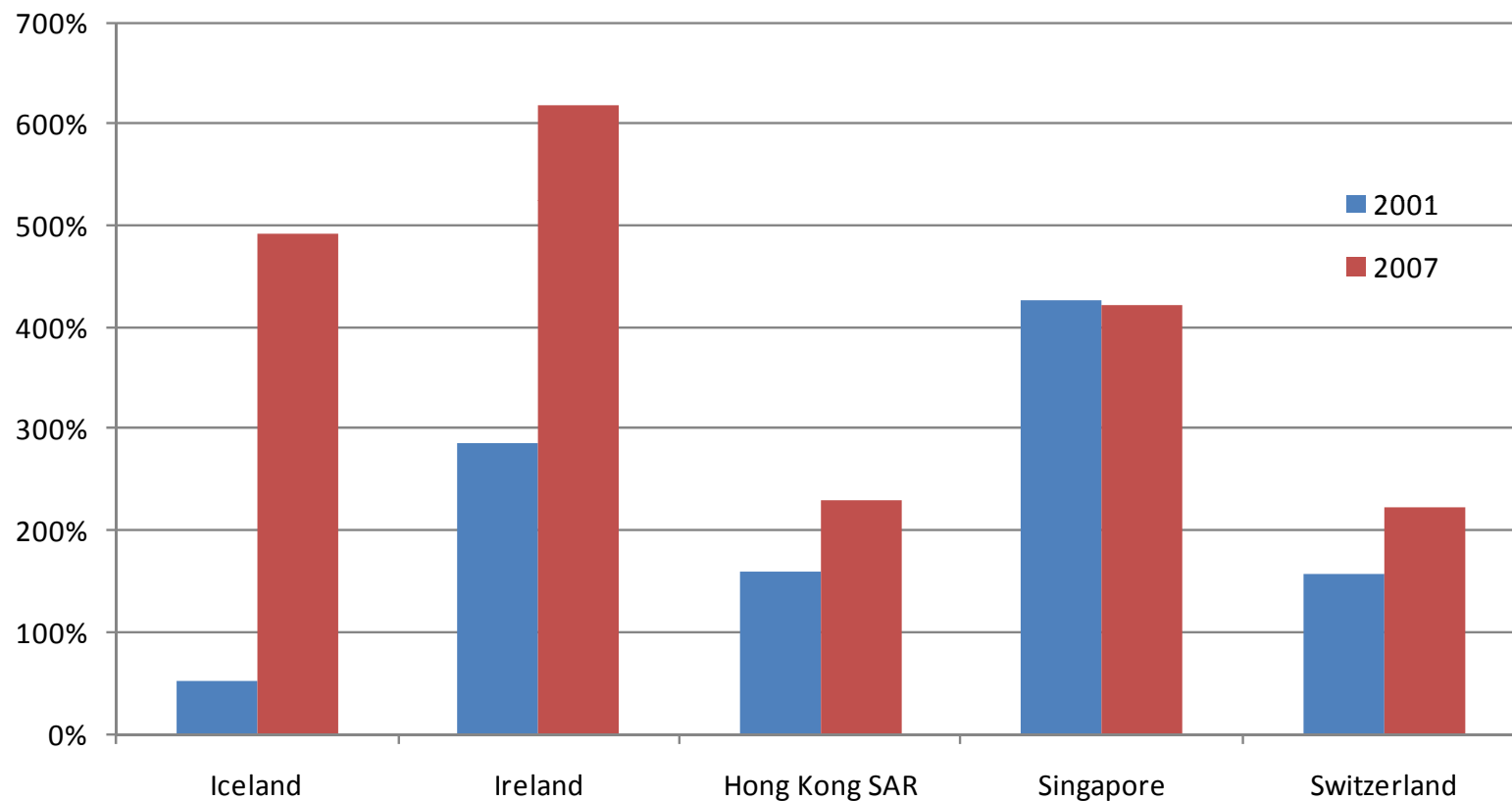
Somewhat weaker in terms of liquidity





Icelandic banks had the largest foreign currency liabilities in relative terms

Banking External Debt Liabilities to GDP, %





The warning: Mini crisis of 2006

- Icelandic bank's experienced significant drop in equity prices and the currency fell with them
- But they cleaned up their act somewhat
- Started collecting foreign deposits, largely in branches – made the likelihood of failure less but the impact much bigger – Iceland is still suffering the consequences – e.g. Icesave
- Then global risk appetite returned
- And some of the rating agencies took the Icelandic banks to AAA!!!!!!!!!!

Some key metrics as of June 30, 2008



	Kaupthing	Landsbanki	Glitnir
CAD ratio	11.2%	10.3%	11.2%
Tier 1 ratio	9.3%	8.2%	8.0%
Leverage ratio	15.1	20.0	19.3
Equity/tangible assets	5.2%	4.0%	3.6%
Bond maturity	5y	5y	3.2y
Deposits/funding	32.3%	72.4%	20.8%
Liquidity ratio	1.95	1.74	1.52

But there were hidden vulnerabilities



As of 30 June 2008	Official	Less “weak” capital
CAD ratio	11%	7%
Tier 1 ratio	9%	5%
Equity/tangible assets	6%	3%
Leverage ratio	16	31
Bond maturity	5y	5y
Liquidity ratio	1.7	1.7

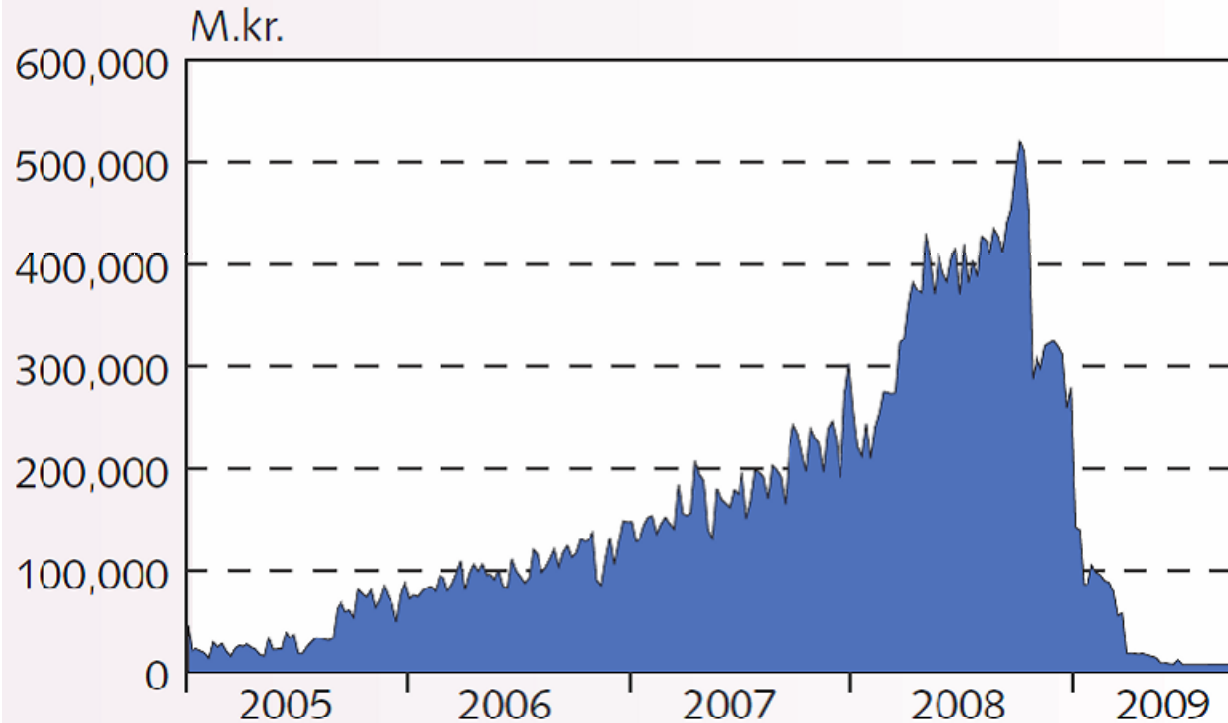
“Weak” capital is bank equity financed by lending from the banks themselves.



The banks became increasingly reliant on CB liquidity

CBI collateral lending 2005-2009

Weekly position January 4, 2005 - September 30, 2009



Source: Central Bank of Iceland.

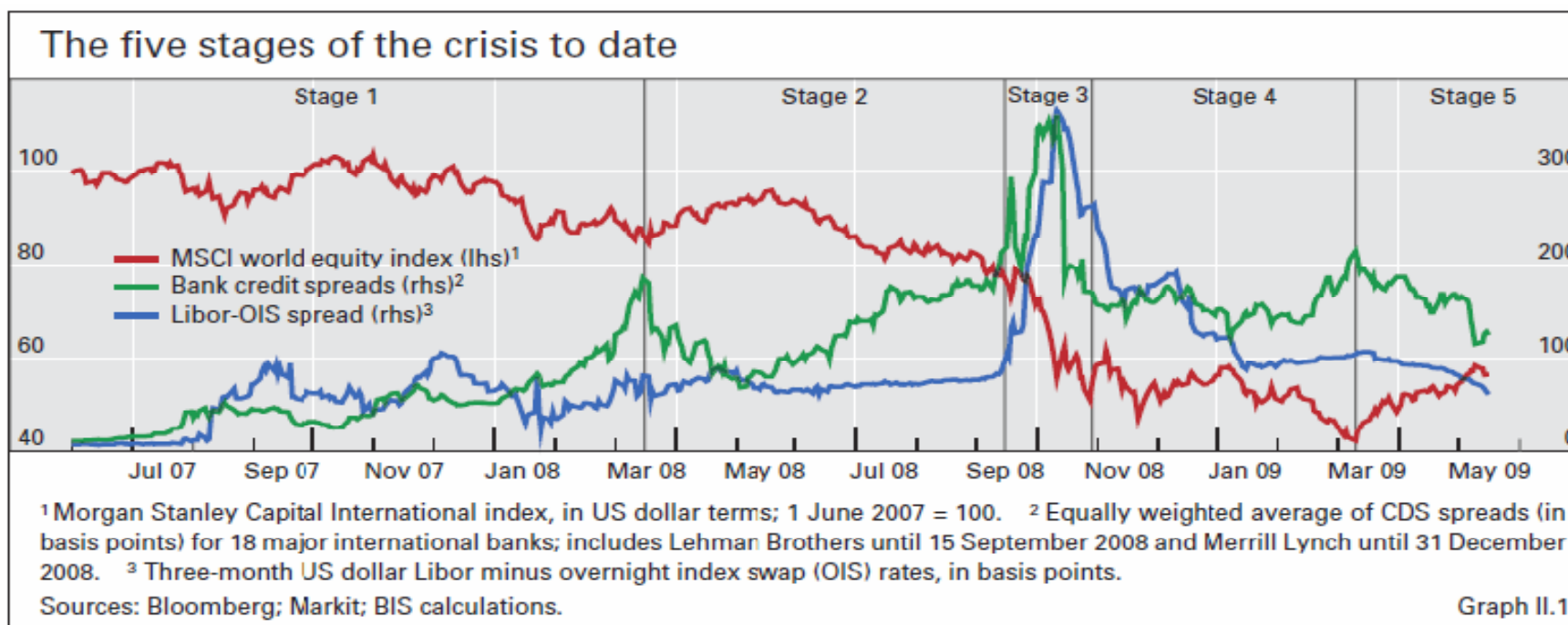


The crisis and crisis management

As the global financial crisis reached its climax..



