

Discussion of:
“The Rise, the Fall, and the Resurrection of Iceland”
by Benediktsdóttir, Eggertsson, and Þórarinnsson

Kathryn M.E. Dominguez
University of Michigan and NBER

Brookings Papers on Economic Activity Conference,
Fall 2017

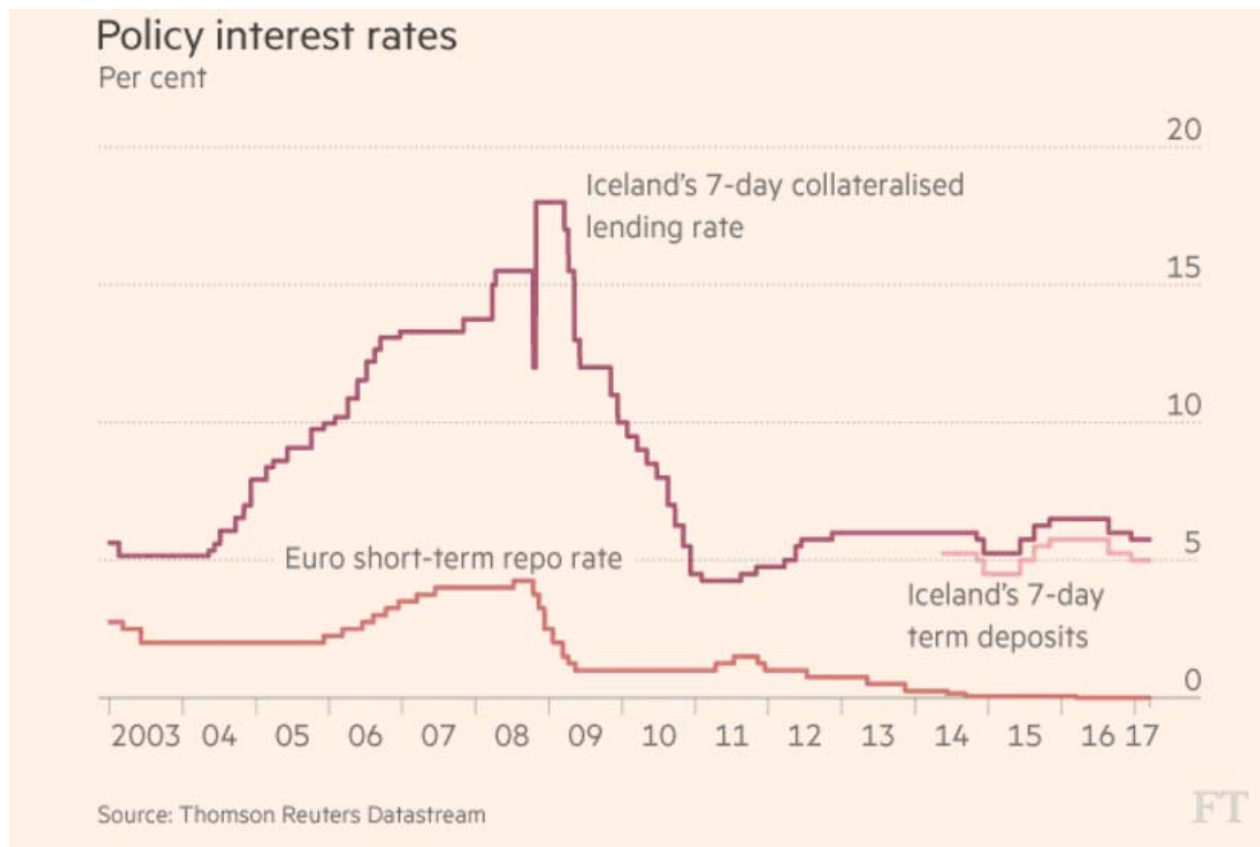
Big Picture

- The recent Icelandic banking saga is worth understanding, not only because it contains spectacular economic drama:
 - Corruption, incompetence and malfeasance
 - Regulatory capture
 - Precipitous asset price movements and output implications
 - Complicated global linkages
 - Redemption
- This paper's approach: detailed case study of how the banking sector went bad, along with retrospective cost calculations
- What's missing?
 - Benchmark data or a “well-functioning” banking system model to help us identify what aspects of the saga are tail-events and what aspects we have seen before (or don't realize we have seen before),
 - Broader macroeconomic analysis of what went wrong (and what eventually righted the economy).

