Central Bank of Iceland

Monetary frameworks after the financial crisis

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50. Monetären Workshop in der Akademie Frankenwarte
Würzburg, 3 December 2010

Plan of the presentation

- The pre-crisis frameworks
- Globalisation and monetary policy
- The financial crisis: the case of Iceland
- New directions?:
  - Monetary union
  - Macroprudential
  - IT+

Flexible inflation targeting

- Numerical target for inflation with/without bands
- Instrument independence for the central bank
- Floating exchange rate
- Credibility and longer horizons gave more room of manoeuvre to react to real and financial shocks than in fixed exchange rate regimes or stricter IT => short run stabilisation of output around potential

Flexible inflation targeting 2

- Worked well during the good times
- More and more small open economies adopted the framework as sustaining exchange rate targeting with free capital movements became increasingly difficult

Hidden flaws

- Underpinned by economic theory that abstracted from financial markets – monetary policy without money!
- The interaction between monetary stability and financial stability was ignored
- The one instrument argument was wrong
- Problems with execution due to real economy globalisation
- Financial globalisation created challenges for small open and financially integrated economies

Other frameworks

- US twin goals (inflation and unemployment)
- Two pillar strategy of the ECB
- The Japanese two perspectives

Globalisation and monetary policy

Theoretical benchmark: full real and financial integration

- All goods are traded, i.e. there is no non-traded goods sector
- Instant factor mobility => factor returns are equalised across borders and the national output gap becomes irrelevant as there is no specific national resource constraint
- Free (frictionless!) capital movements
- The real risk adjusted yield curve is through speedy arbitrage completely determined by the global curve and not influenced by domestic monetary policy; not even in the short run

Theoretical benchmark and monetary policy

- Above assumptions are probably not compatible with nominal rigidities =>
- Monetary policy would lose its countercyclical force (which is anyway not needed)
- It could still deliver a given inflation target through a reaction of the exchange rate and the domestic inflation rate to deviations of the domestic nominal policy rate from the global rate

Current relevance?

- We were heading in this direction before the financial crisis but were in most cases far from there and will probably never completely reach this state of affairs
- However, the benchmark illustrates the tendencies at work
- Financial globalisation probably proceeds faster than real globalisation =>
- There is still role for countercyclical monetary policy,
- but the interest rate channel would become weaker, and, in the limit, blocked.

We expect in terms of the interest rate channel:

- Domestic short-term rates are more strongly correlated with medium-term rates than long-term rates
- Domestic long-term rates more strongly correlated with US long-term rates than corresponding medium-term rates
- Stronger correlations with US-rates (more at longer maturities)
- Link between domestic short-term and long-term rates becoming weaker

Mature inflation targeting countries

- Monthly data 1990-2006 for 7 countries on short-term money market rates, medium term (2-3 years) and long-term (10 years) government bond rates and corresponding global rates (proxied by US rates)
- Short-term rates are assumed given by policy and the relevant countries are assumed small enough to have no effect on global rates
- Rolling correlations, error correction model and model in terms of first differences only