- 15/9 2008: Lehman Brothers files for Chapter 11 bankruptcy
- 16/9 2008: A large US money market “breaks the buck”, support given to AIG
- 18/9 2008: Coordinated central bank measures to address US dollar funding squeeze, the other Nordic CB participated but not the Central Bank of Iceland





... the Icelandic banks' collapsed

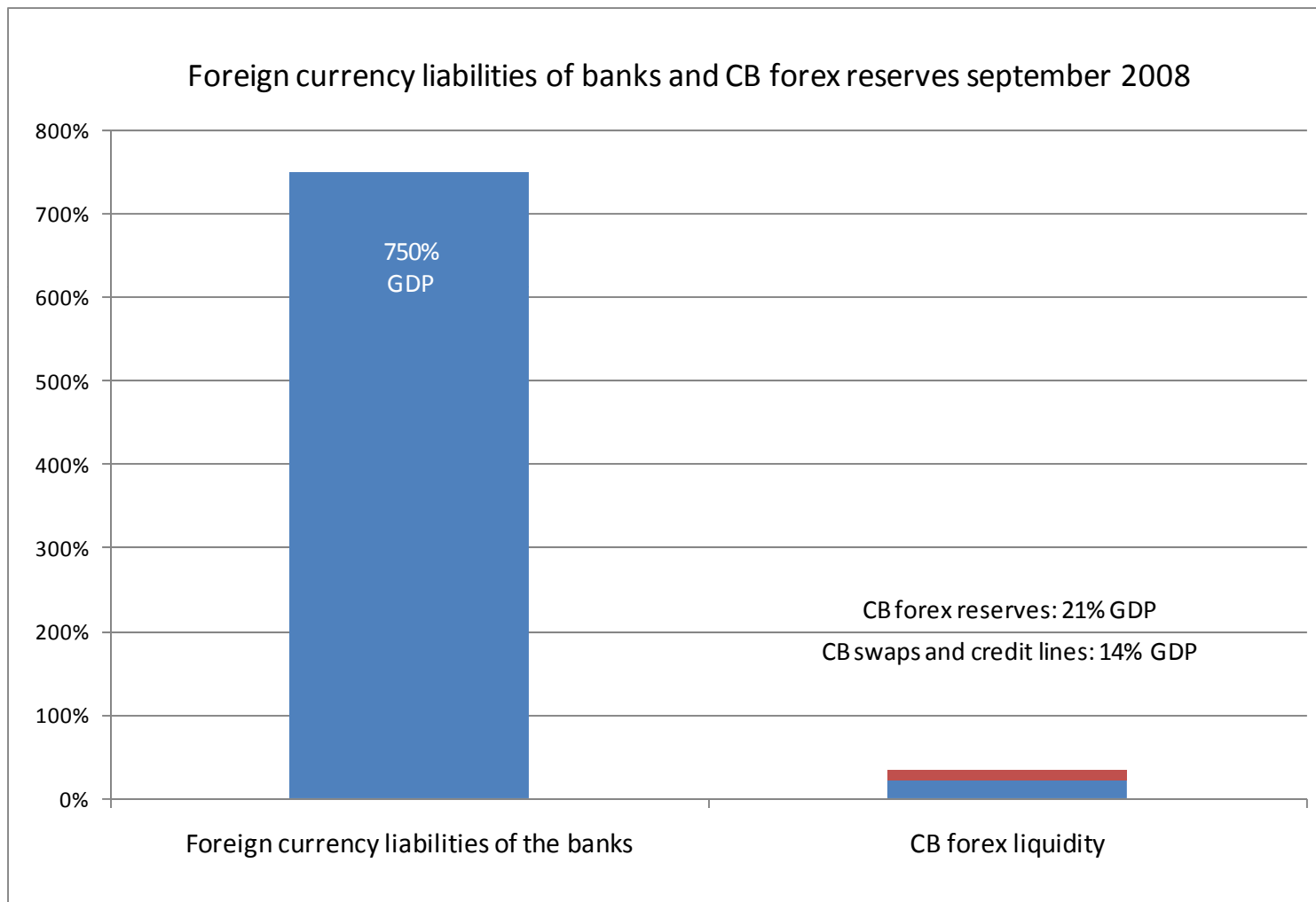
- 25/9 2008: Glitnir asks the Central Bank of Iceland for FX emergency loan (600 m. € to cover loan repayment in the middle of October)
- 29/9 2008: Glitnir takeover announced (€600 million), bank failures in Europe and US, and US House of Representative rejects TARP
- 30/9 2008: Sovereign and bank downgrading followed by widespread margin calls and closing of credit lines – domestic domino effects. In Ireland a wide-reaching guarantee is given to bank debt
- 6/10 2008: Emergency legislation passed in Iceland
- 7/10 2008: Glitnir and Landsbanki intervened by FME (Icelandic FSA)
- 8/10 2008: Freezing of Icelandic assets in the UK and takeover of Kaupthing's Singer & Friedlander. Deposit part sold to ING
- 9/10 2008: Kaupthing intervened by FME



Building defences

- It was clear by early 2008 that the banks were in dire straits and faced massive rollover risk in terms of foreign currency liabilities.
- Authorities tried to negotiate swap lines, declined by ECB, BoE and Fed (told to go to the IMF) but negotiated € 1.5 m with Nordic countries in May.
- In May 2008, Parliament approved substantial foreign borrowing to boost FX reserves (€ 5 m, mostly unused).

FX liquidity available to the Central Bank was dwarfed by the banks' FX liabilities





Disorderly and hostile cross-border crisis management

- Lack of information sharing and co-operation across affected jurisdictions
- Early sale of “good” assets at fire sale prices => recovery ratio for bond holders will be reduced
- UK authorities froze and ring-fenced assets and closed Singer & Friedland that brought down Kaupthing – however, LOR loan in Sweden and Iceland to Kaupthing
- Dispute with UK and Dutch authorities over the settlement of deposit insurance related to the branches of Landsbanki



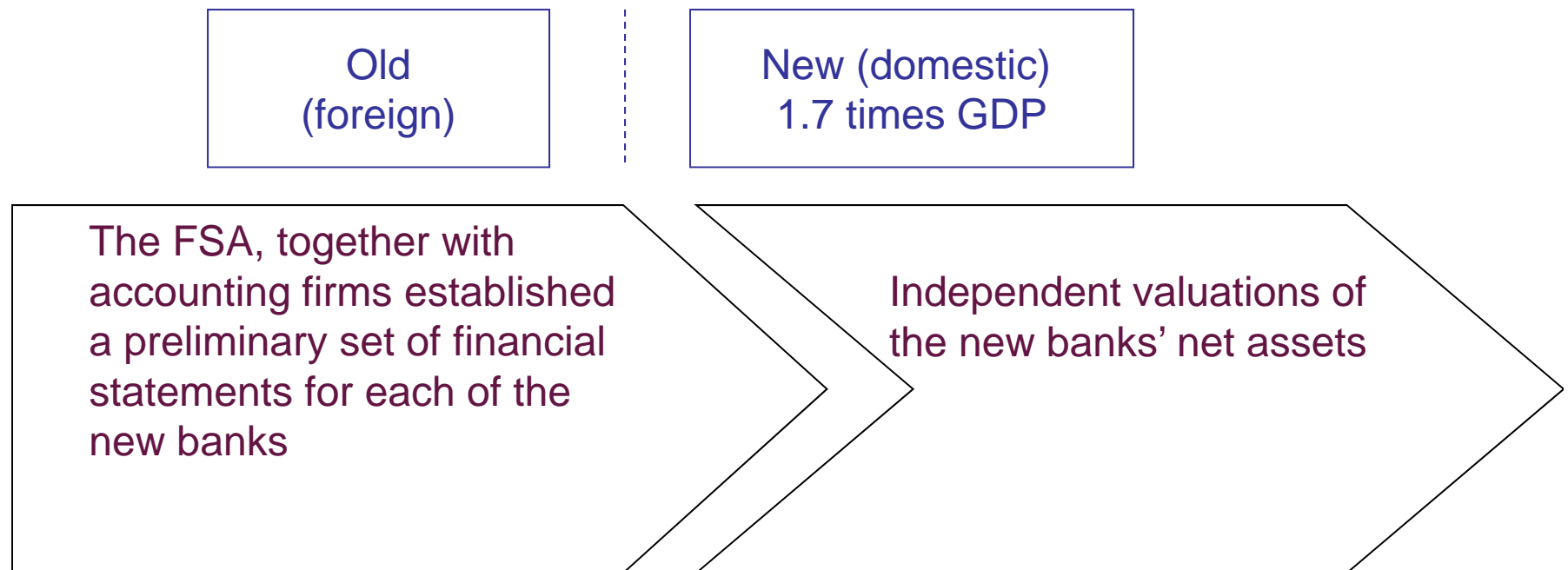
Securing continued banking operations

- Fundamental need to ensure continued domestic banking operations
- Emergency Act: FSA got broad based intervention rights; deposits got higher priority than other unsecured claims; parliamentary approval of governmental capital injections
- Statement from the Government that all deposits in Iceland were guaranteed
- The banks' assets were 10xGDP and in the absence of international cooperation, a forced down-sizing through resolution and wind up processes was the only option.