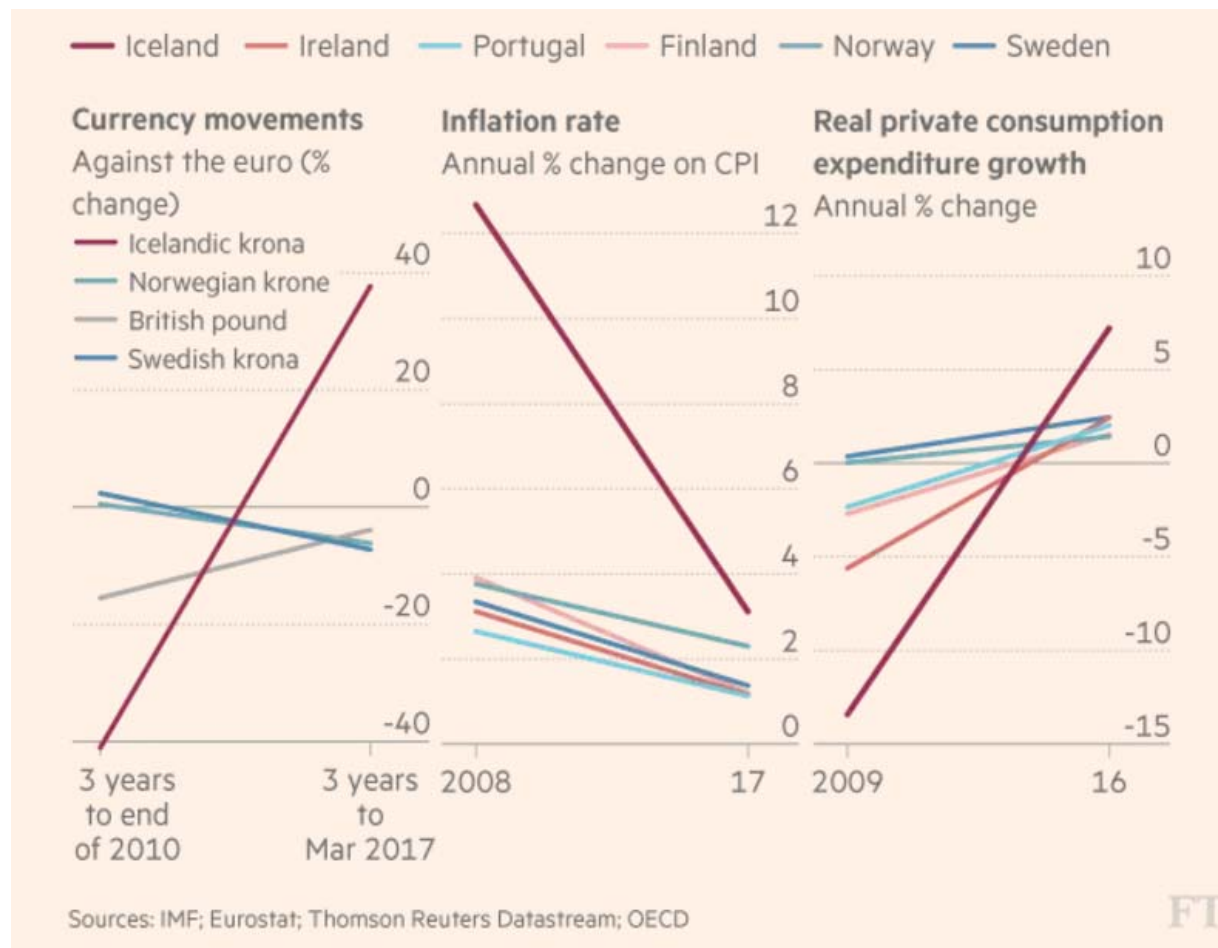
Iceland's Crisis and Recovery Timeline

- 1998-2003: Iceland privatizes its 3 large banks
- 2002-2008: current account deficits, policy rate differentials, krona carry trade
- 2003: hydroelectric dam and aluminum smelter projects funded (50% of GDP)
- 2004-2008: 3 banks go from 3xGDP to 9xGDP
 - Funding: 2004-5: European bond mkt; 2006: US bond mkt; 2006-7: internet deposits in Europe; 2007-8: collateralized borrowing from ECB and ICB (love-letter exchanges)
 - Loans: single payment (bullet loan) structure, inside dealing schemes collateralized by Icelandic corporate stock, high-risk investments in real estate and foreign companies
- October 2008: (twin) banking and currency crisis
 - Massive capital flight, bond and stock markets crash, krona crashes, bank runs
 - CBI unable to serve as lender-of-last-resort for banks mostly operating in foreign currencies
 - Parliament passes Emergency Act and FSA takes over the 3 banks
 - Banks are split into “old/bad” banks and “new/recapitalized” banks
- November 2008: capital controls adopted, IMF loan program (\$2.1b), bilateral loans from Nordic countries and Poland (\$2.3b)
- 2017: capital controls removed, banking system and krona restored, strong export-led GDP recovery

Iceland's ideal conditions for carry-trade (still)



Iceland relative to its peers

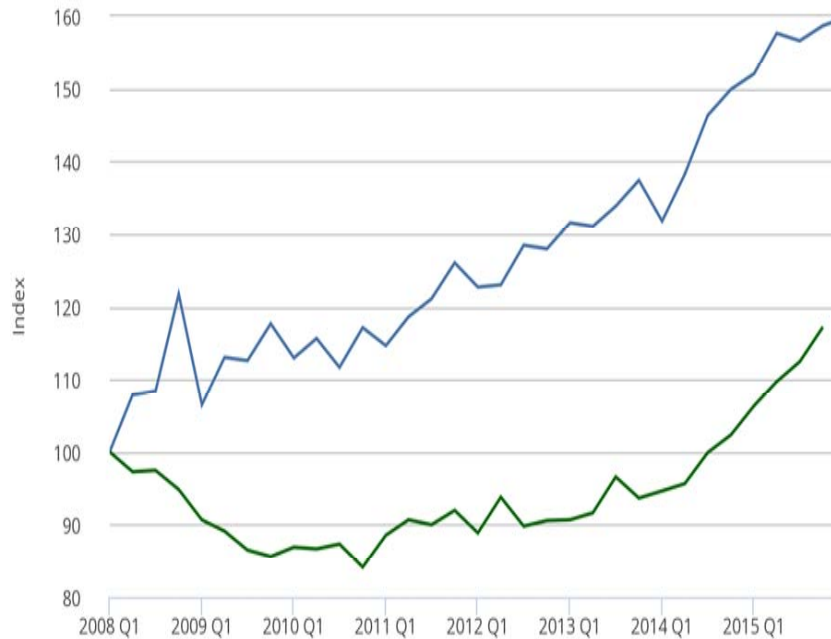


Iceland v. Ireland

Nominal and Real GDP

FRED

— Gross Domestic Product for Iceland®, Q1 2008=100
— Gross Domestic Product for Ireland®, Q1 2008=100