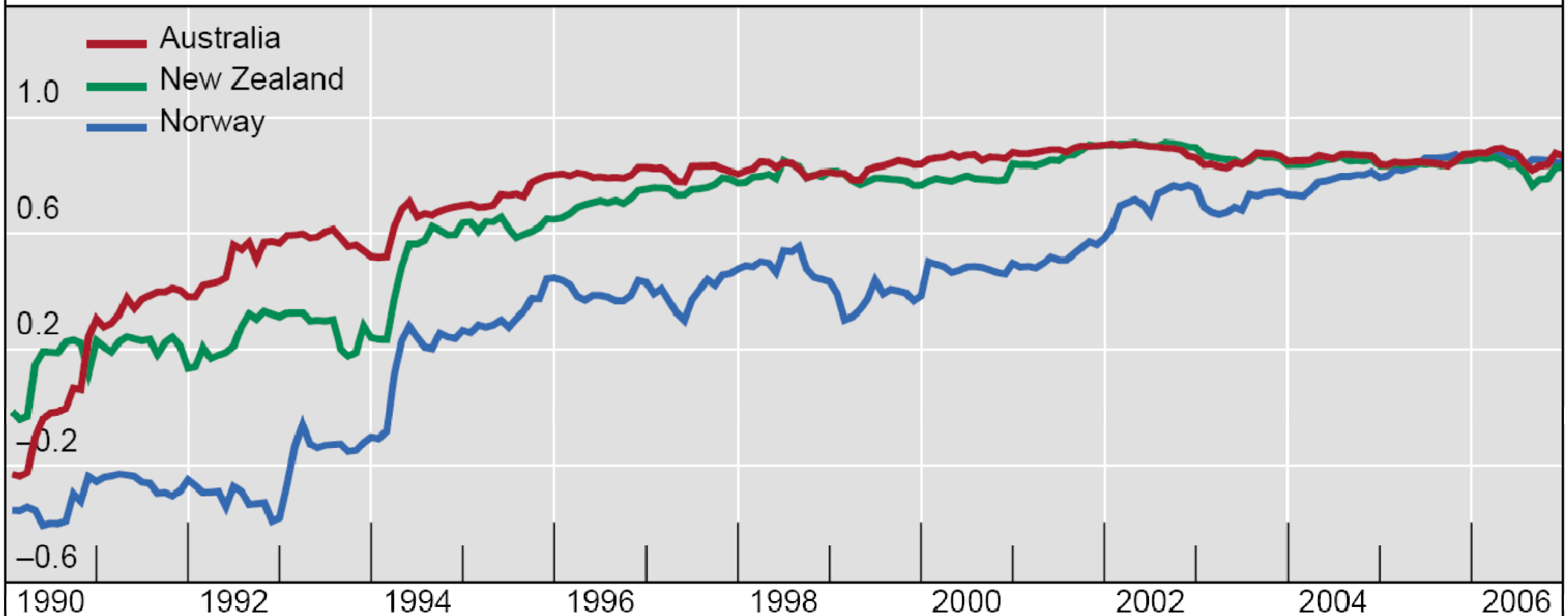
Results: correlations

- Unsurprisingly, expected results across the maturity spectrum emerge, both domestically and vis-à-vis global rates
- Correlations of domestic long rates with global rates are in most cases increasing (and in some very significantly)
- Correlations of short term rates with domestic longer rates have a tendency to weaken, but not uniformly, and sometimes they come back

Results: econometrics

- Coefficients on error correction terms measure adjustment speeds and the existence, or not, of long run relations
- Stronger and more significant for the long-long global relation than the short-long (low significance in many cases)
- That does not imply the absence of an interest rate channel!
- First differences only indicate a significant weakening of the cumulative impact of changes in short rates on domestic long rates (and almost disappearance in 3 cases)