Domestic operations put into new banks

- The banks were not split according to the “good/bad bank” methodology
- Each of the three banks was split into a new bank and an old bank. The new banks consist of domestic operations, funded by local deposits.





Payment systems

- International payment flows were seriously affected
 - Payments stopped at first as the correspondent banking system seized up due to uncertainty, attempts at netting and punitive actions, and UK freezing order
 - Gradually restored with Central Bank involvement
- Domestic payment systems functioned mostly well throughout
 - Payment cards: The CBI issued statements guaranteeing payments from the issuers and access to foreign exchange
 - Cash: Volume almost tripled before easing after government statement of guarantee of all deposits in domestic financial undertakings; a close call

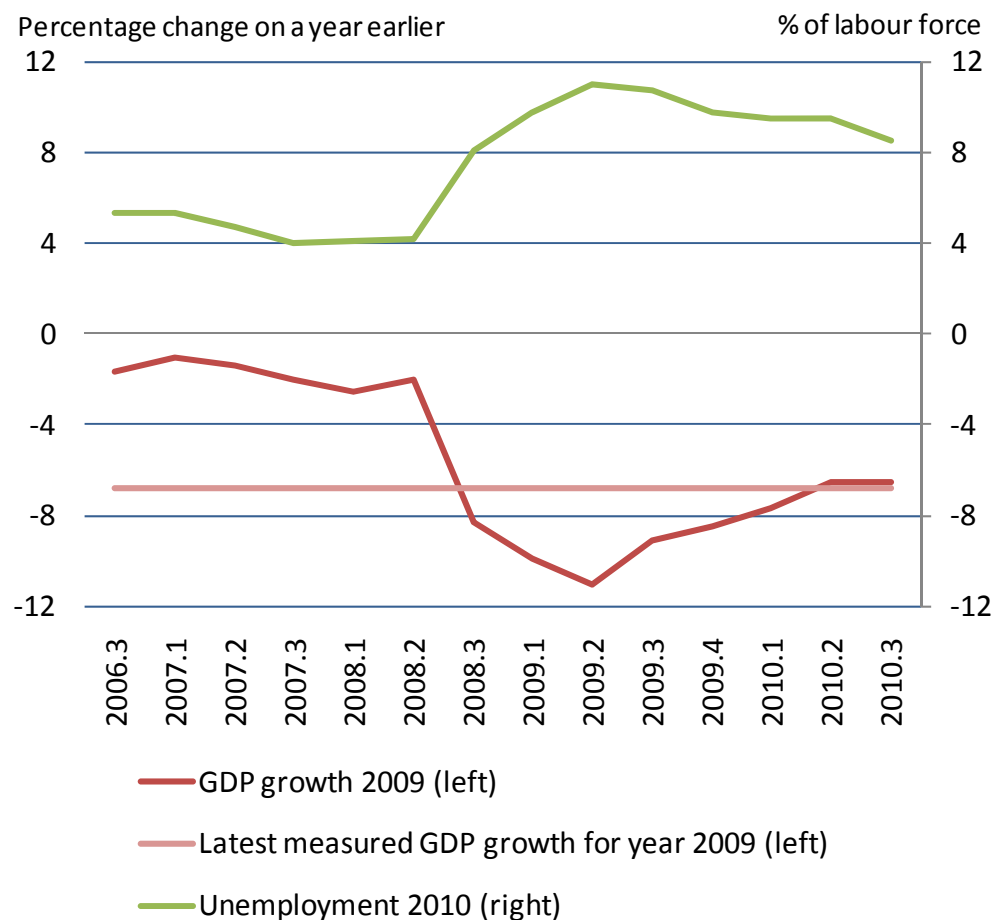


Adjustment and three shocks

- Unusually large external and internal macroeconomic imbalances 2005-2007
- Their subsiding was bound to be associated with a very significant slowdown, if not an outright recession.
- Currency crisis in early 2008
- Collapse of the banking system in October 2008
- The global contraction in Q4 2008 and the first half of 2009



Evolution of CBI forecasts of GDP growth for 2009 and unemployment for 2010



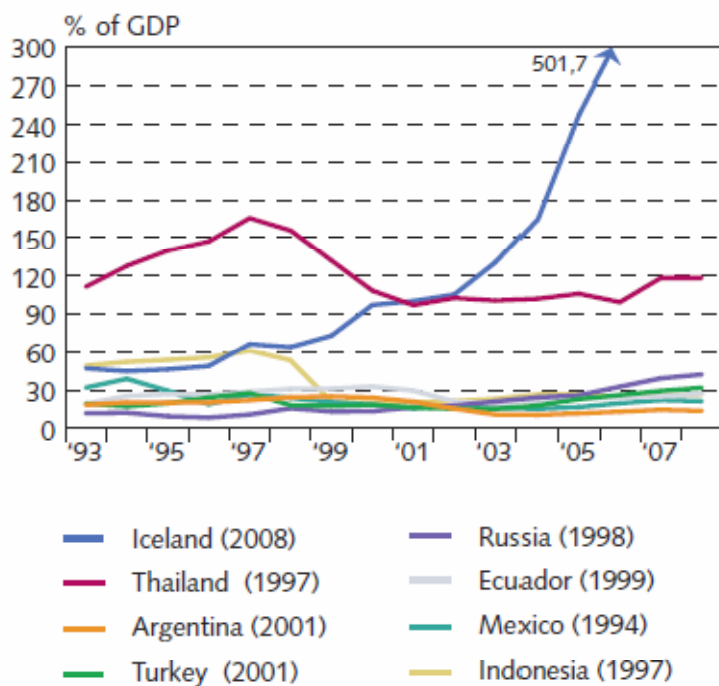
1. Central Bank of Iceland baseline forecast 2006 -2010.

Source: Statistics Iceland, Central Bank of Iceland.



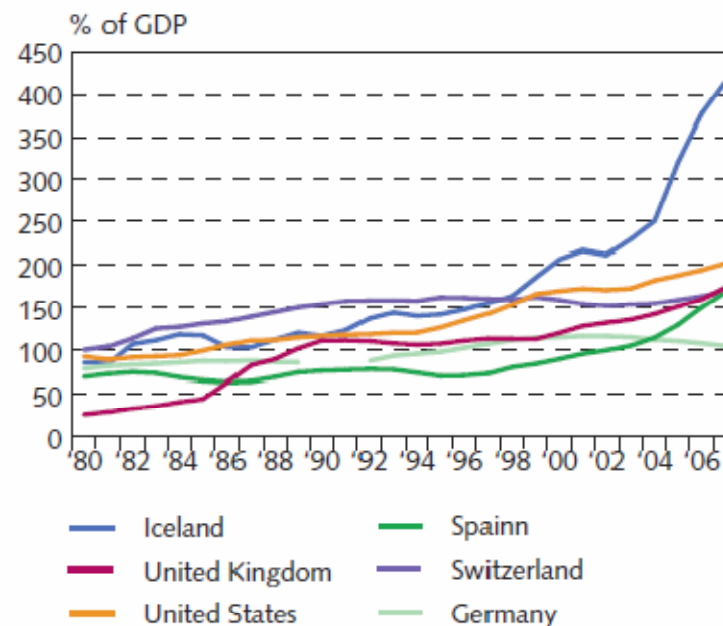
The shocks hit one of the most indebted private sectors in the world

Chart 2.30
Private sector lending as % of GDP¹



1. The year in parentheses represents the onset of the crisis in the country concerned.
Sources: Reuters EcoWin, Central Bank of Iceland.

Chart 2.9
Private sector debt in selected countries
1980-2007

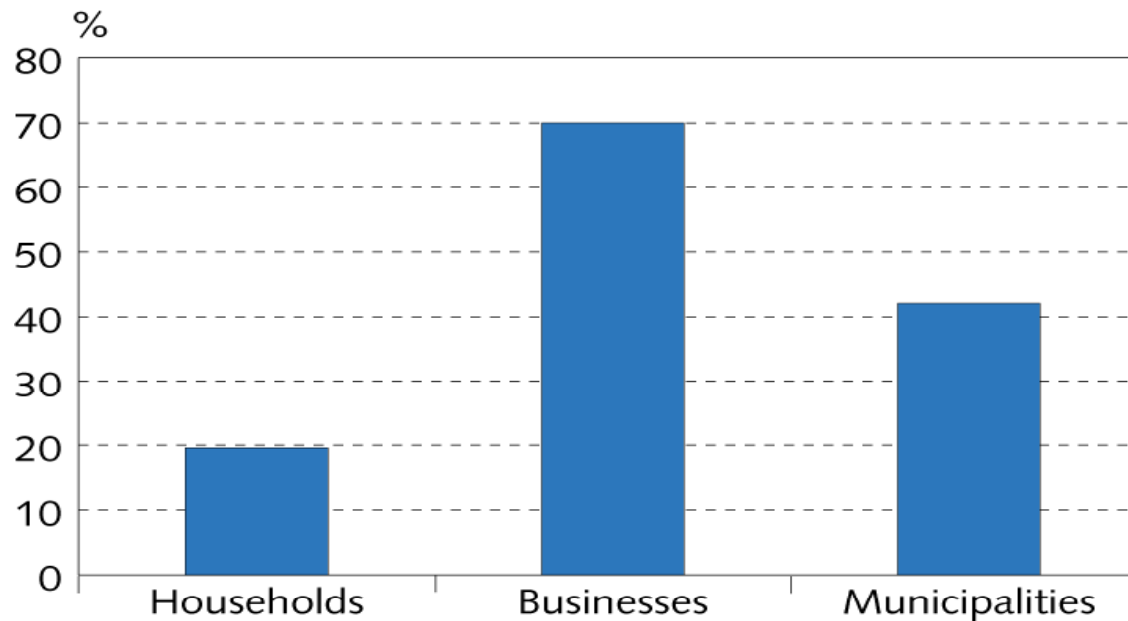


Sources: Bank of England, Central Bank of Iceland.