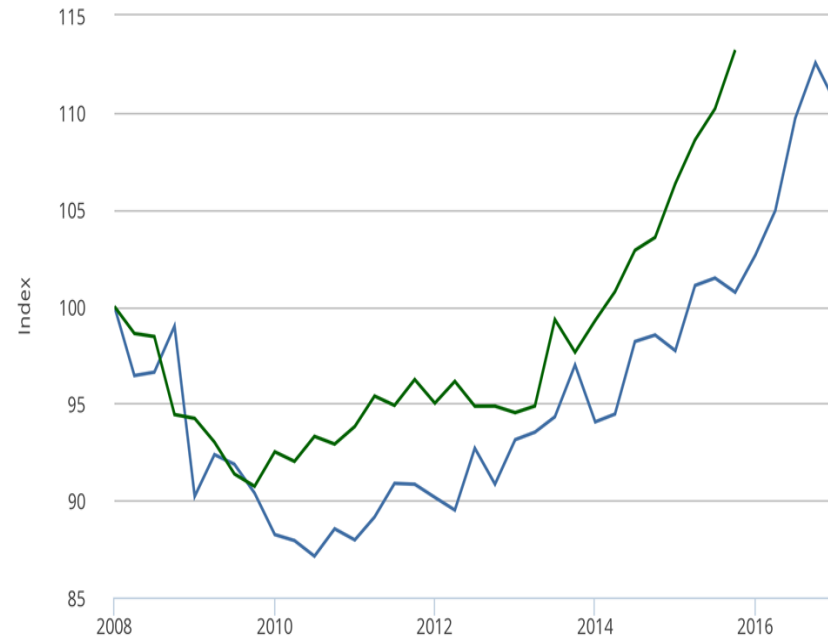


Source: Eurostat
fred.stlouisfed.org

myf.red/g/eWxm

FRED

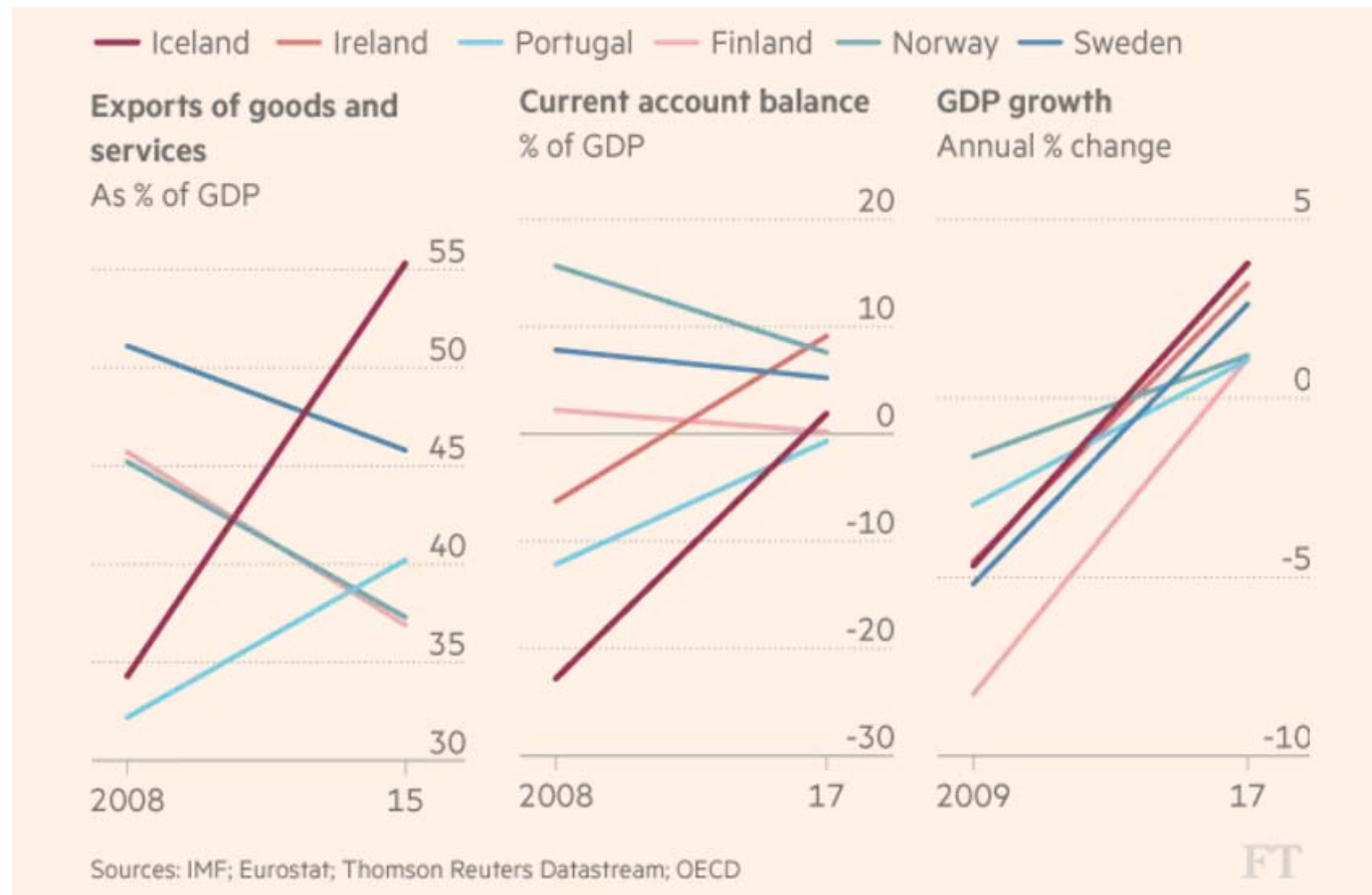
— Real Gross Domestic Product for Iceland®, Q1 2008=100
— Real Gross Domestic Product (Euro/ECU series) for Ireland®, Q1 2008=100



