Lessons from the financial crisis in Iceland

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Institute for Monetary and Financial Stability, House of Finance Goethe University, 2 December, 2010
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 2000-2012

Volume change on a year earlier (%) (\%)

Business investment as % of GDP 1991-2012

Deviation from average for 1970-2007

Percentage points

1. Total gross fixed capital formation
2. Businesses excluding aluminium and power stations
3. Aluminium and power stations
4. Residential
5. Public sector

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

Percentage change on a year earlier

Due to reclassification of lending, after Sept. 2003 data by sector are not comparable with earlier data.
Build-up of domestic imbalances

Fuelling asset price bubbles
Build-up of domestic imbalances
Wide interest rate differential encouraged carry trade
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Merchandise account balance</th>
<th>Service account balance</th>
<th>Income account balance</th>
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<tbody>
<tr>
<td>95</td>
<td>5</td>
<td>0</td>
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<tr>
<td>07</td>
<td>0</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

Proportion

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


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

% of GDP

Total assets/Equity

2003 2004 2005 2006 2007 2008

Total assets (left axis) Leverage ratio (right axis)

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

- GBP 45%
- EUR 16%
- USD 3%
- ISK 22%
- Other 14%

¹. Largest commercial banks’ consolidated accounts.
Sources: Commercial banks’ annual reports, Central Bank of Iceland.
Small countries - big banks

Banking Assets to GDP, %

Source: IMF: Cross-Cutting Themes in Economies with Large Banking Systems
Not outliers in terms of capitalisation
Somewhat weaker in terms of liquidity

Liquid Assets as percent of Total Assets vs. Short-term Borrowings as percent of Total Liabilities, (Avg. 2003-07)

- Liquid Asset Ratio
- Short Term Borrowing

<table>
<thead>
<tr>
<th>Country</th>
<th>Liquid Asset Ratio</th>
<th>Short Term Borrowing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Ireland</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Iceland</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>HK SAR (local banks)</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>Singapore</td>
<td>18</td>
<td>15</td>
</tr>
</tbody>
</table>
Icelandic banks had the largest foreign currency liabilities in relative terms.

Banking External Debt Liabilities to GDP, %

- Iceland: 500% in 2001, 600% in 2007
- Ireland: 300% in 2001, 500% in 2007
- Hong Kong SAR: 150% in 2001, 250% in 2007
- Singapore: 400% in 2001, 500% in 2007
- Switzerland: 100% in 2001, 200% in 2007
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

<table>
<thead>
<tr>
<th></th>
<th>Kaupthing</th>
<th>Landsbanki</th>
<th>Glitnir</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD ratio</td>
<td>11.2%</td>
<td>10.3%</td>
<td>11.2%</td>
</tr>
<tr>
<td>Tier 1 ratio</td>
<td>9.3%</td>
<td>8.2%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Leverage ratio</td>
<td>15.1</td>
<td>20.0</td>
<td>19.3</td>
</tr>
<tr>
<td>Equity/tangible assets</td>
<td>5.2%</td>
<td>4.0%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Bond maturity</td>
<td>5y</td>
<td>5y</td>
<td>3.2y</td>
</tr>
<tr>
<td>Deposits/funding</td>
<td>32.3%</td>
<td>72.4%</td>
<td>20.8%</td>
</tr>
<tr>
<td>Liquidity ratio</td>
<td>1.95</td>
<td>1.74</td>
<td>1.52</td>
</tr>
</tbody>
</table>
But there were hidden vulnerabilities

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

“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

[Graph showing the five stages of the crisis to date]
... 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.

The FSA, together with accounting firms established a preliminary set of financial statements for each of the new banks

<table>
<thead>
<tr>
<th>Old (foreign)</th>
<th>New (domestic)</th>
<th>1.7 times GDP</th>
</tr>
</thead>
</table>

Independent valuations of the new banks’ net assets
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


*Source: Statistics Iceland, Central Bank of Iceland.*
The shocks hit one of the most indebted private sectors in the world.
With a high share of foreign currency denominated or indexed debt and share of price indexed debt.

Proportion of total foreign-denominated debt

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

- 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%

**Chart I-2**
Central Bank of Iceland interest rates
Daily data 1 January 2009 - 29 October 2010

Source: Central Bank of Iceland.
Fiscal policy: consolidation from 2010

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

* 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%

![Commercial banks' total assets](chart.png)

Source: Central Bank of Iceland.
The recession
The recession in international comparison

Chart 1
Economic recovery in international comparison
Q3/2008 - Q2/2013

Seasonally adjusted GDP, index Q3/2008 = 100

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tr>
<td>Iceland</td>
<td>90</td>
<td>85</td>
<td>90</td>
<td>95</td>
<td>100</td>
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<tr>
<td>US</td>
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<td>95</td>
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<tr>
<td>Eurozone</td>
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<td>95</td>
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<td>UK</td>
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<td>80</td>
<td>85</td>
<td>90</td>
<td>95</td>
<td>100</td>
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</tbody>
</table>

Sources: Global Insight, Central Bank of Iceland.

Chart 2
Economic recovery in crisis countries
Q3/2008 - Q2/2013

Seasonally adjusted GDP, index Q3/2008 = 100

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tr>
<td>Iceland</td>
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<td>100</td>
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<td>Estonia</td>
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<td>95</td>
<td>100</td>
<td>105</td>
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<tr>
<td>Latvia</td>
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<td>Ireland</td>
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<td>Lithuania</td>
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<td>80</td>
<td>85</td>
<td>90</td>
<td>95</td>
<td>100</td>
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</tbody>
</table>

Sources: Global Insight, Central Bank of Iceland.
The recession is long and deep in historical comparison

Economic recovery in previous recessions

Index, GDP the year prior to crisis = 100

Years after outset of recession

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 2010

1. Forecast for 2010 is from IMF WEO.

Source: Macrobond.
Labour market flexibility has helped Spain, Latvia, Lithuania, Ireland, Estonia, Belgium, Sweden, UK, Germany, Finland, Iceland, and Denmark.

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 2006

Chart 3.1
Gross national income per capita in OECD countries 2009

1. Based on PPP.
The stabilisation and recovery
Stabilisation: Current account

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

1. Net current transfer is included in the balance of income. Central Bank baseline forecast 2010 -2013. 
Source: Statistic Iceland, Central Bank of Iceland.
Stabilisation: CDS

Chart III-9

CDS spread for Iceland

Daily data 29 March 2007 - 29 October 2010

Source: Bloomberg.
Stabilisation: Exchange rate

• 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 2010

12-month change (%)

- **CPI**
- **Core inflation 1**
- **Core inflation 2**
- **Core inflation 3**
- **Inflation target**

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

Year-on-year change (%)

- **Inflation**
- **Inflation excluding tax effects**
- **Inflation target**

**Sources:** Statistics Iceland, Central Bank of Iceland.
International investment position

- 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.

1. IIP excluding DMBs undergoing winding-up proceedings.
2. Figures are for 2008.
Sources: IMF and various central bank and statistics office websites.
Public debt in international comparison

**Gross public debt**
- Japan
- Italy
- Greece
- Iceland
- France
- Portugal
- Hungary
- USA
- Germany
- UK
- Ireland
- Spain
- Poland
- Australia

**Net public debt**
- Japan
- Italy
- Greece
- Iceland
- Hungary
- USA
- Portugal
- France
- Germany
- UK
- Spain
- Ireland
- Poland
- Australia

*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