With a high share of foreign currency denominated or indexed debt and share of price indexed debt

Proportion of total foreign-denominated debt¹



1. Figures for households and municipalities are as of year-end 2008, and figures for businesses are as of June 2009.

Source: Central Bank of Iceland.

Price indexed debt was 75% of total household debt



The policy responses



IMF program

- A two year Stand-by Arrangement was initiated in November 2008 (2.1 b. USD)
- External financing from IMF, the Nordic countries, Poland and others (3 b. USD)
- First review was delayed but completed in October 2009, 2nd in April 2010 and 3rd on 29 September 2010.
- Three key policy goals:
 - Stabilising the exchange rate
 - Fiscal sustainability
 - Rebuilding the financial sector

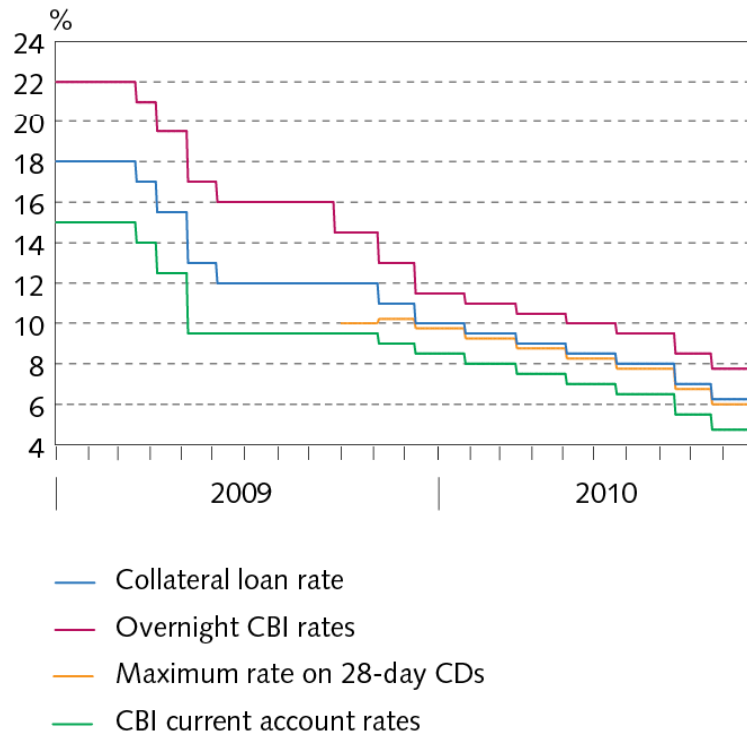


Monetary policy

Chart I-2

Central Bank of Iceland interest rates

Daily data 1 January 2009 - 29 October 2010

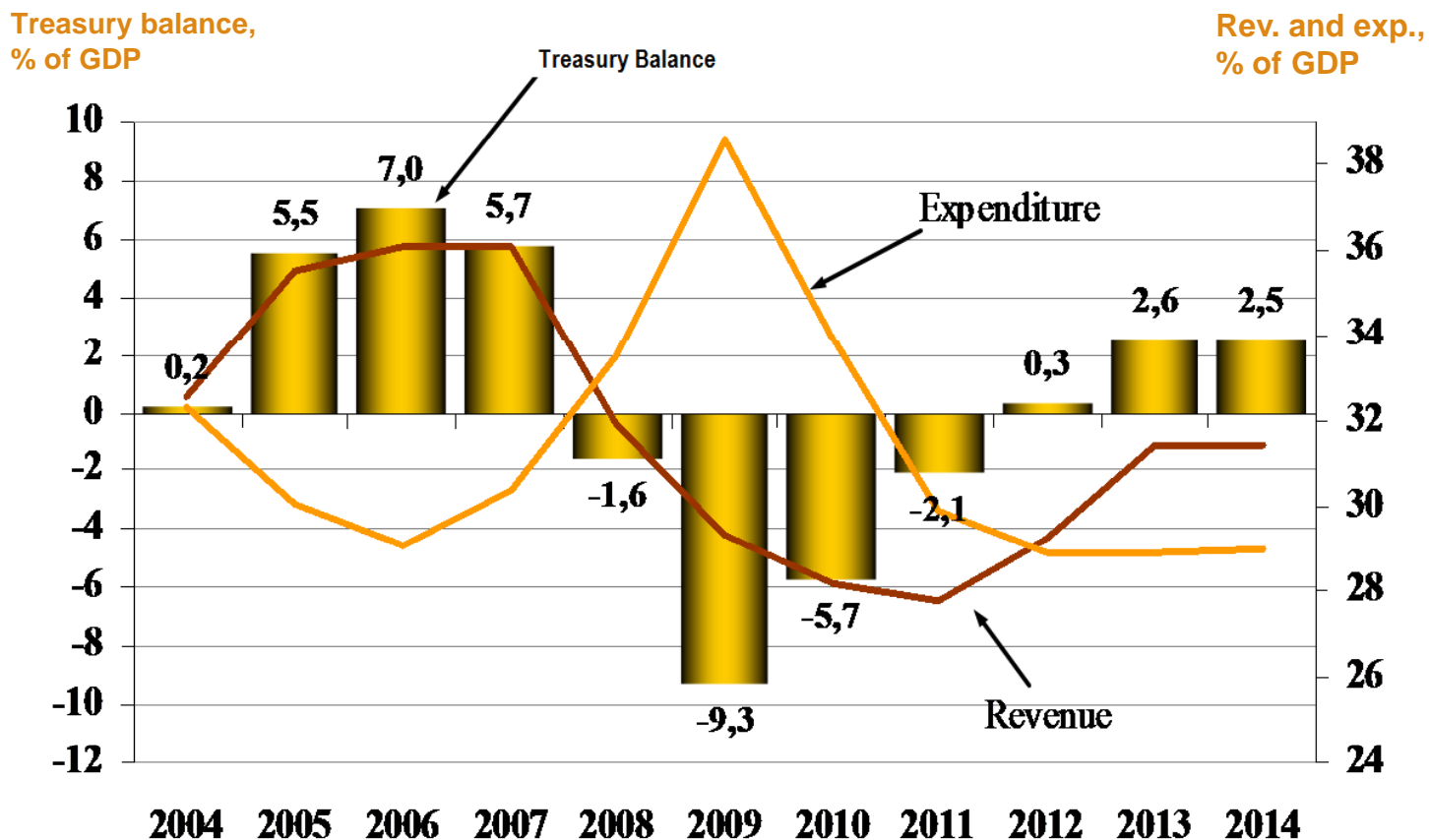


Source: Central Bank of Iceland.

- Exchange rate stability was first priority
- Supported by comprehensive capital controls
- Interest rate cut as exchange rate stabilised and inflation subsided
- Effective policy rate from 18% to 4.6%



Fiscal policy: consolidation from 2010



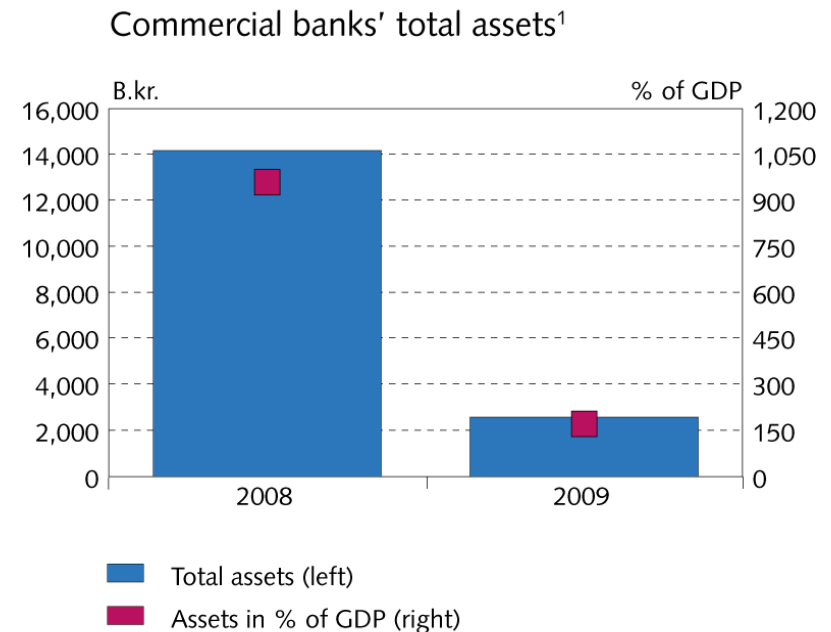
* 17,5 ma.kr. Avens revenues not included in 2010

* IKS 192 billion in write-offs of outstanding claims excl. in 2008 exp.



The banking system in 2010

- The banking system is now much smaller than in 2008 (just under 2 x GDP) and majority foreign owned
- Five commercial banks with domestic operations
 - Around 90% of the banking system
 - 12 savings banks
 - Big three commercial banks with CAD over 16%



1. Commercial banks' parent companies, September 2008 and December 2009.

Source: Central Bank of Iceland.