Source: Eurostat
fred.stlouisfed.org

myf.red/g/eWxD

Export-led Recovery



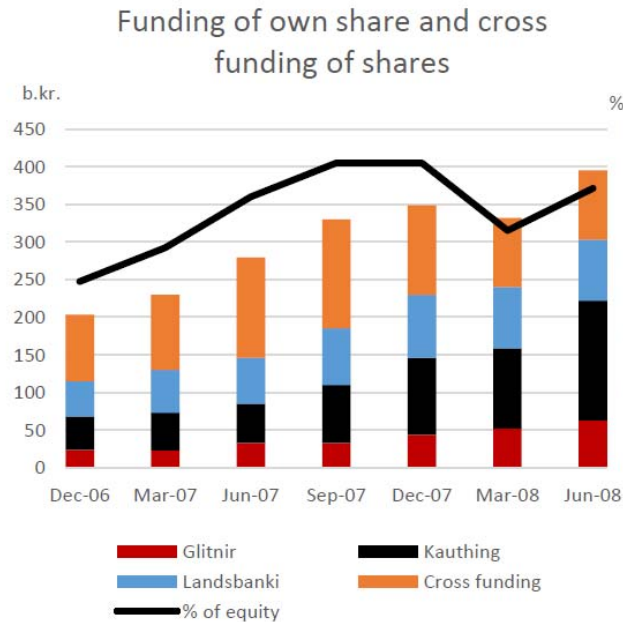
Special Investigative Committee Report (2010)



- Asks:
 - What just happened?
 - Were any public employees to blame?
- Committee: supreme court judge, parliamentary ombudsman, economist
 - Subpoena powers
 - Access to detailed bank operations data
- This paper:
 - Uses the report data describing the run-up to the crisis
 - Aggregates data
 - Extends the analysis by 7 years
 - Provides analysis of whether banks were insolvent at the time of the crisis
 - Calculates cost of the crisis

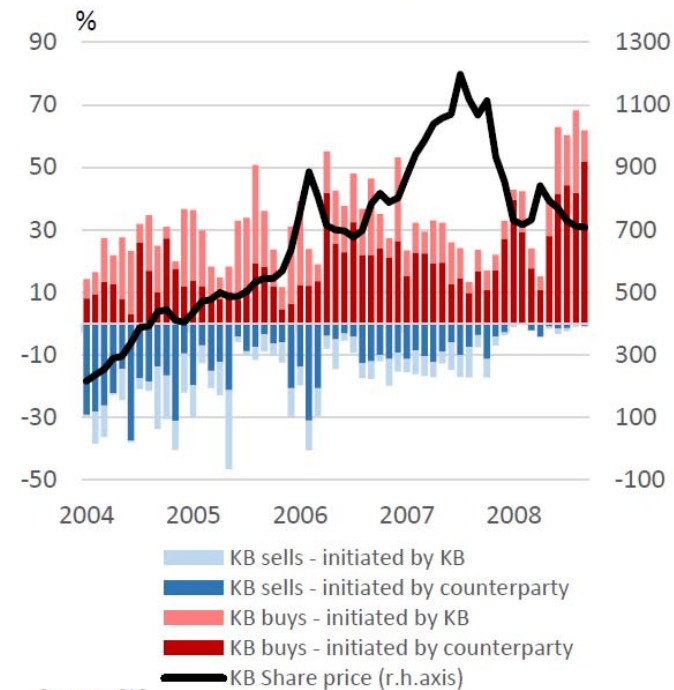
Issue 1: when collateral is not really collateral...

Figure 4.3. Funding of Own Shares and Cross Funding of Shares



Source. SIC

Figure 4.4. Kaupthing trades with own shares on the exchanges % of trades



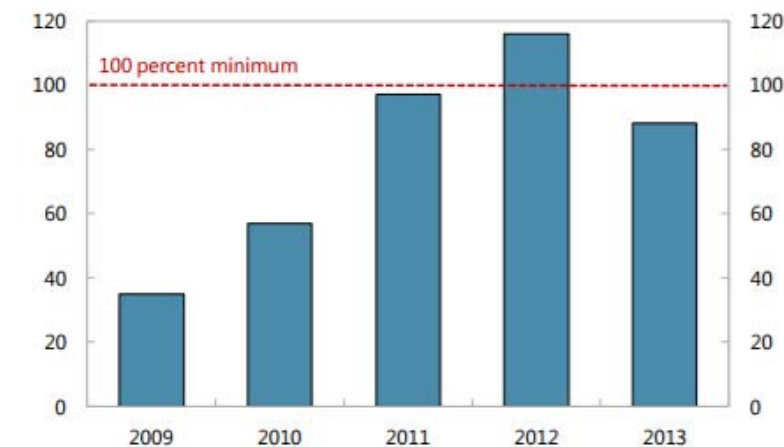
Source. SIC

Issue 2: when deposit insurance is underfunded...