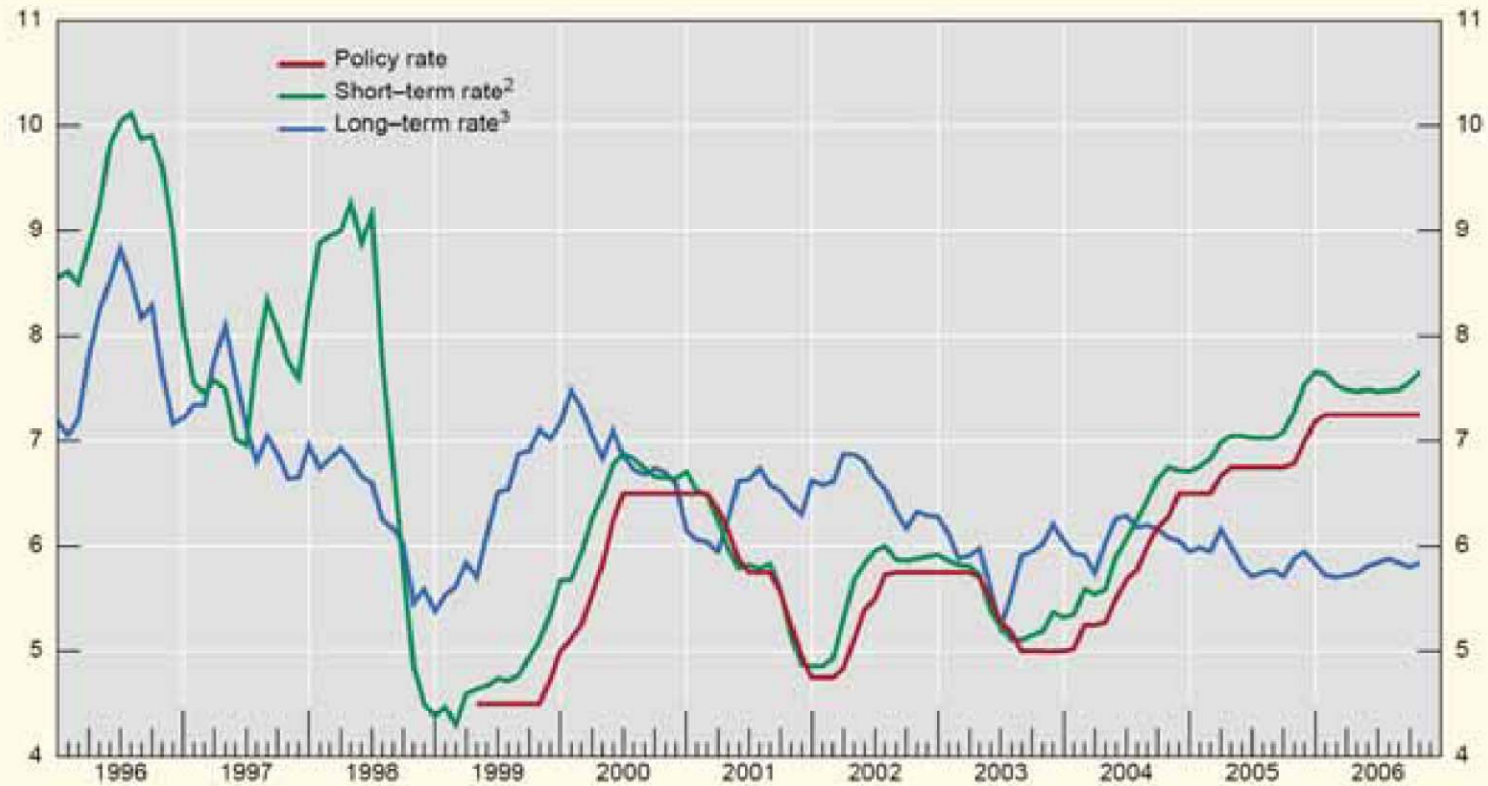
Domestic long-term and US long-term interest rates[1]



[1] Monthly changes using a 36-month moving window.

Sources: National data; BIS estimates.

New Zealand: policy and market rates[1]



[1] In per cent. [2] Three–month rate. [3] Ten–year rate.

Source: national data.

Is this a problem?