The recession

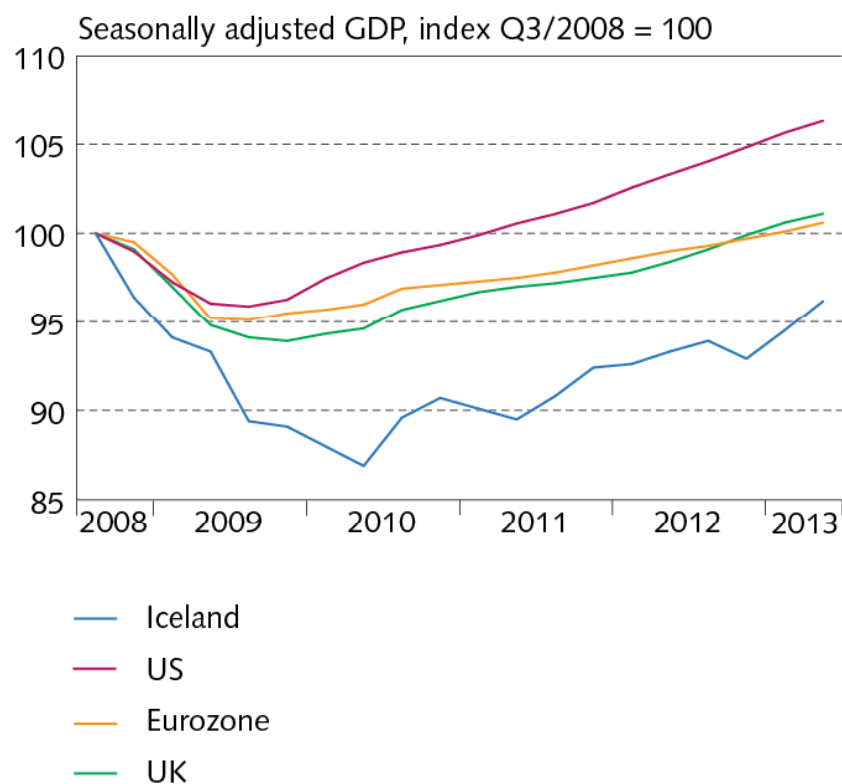


The recession in international comparison

Chart 1

Economic recovery in international comparison

Q3/2008 - Q2/2013

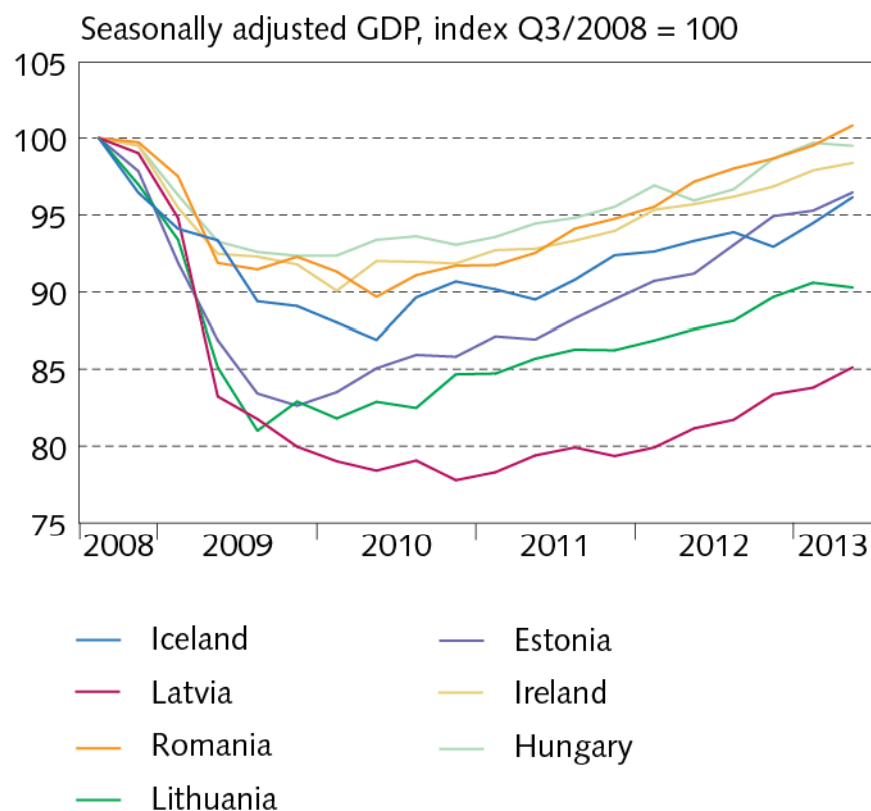


Sources: Global Insight, Central Bank of Iceland.

Chart 2

Economic recovery in crisis countries

Q3/2008 - Q2/2013

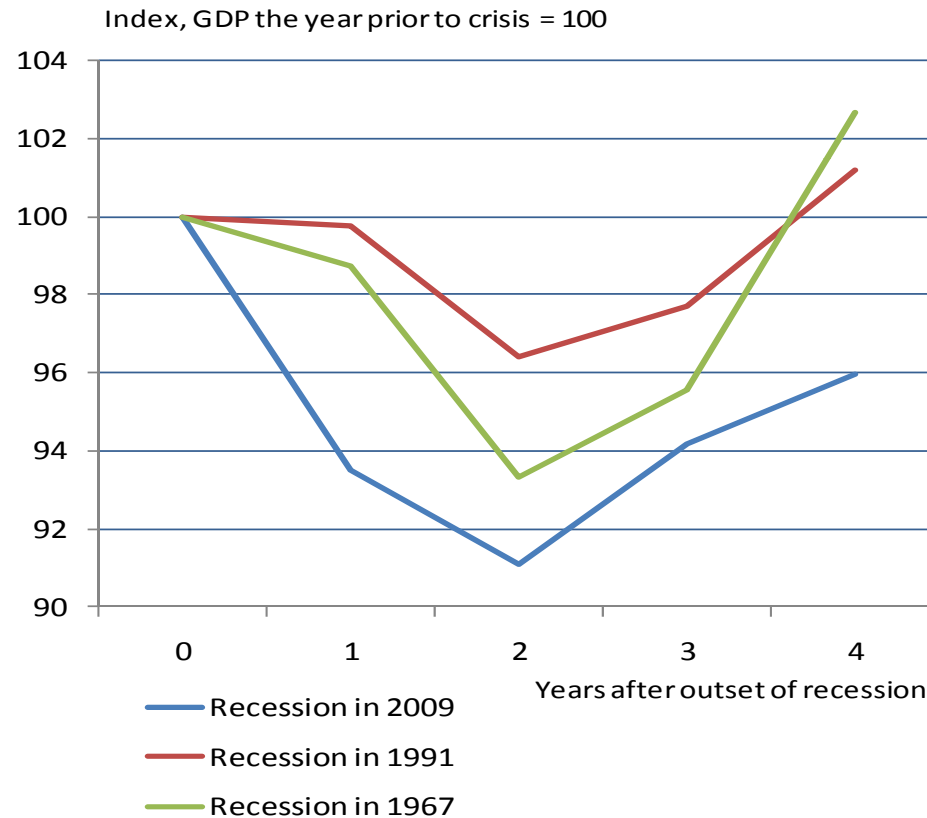


Sources: Global Insight, Central Bank of Iceland.



The recession is long and deep in historical comparison

Economic recovery in previous recessions

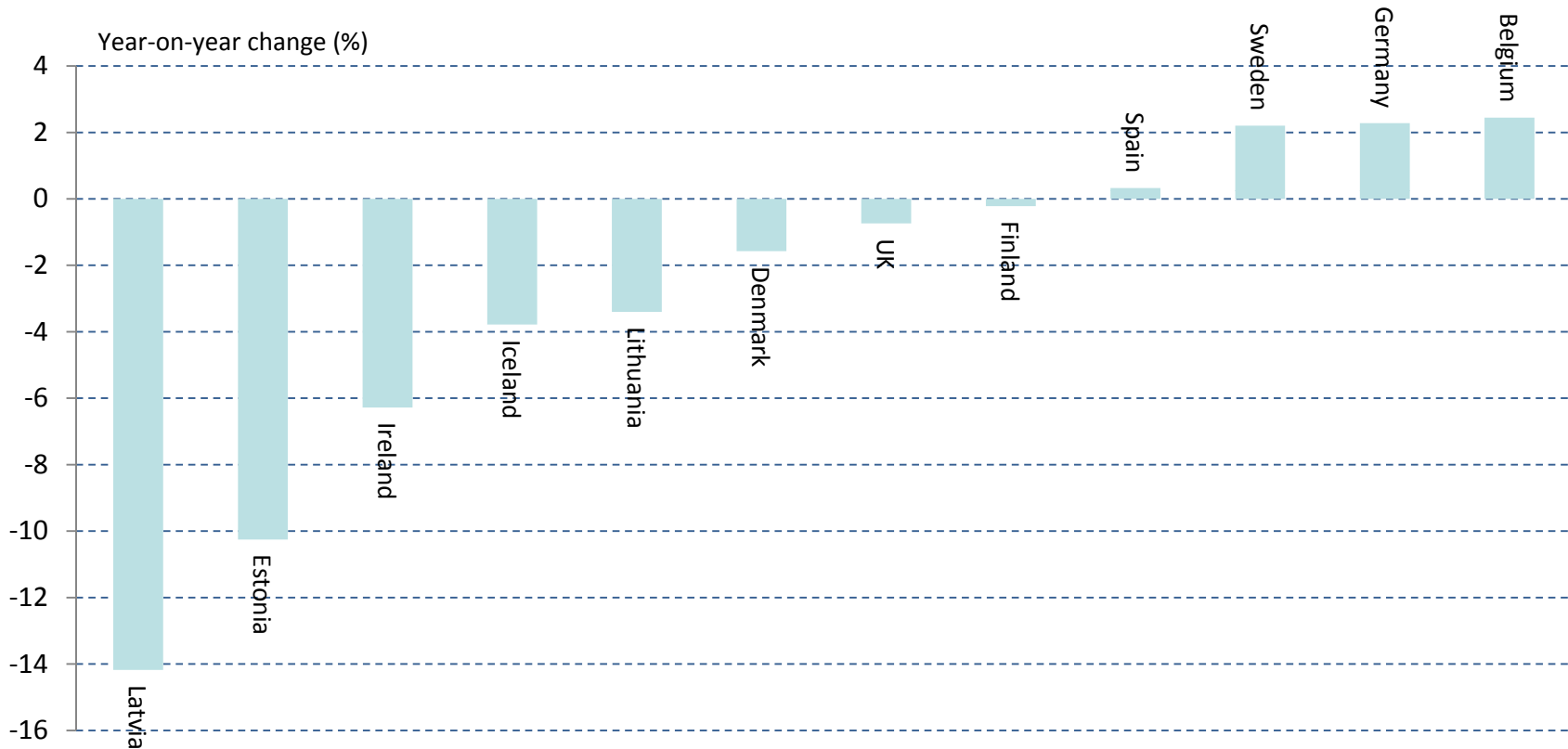


Source: Statistics Iceland, Central Bank of Iceland.