- As a member of EEA Iceland was required to set up a deposit-insurance scheme that covered domestic and foreign-currency deposits.
- But when the Icesave collapsed the EFTA court ruled that the Icelandic government was not legally obligated to repay foreign-currency deposits in a timely fashion based on the argument that the EU directive was never meant to deal with the collapse of an entire banking system.
- Paper suggests that this outcome should not be surprising: in circumstances when governments do not have the resources to pay-out insurance they will discriminate against foreign-currency deposits.
 - Markets seem to have anticipated this: foreign deposits earned higher interest earnings than did domestic deposits.

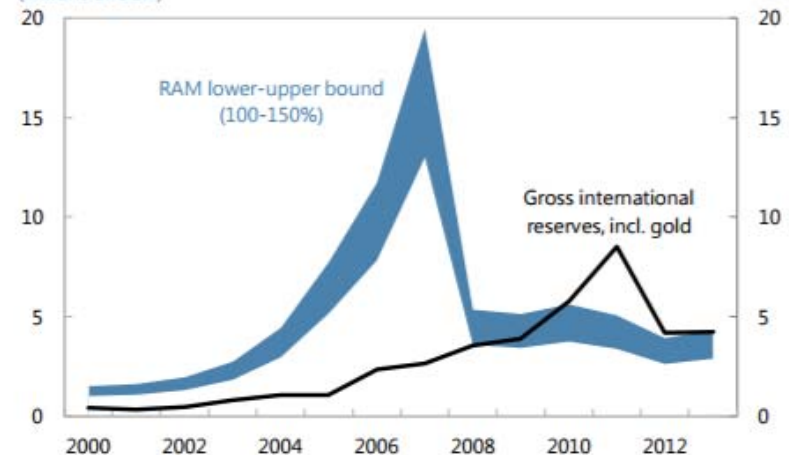
Issue 3: when the stock of foreign reserves is inadequate

Reserves to Short-term Debt
(Percent)



Sources: Central Bank of Iceland; and IMF staff calculations.

Reserve Adequacy Level
(Billions of USD)



Sources: WEO; IFS; and IMF staff calculations.

Foreign reserves were well below the amount needed to cover total short-term debt, excluding the old banks, before and after the crisis. The IMF's reserve adequacy metric is based on the level of exports, broad money, short-term debt, and other external liabilities.

Issue 4: when capital flows need to be controlled

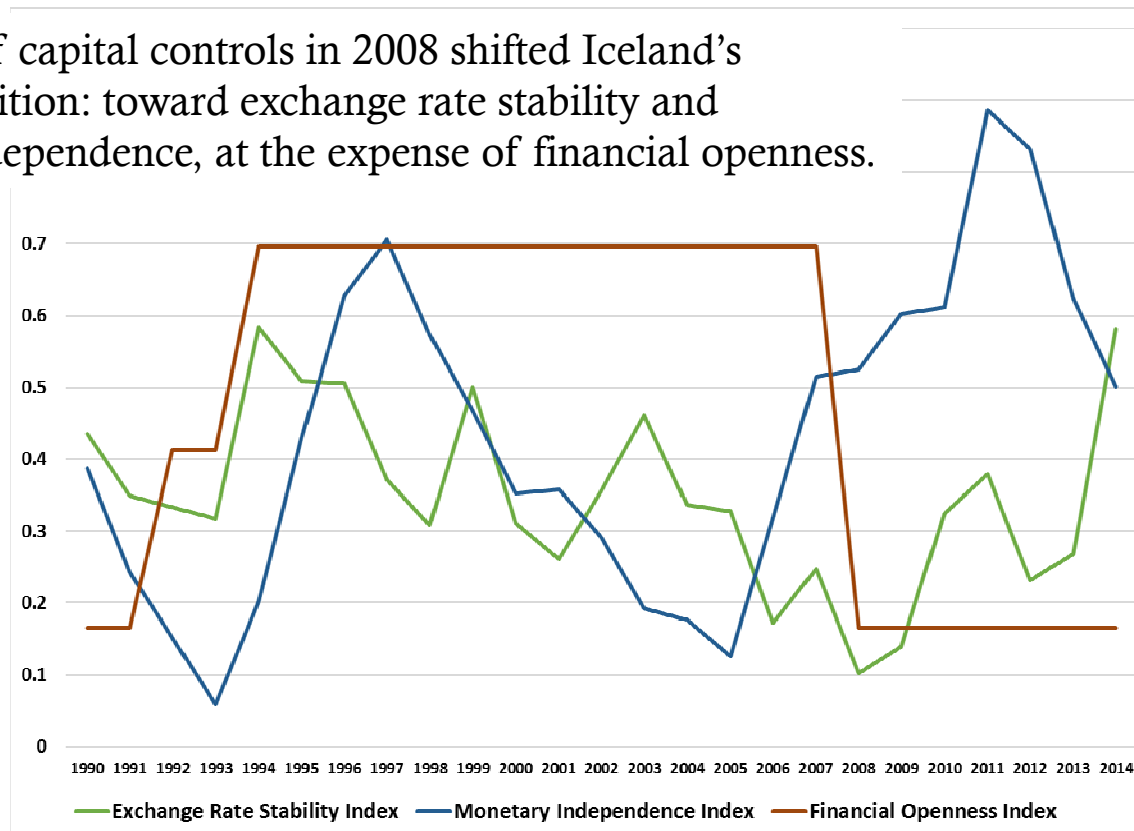
- Controls were imposed in November 2008 and only recently lifted.
- Why did they remain in place for so long?
 - Capital outflow concerns from settling the failed bank's liabilities – full repatriation was estimated to result in a fall in Iceland's IIP of nearly 18% of GDP.
 - Capital outflows from the unwinding of remaining pre-crisis carry trade positions (estimated at 14% of GDP)
- Resolution: Govt imposed “stability conditions” on krona asset sales which exactly offset the expected negative effects on the BOP (plan B was to impose a 31 percent tax).