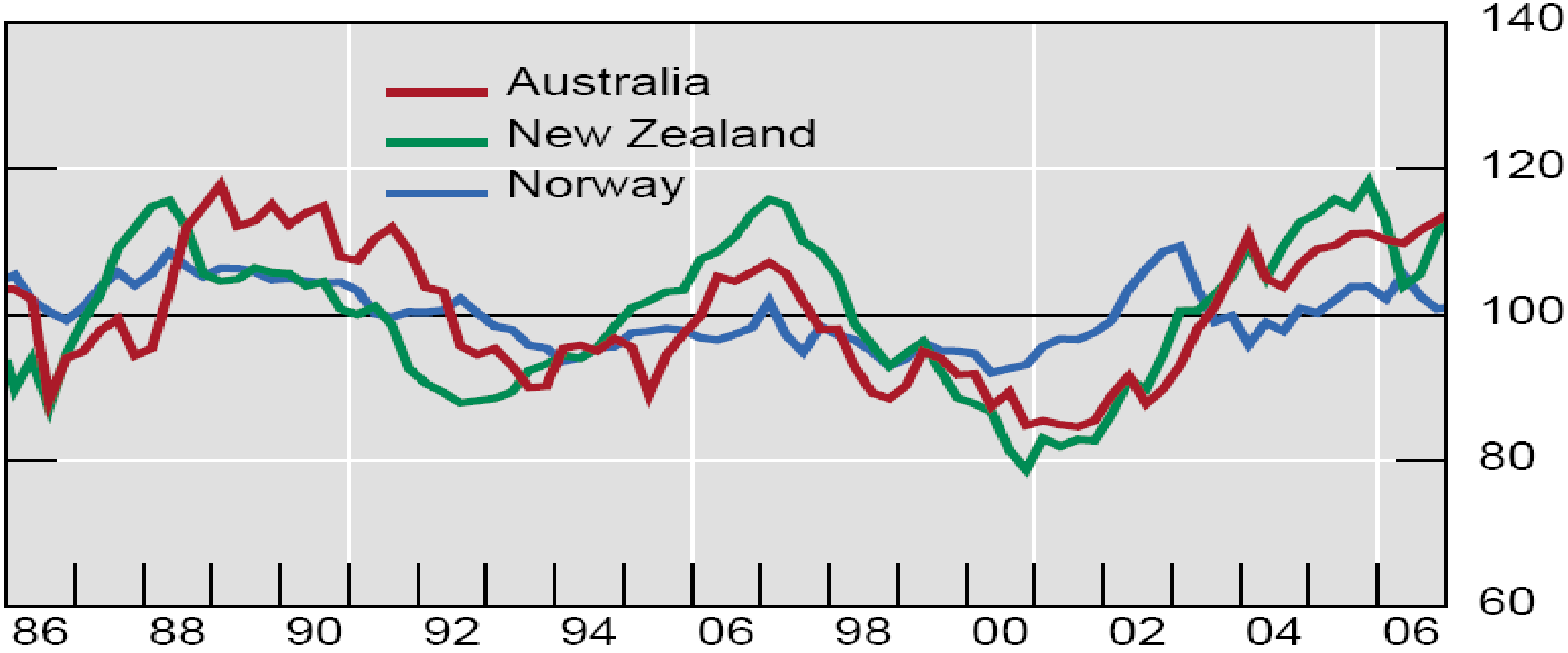
Depends on how well the exchange rate channel does its job!

Monthly volatility of REER (%)

	1990-95	1996-01	2002-06
New Zealand	**1.3**	**1.8**	**1.9**
Korea	**1.5**	**4.5**	**1.4**
Chile	**2.2**	**1.8**	**2.2**
Mature IT countries	**1.6**	**1.5**	**1.3**
Selected emerging Asia*	**1.2**	**2.9**	**1.1**

* Hong Kong SAR, Korea, Malaysia, Singapore and Thailand

Real effective exchange rate developments



Exchange rate cycles: AU1: 15%, AU2: 28%, NZ1: 27% and NZ2: 41%

Exchange rate channel

- Adjustment tool versus a source of shocks
- UIP and carry trade
- Ultimately deliver the inflation target but the road might be getting bumpier
- Exchange rate not part of the Great Moderation?
- Cost of exchange rate volatility?
- Monetary union effects?