But Iceland is far from being the worst affected

Percentage change in GDP from the average for 2005 - 2007 to 2010¹



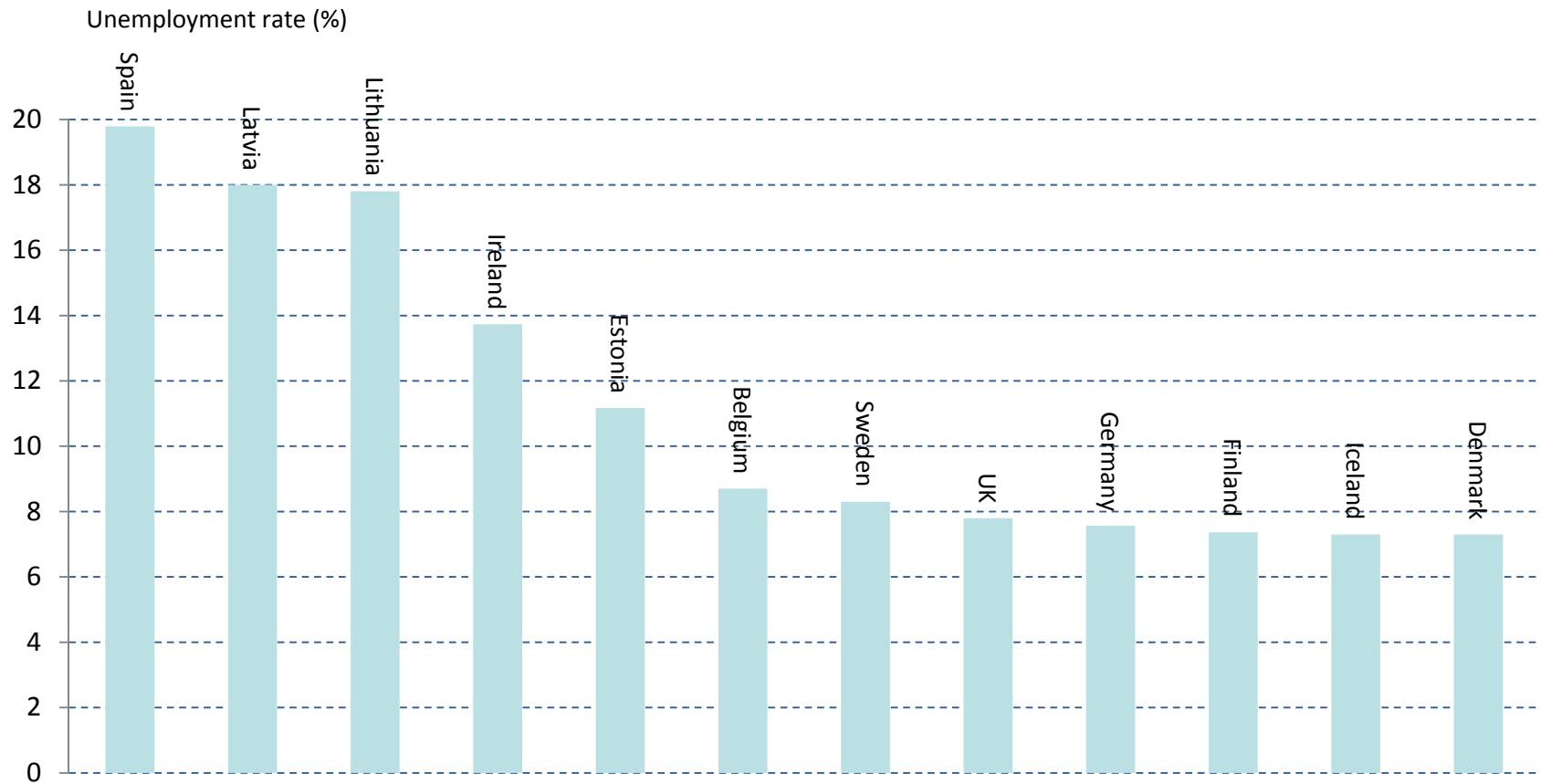
1. Forecast for 2010 is from IMF WEO.

Source: Macrobond.

Labour market flexibility has helped



Unemployment rate, Q3 2010

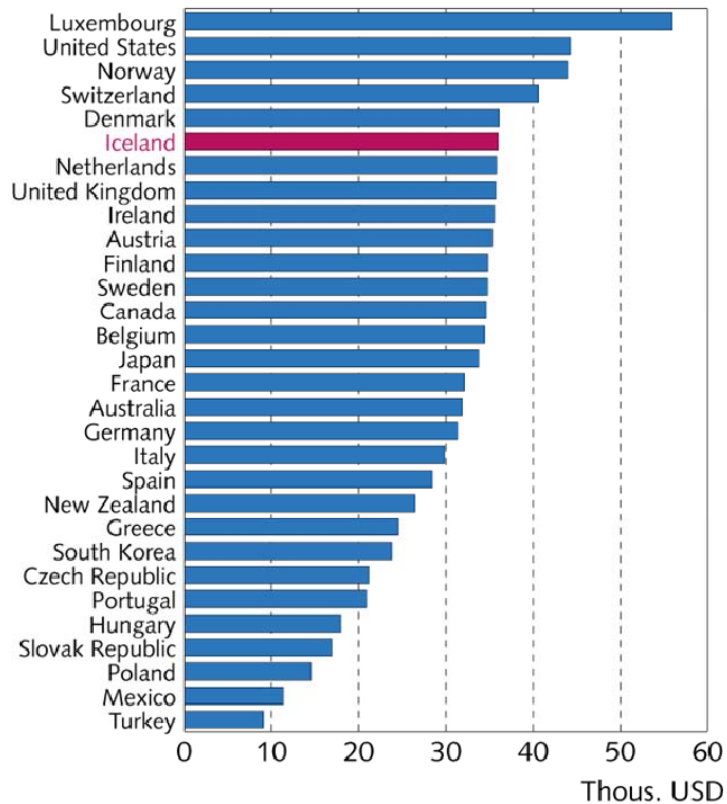


Source: Macrobond.



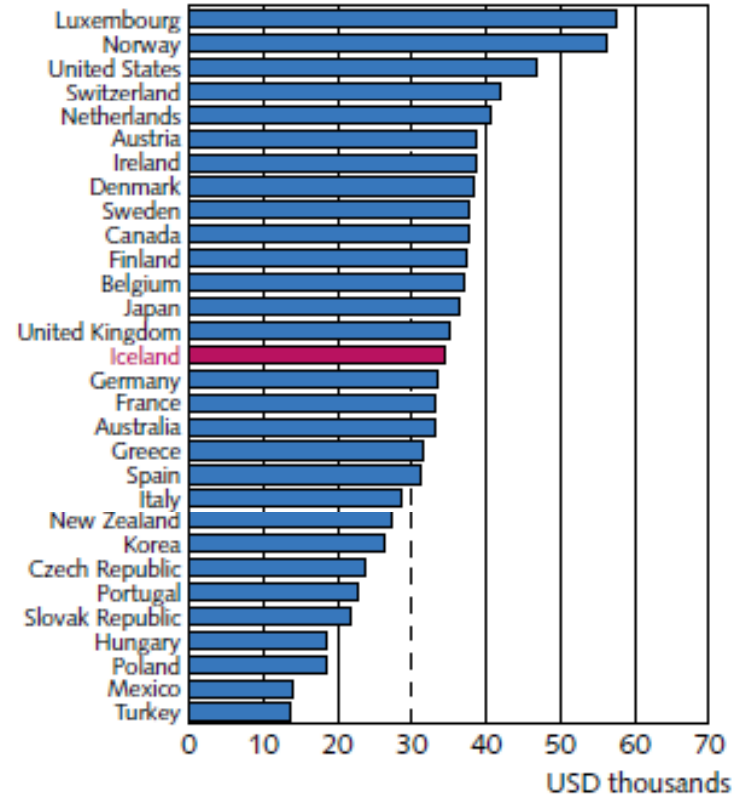
Iceland has dropped down the league of nations

Chart 4.1
Gross national income per capita
in OECD countries 2006¹



1. Based on PPP.
Source: World Bank.

Chart 3.1
Gross national income per capita
in OECD countries 2009¹



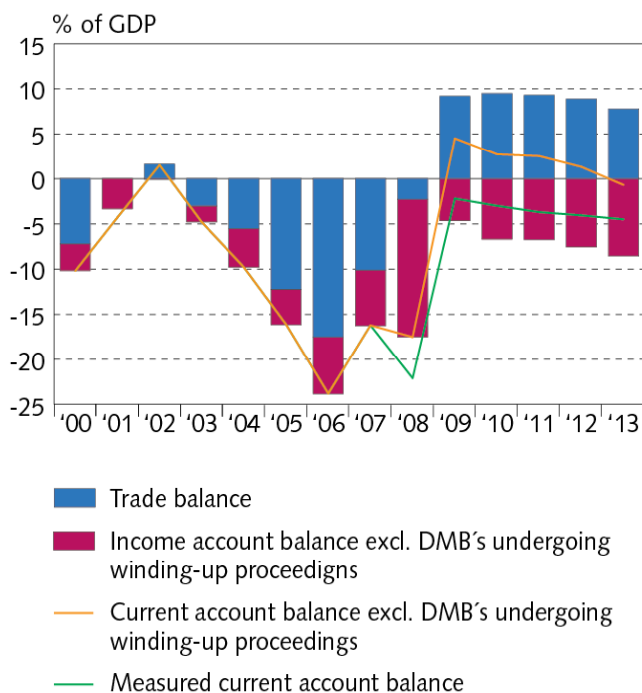
1. Based on PPP.
Source: World Bank.