How/why did capital controls work/bind?

- A large body of recent empirical work (including Klein's 2012 BPEA, and my own work on Argentina) has shown scant evidence that controls work/bind, especially in cases when controls are in place for so long.
 - Why was Iceland different?
 - The controls were focused on a relatively small group of foreign investors (in the old banks), but they also constrained (presumably motivated) domestic investors.
 - Are there lessons to be learned?
- CB still has in place a “capital flow management tool”
 - introduced in June 2016
 - forces foreign investors to leave part of any capital in a non-interest bearing account for a fixed period (basically a reserve requirement on capital inflows)

Trilemma Indices for Iceland

Imposition of capital controls in 2008 shifted Iceland's trilemma position: toward exchange rate stability and monetary independence, at the expense of financial openness.

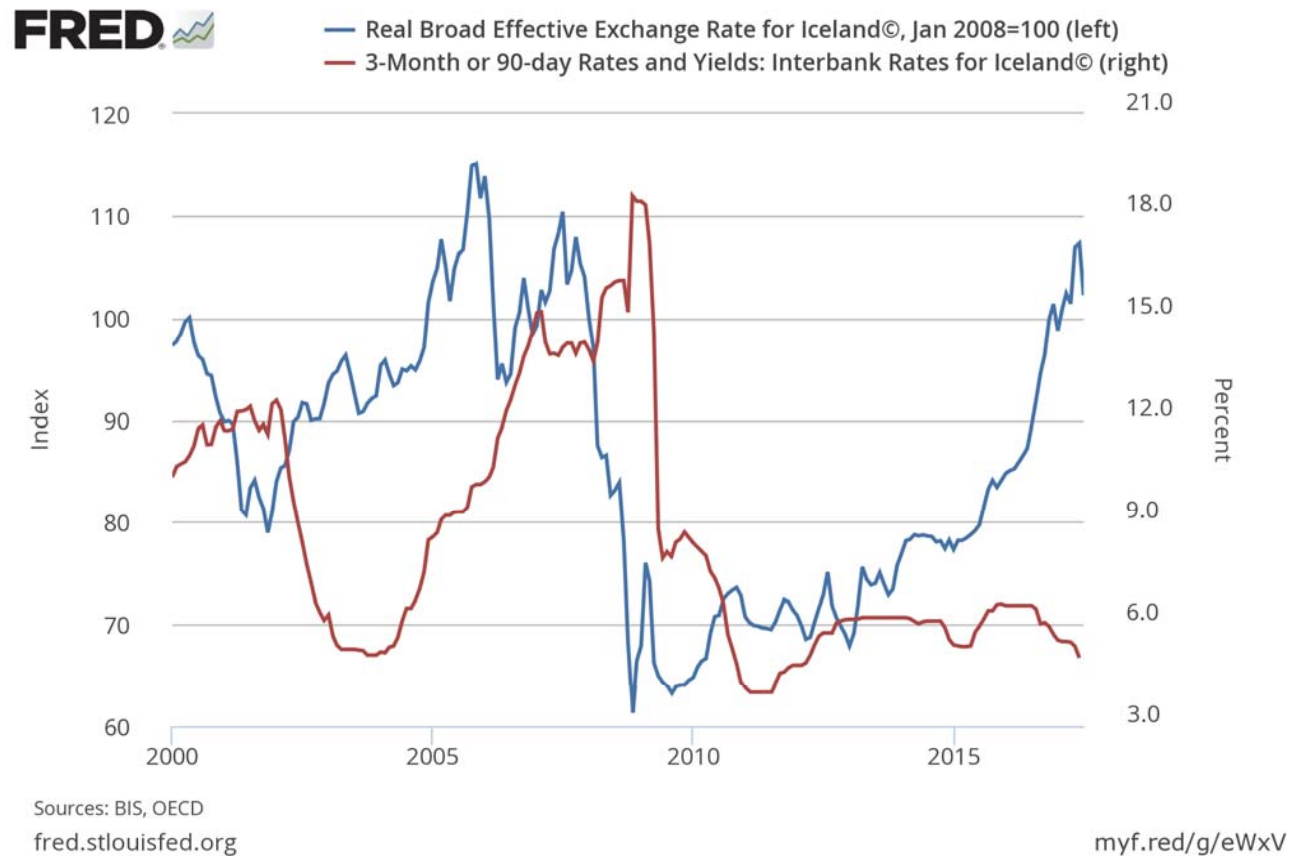


Note: The max values are 1, and the min values are 0. Higher values of the index mean more independence.
Source: "The Trilemma Indices," Aizenman, Chinn and Ito; http://web.pdx.edu/~ito/trilemma_indexes.htm

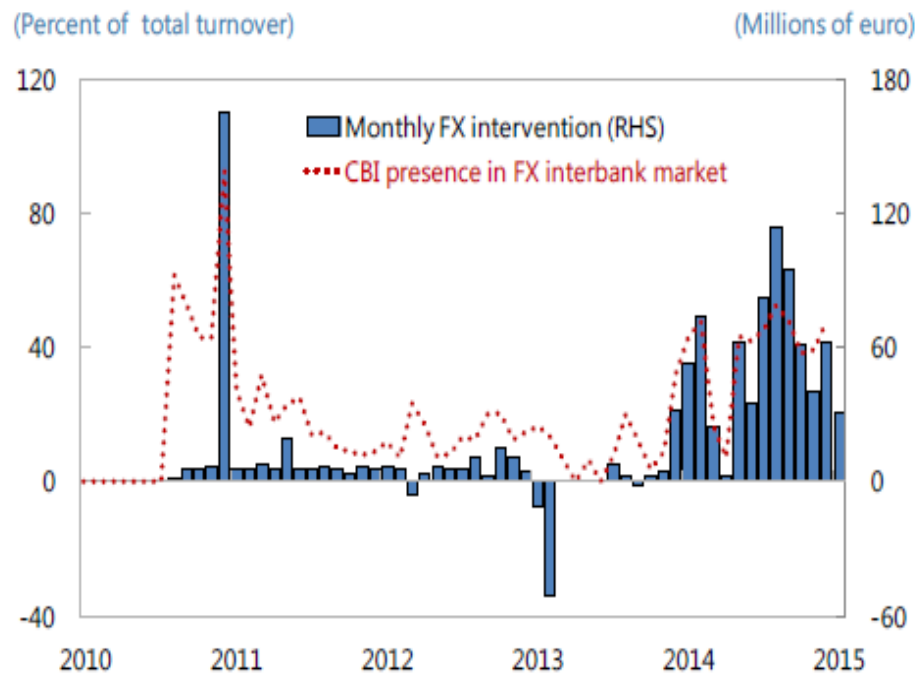
Value of Devaluation

- What if Iceland had been part of the Eurozone?
 - would have had access to ECB liquidity
 - would not have had rise in foreign-currency denominated debt
 - would not have experienced current account reversal

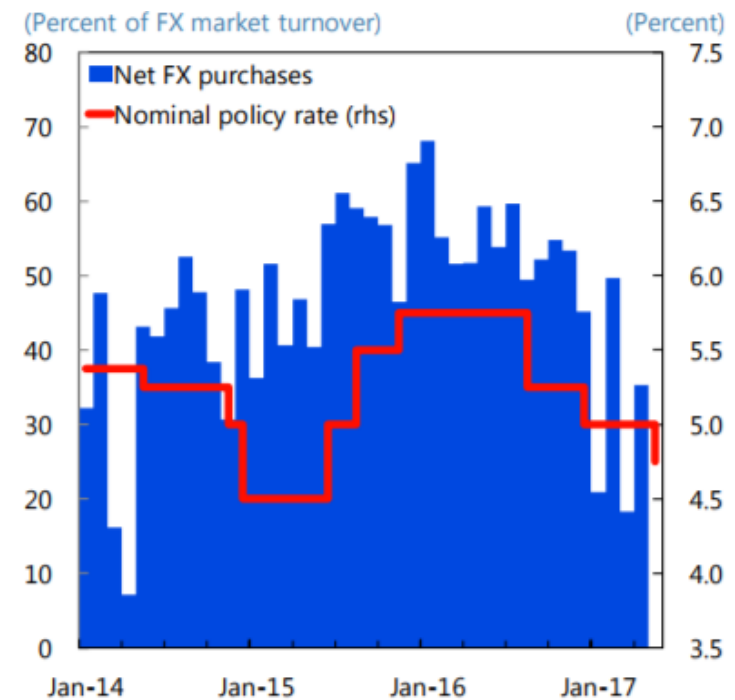
Resurrection of the krona



worth noting that the CBI is actively intervening (buying euros)...



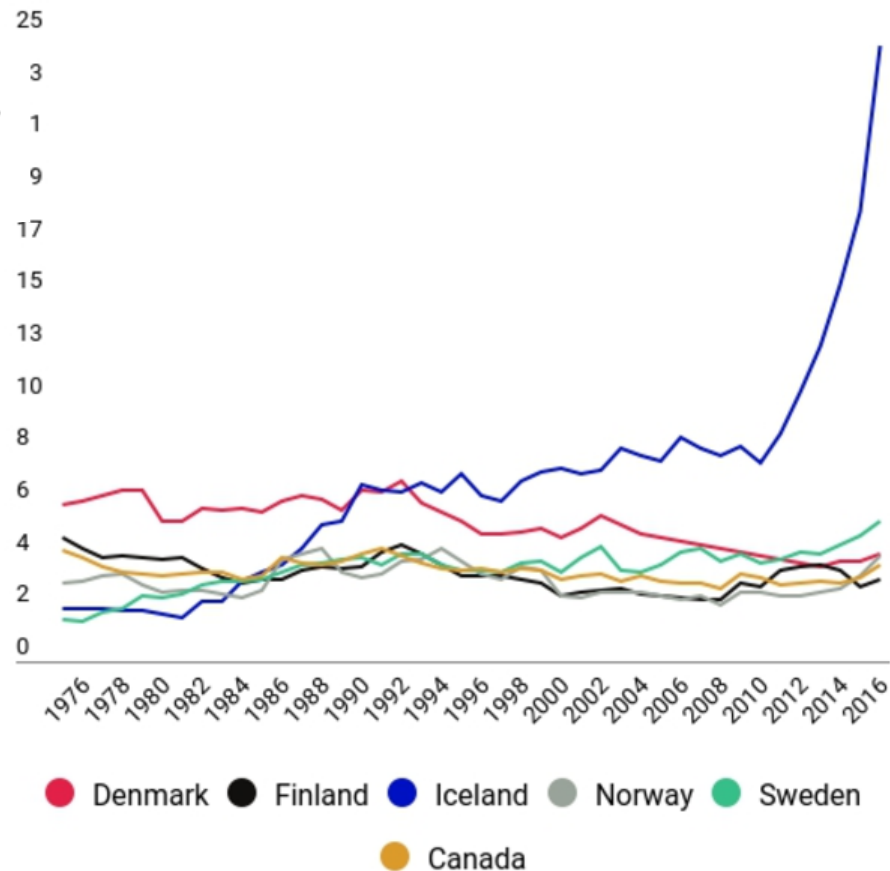
Sources: Central Bank of Iceland; and IMF staff calculations.