The stabilisation and recovery

Stabilisation: Current account

Chart VII-5
Current account balance 2000 - 2013¹



1. Net current transfer is included in the balance of income. Central Bank baseline forecast 2010 -2013.

Source: Statistic Iceland, Central Bank of Iceland.

- Substantial improvement in the current account balance with the underlying current account (i.e. excluding accrued interest of failed banks) in significant surplus



Stabilisation: CDS

Chart III-9

CDS spread for Iceland

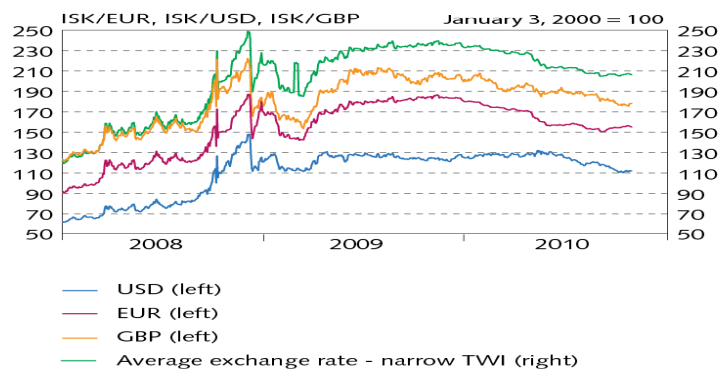
Daily data 29 March 2007 - 29 October 2010



Source: Bloomberg.

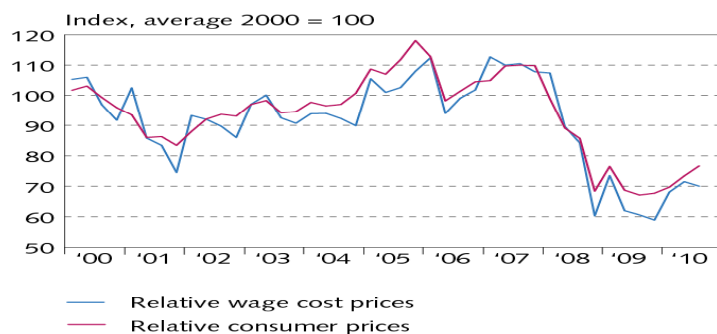
Stabilisation: Exchange rate

Chart I-1
Exchange rate of the króna
Daily data 3 January 2008 - 29 October 2010



Source: Central Bank of Iceland.

Chart II-10
Real exchange rate
Q1/2000 - Q3/2010



Source: Central Bank of Iceland.

- From the beginning of the year the króna has strengthened in TW terms by 12% without any supporting intervention
- The real exchange rate has continued to rise, with the increase measuring nearly 11% so far in 2010
- Nonetheless, it remains around 20% below the average over the past 30 years

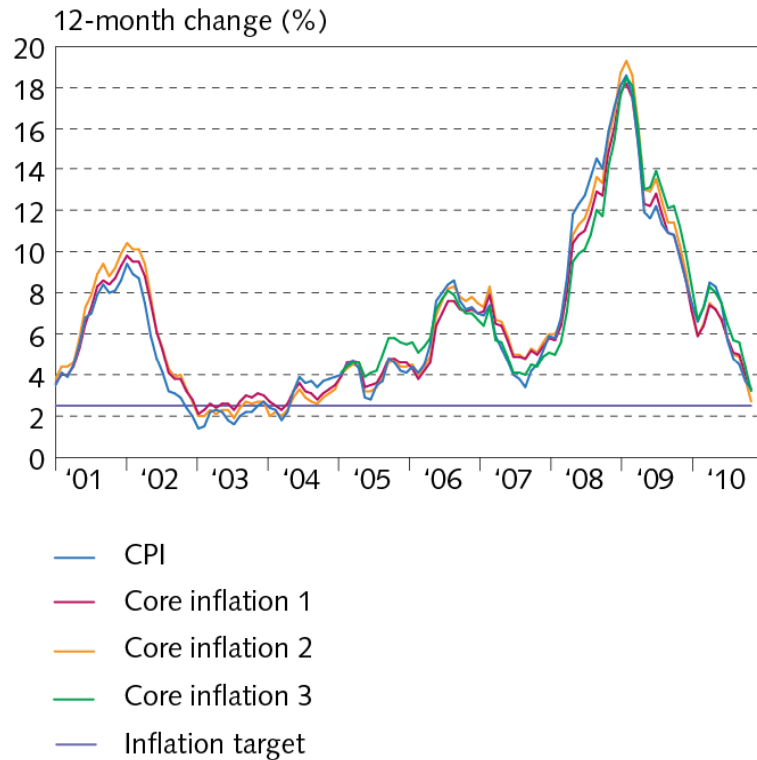


Stabilisation: Inflation

Chart VIII-1

Inflation

January 2001 - October 2010¹

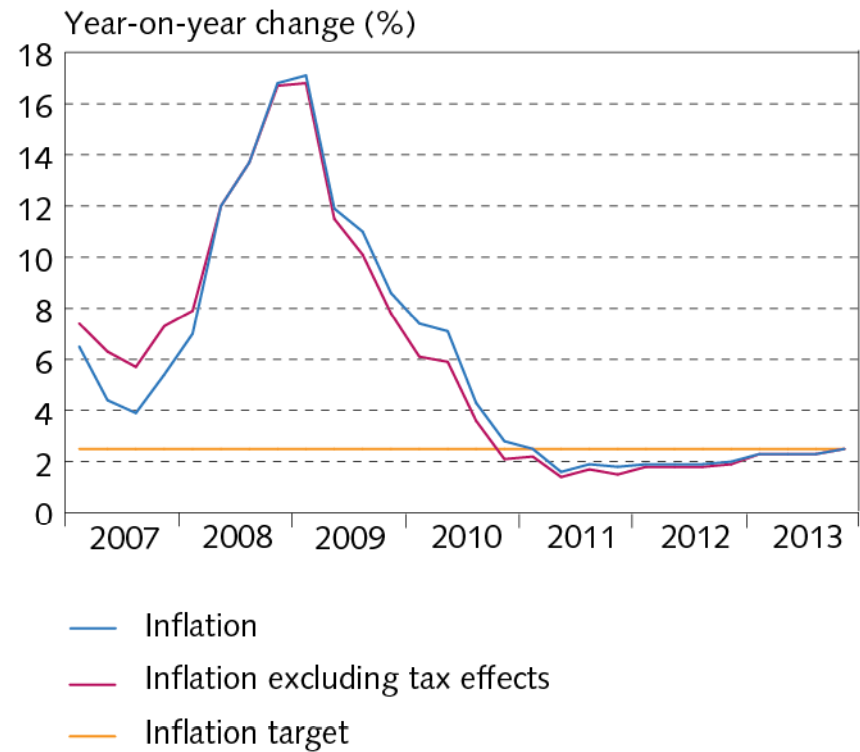


1. The core indices are compiled on the same basis as the CPI, with Core Index 1 excluding prices of agricultural products and petrol, and Core Index 2 excluding prices of public services as well. Core Index 3 also excludes the effect of changes in mortgage rates.

Sources: Statistics Iceland, Central Bank of Iceland.

Chart VIII-11

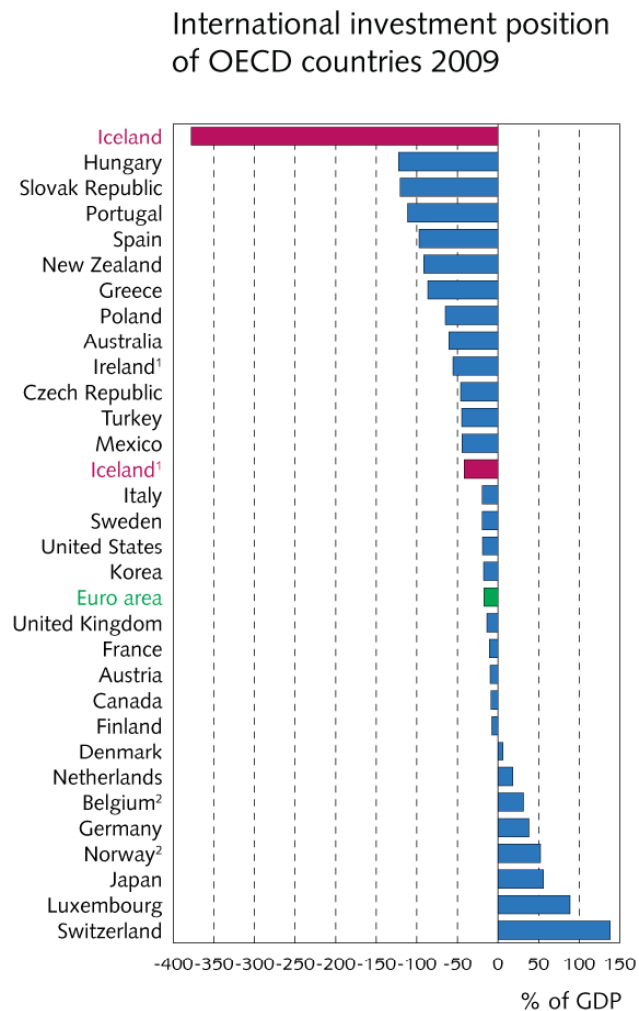
Inflation including and excluding tax effects



Sources: Statistics Iceland, Central Bank of Iceland.