Source: Central Bank of Iceland.

Saved by tourism?

Tourism revenue in Iceland has soared as a percentage of total exports, far outstripping other Nordic nations and Canada.
(percent of total exports)



Source: IMF's Balance of Payments database.

Icelandic Lessons

- New ones:
 - Dangers of financial sector “over-development” (in many previous crises financial sector “under-development” was the deemed the problem)
 - Dangers of bank runs in the absence of a (foreign currency) lender-of-last resort (alongside dangers of domestic currency over-lending by CBs)
- Standard Lessons:
 - Dangers of moral hazard due to explicit and implicit safety nets (even when the nets don't really exist)
 - Opacity of bank's balance sheets: fragile funding sources, insider borrowing, large exposures, interlocking cross ownership
 - Incentives for governments to discriminate in favor of domestic deposits/voters in times of crisis

Is Iceland a role model? Or, a cautionary tale?

- Flashing red warning signs were not subtle:
 - Massive carry-trade
 - size of the financial sector: a banking system that was 9 times GDP and a central bank with reserves that were 2% of the liabilities of the banks.
- Textbook crisis management (for a small country):
 - Devalue
 - Increase policy interest rate
 - Fiscal austerity (reduce expenditures, raise taxes, clean-up balance sheets)
 - Impose capital controls
 - Rapid resolution (and no bail-outs) for the banks

SIC Report: explaining regulatory failures...

Other countries with relatively large financial systems manage to avoid disastrous banking outcomes, since, unlike Iceland, those nations have long experience and proven ability to supervise large, international banks. Their accumulated reputation for careful prudential supervision therefore offsets their inability to provide fully reliable lender of last resort protection, at least to some extent

- FME was in general understaffed and lacked experience.
- FME did not enforce the legal provisions which were at their disposal

•Central Bank of Iceland

- The CBI's foreign currency reserve was low in terms of both the economies short term liabilities and also in terms of foreign currency deposits at the banks.
 - Short term liabilities of the economy grew to 16-fold the foreign currency reserve, which reduced the credibility of the financial system.
 - Foreign currency deposits grew to be 8 fold the Central banks foreign currency reserve, which increased the risk of a run on the banks.

•Deposit insurance fund

- Was underfunded, thus decreasing the credibility of the system even further

What could/should the CBI and FSA done differently?

- Hard to believe that regulators were unaware of the growing exposures and insider borrowing among the banks.
 - FSA did not enforce the large exposure rules (and allowed banks to determine which loans were between related parties)
 - CBI continued to loan to the banks after the ECB refused to do so (based on concerns over the love-letter exchanges).
- Was this extreme regulatory capture? Are there examples in other countries of similar behavior?
- Iceland seems a poster-country for a Macroprudential approach:
 - time-varying (counter-cyclical) capital requirements (that could have forced the banks to increase buffers during the boom times)
 - Regulatory focus on foreign-currency amounts of capital (rather than capital ratios)
 - Requirements for contingent capital (reverse convertibles, capital insurance)
 - Requirements for longer-term debt maturities for bank liabilities (esp. given the issues of underfunded deposit insurance)

Measuring the costs of the Crisis

- Updates Laeven and Valencia's (2012) output lost in first three years after a banking crisis
 - Loss = actual output – potential output
 - Potential Output = based on own-country 20-year HP trend before crisis
 - alternative Potential Output = common trend
- Updates Reinhart and Rogoff (2014) severity index
 - Measures decline in GDP per capita from peak to trough and # of years until return to pre-crisis peak.
- Bottom Line: actual costs seem to be lower than anticipated, similar to “costs of TARP” discussions, ex ante risks were high but debt write-downs and improved asset valuations reduced ex post costs

Questions that remain...

- How big is “too big” for a banking system? Is financial sector over-development just as problematic as under-development?
- Would the crisis/recovery have been different if it had not coincided with the Global Financial Crisis? How much did the global context, in terms of the pre-crisis savings glut, and the post-crisis illiquidity of markets, matter?
- Burning Macro Questions: what mattered most for Iceland:
 - flexible exchange rate?
 - rapid resolution of the banking crisis?
 - limited bail-out?
 - Does the Ireland/Greek v. Iceland comparison back this up?