International investment position



1. IIP excluding DMBs undergoing winding-up proceedings.

2. Figures are for 2008.

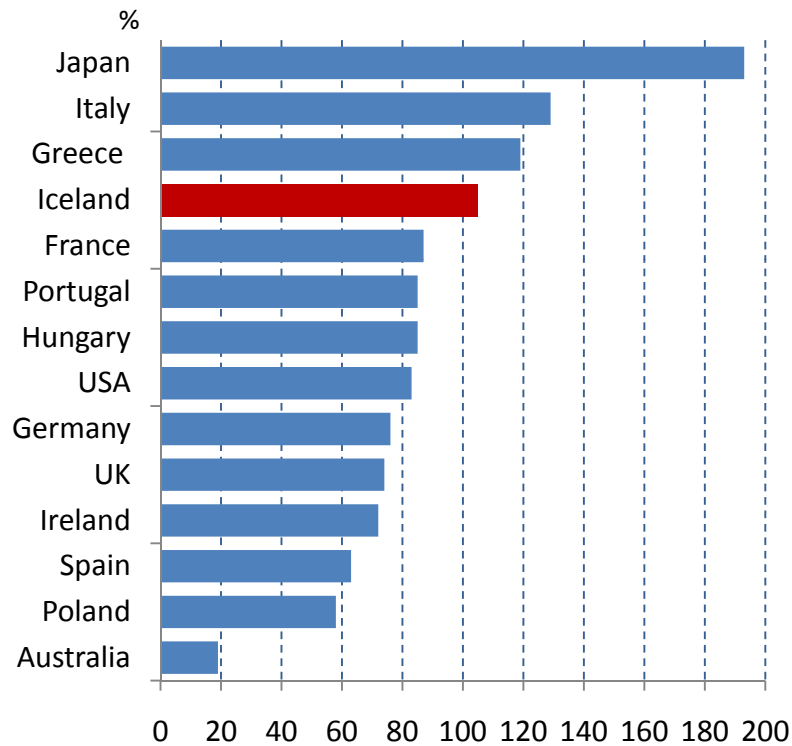
Sources: IMF and various central bank and statistics office websites.

- When the failed banks will have been wound up Iceland will not be an outlier in terms of net foreign debt
- Figures do not include the unsettled Icesave debt.



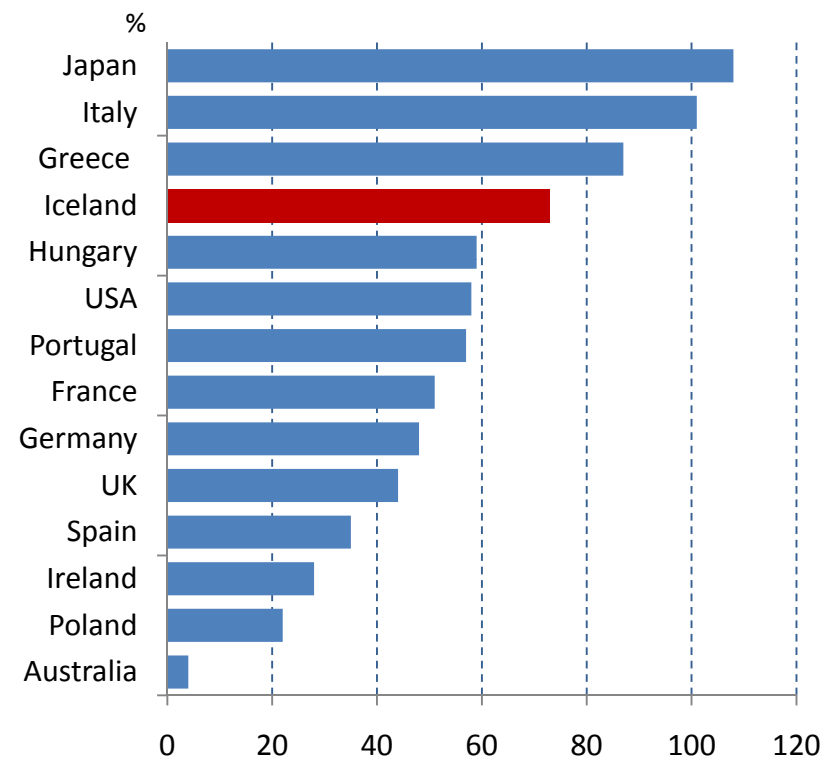
Public debt in international comparison

Gross public debt



Sources: Global Insight, IMF, various central banks' websites, Central Bank of Iceland.

Net public debt



Sources: Global Insight, IMF, various central banks' websites, Central Bank of Iceland.



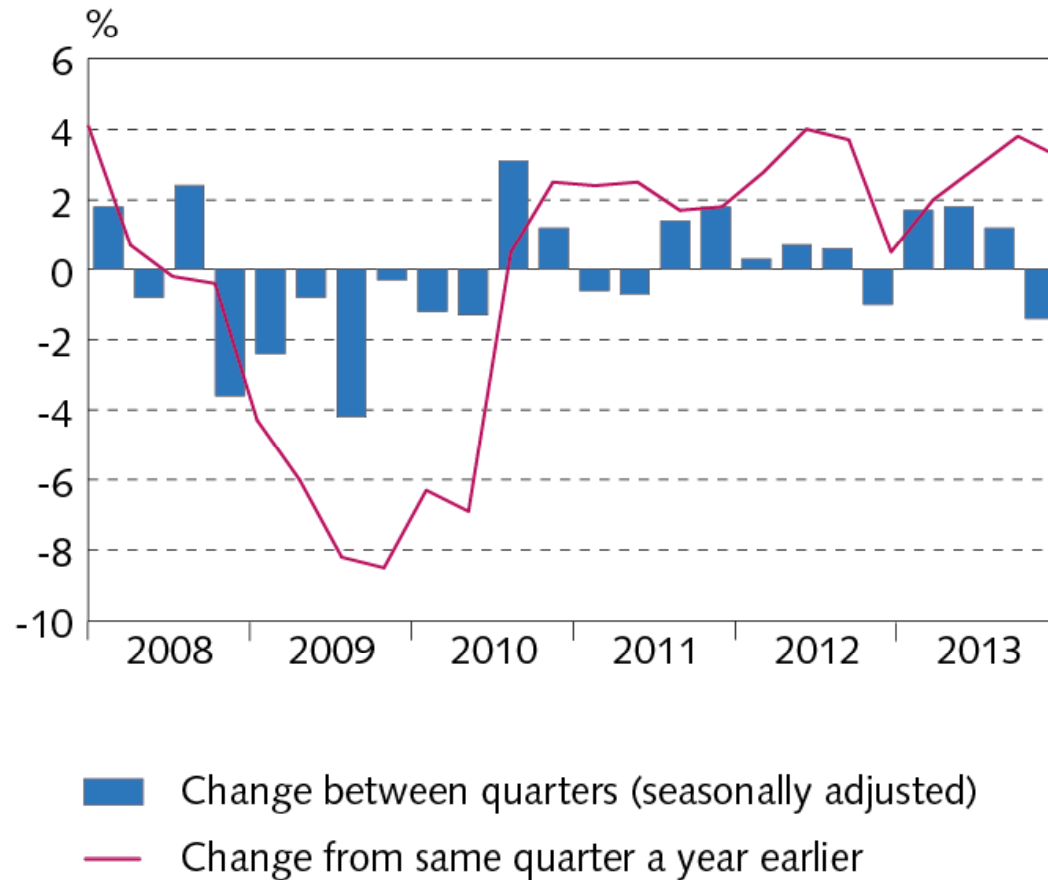
Internal private sector debt crisis

- However, there is a still an unresolved internal private sector debt crisis affecting parts of households and companies
- This internal debt crisis is negatively affecting the prospects for a robust recovery



The current growth forecast

Chart I-9
Change in GDP



Sources: Statistics Iceland, Central Bank of Iceland.



Some lessons



Causes of the banking collapse?

- Most of the usual suspects of the international financial crisis were at play...
- ..but also specific vulnerabilities of “weak” capital and interconnectedness ..
- .. and a souring loan book as international and domestic economic conditions deteriorated.
- Immediate causes of the demise were the conditions after Lehman, large foreign currency liabilities with a maturity mismatch and disproportionate size relative to home base.
- Non-cooperation and bad crisis management across interested jurisdictions made things worse.



Causes of the macroeconomic boom-bust

- Ample and cheap credit supply, partly fuelled through the banks
- Policy mistakes and conflicts:
 - Not sufficient demand restraints when FDI boomed
 - Tax cuts in the early stages of the boom
 - Lowering of reserve requirements in 2003?
 - Policy conflict between fiscal and monetary policy fuelled carry trade
- A flawed monetary policy framework?
 - E.g. lack of foreign exchange intervention



Cross-border banking

- Cross-currency risk and maturity mismatch in terms of foreign currency (rollover risk) was underestimated prior to the crisis =>
- Under-regulated and not sufficiently backed by capital or safety net facilities (e.g. LOLR)
- Separately capitalised subsidiaries?
- Truly international banks in only based in a handful of countries?
- Global extension of LOLR: FX swap lines or global FX liquidity pool? Who will have access?



EU/EEA framework

- European passport but national supervision, deposit insurance, crisis management and resolution
- Regulatory framework largely ignored foreign currency liquidity risk, and currency regime and country size.
- The framework for deposit insurance violated the principle of matching international private action with international public measures and the insurance principle of pooling
- Vulnerability/risk for small EU/EEA-countries outside the euro area



EU reform agenda

- Key proposals (e.g., De Larosière and what has followed) do not go far enough and do not measure up to the Icelandic experience.
- Seen mostly as a supervisory failure, which it was only in part
- Should banks from such countries (especially the small ones) or even the same “passport” rights and/or capital charges as banks inside the euro area?
- We need to move towards EU supervision, deposit insurance, crisis management and resolution regimes for cross-border banks. Domestic banks could stay within the national safety net

Crisis management and resolution



- Keeping the payments system going is a key priority and it is possible even if all banks fail
- Promising to protect deposits works if they are in your own currency
- Bailing out the bond holders?
- Cross-border crisis management functioned badly



Macroeconomic management

- Policy conflicts are very dangerous in small open and financially integrated economies
- Do not be afraid of big government surpluses during booms
- Traditional government balances only tell a partial story – look at all channels through which government policy affects demand
- Current account deficits matter



Monetary policy

- IT is not enough
- IT+
 - Lean as well as clean
 - Better support from fiscal policy
 - Better support from prudential policy
 - Active forex intervention
 - Selective capital controls?
 - More role for reserve and liquidity requirements?
- Be mindful of the collateral regime and other aspects of the framework for liquidity provisions – not necessarily the same to try to avoid a banking crisis and to minimise the effects

Financial regulation and supervision



- We need macroprudential regulation and supervision with central banks in the driving seats
- Microprudential supervision should be moved closer to or back into central banks, especially in small open economies