Problems and challenges facing small financially open economies

- More difficult to be out of sync with the rest of the world?
- Weaker and less predictable interest rate channel => more difficult to calibrate monetary instruments
- Overburdening of the exchange rate channel; exchange rate volatility; and decoupling from fundamentals => detrimental effect on the traded goods sector
- Amplification of boom-bust asset price cycles => complicates monetary policy and has potential financial stability implications

Potential policy responses

- Live with it?
  - Inflation target will be reached
  - Road might be bumpy
- Avoid being too much out of sync and sharpen and realign existing instruments?
  - Fiscal policy, prudential instruments, taxation, housing systems, forex intervention or even more active exchange rate management (Singapore?)
- Monetary union?

The case of Iceland

The recent Icelandic saga

Two separate but interrelated stories:

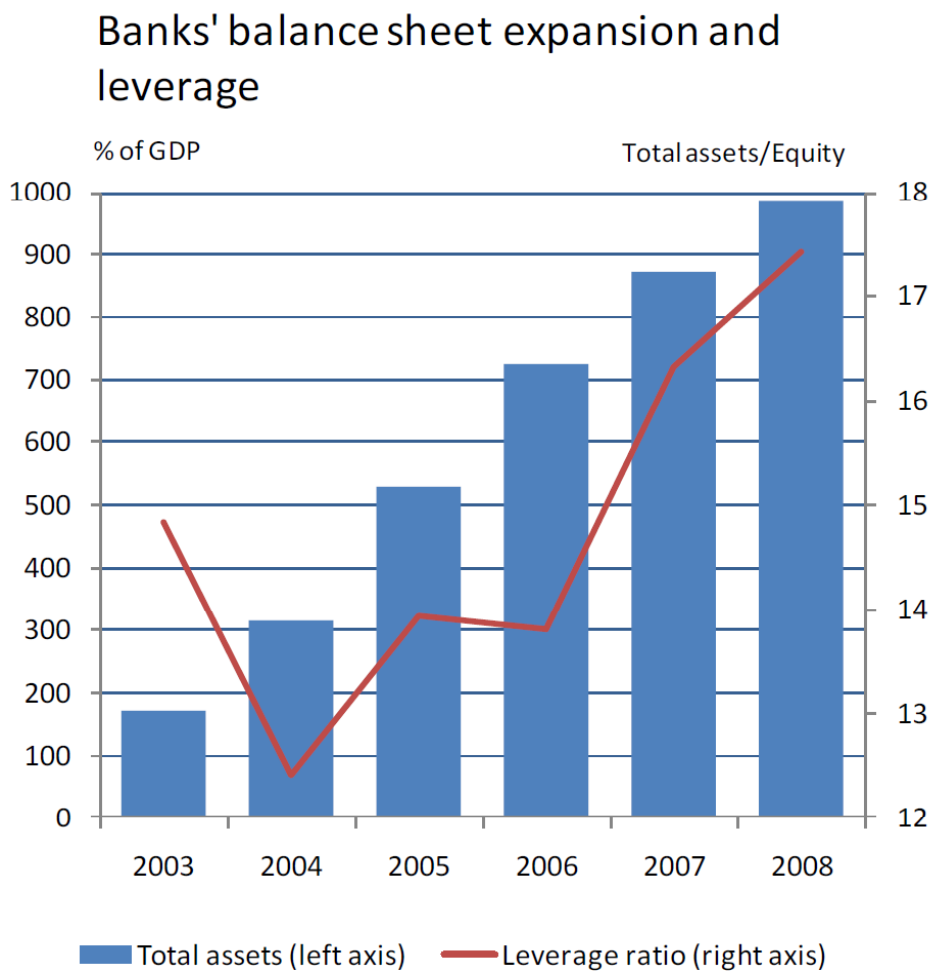
1. Iceland's boom-bust cycle and problems with macroeconomic management in small, open, and financially integrated economies
2. The rise and fall of three cross-border banks on the basis of EU legislation (the European "passport")

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.

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

Rapid expansion of the banks



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

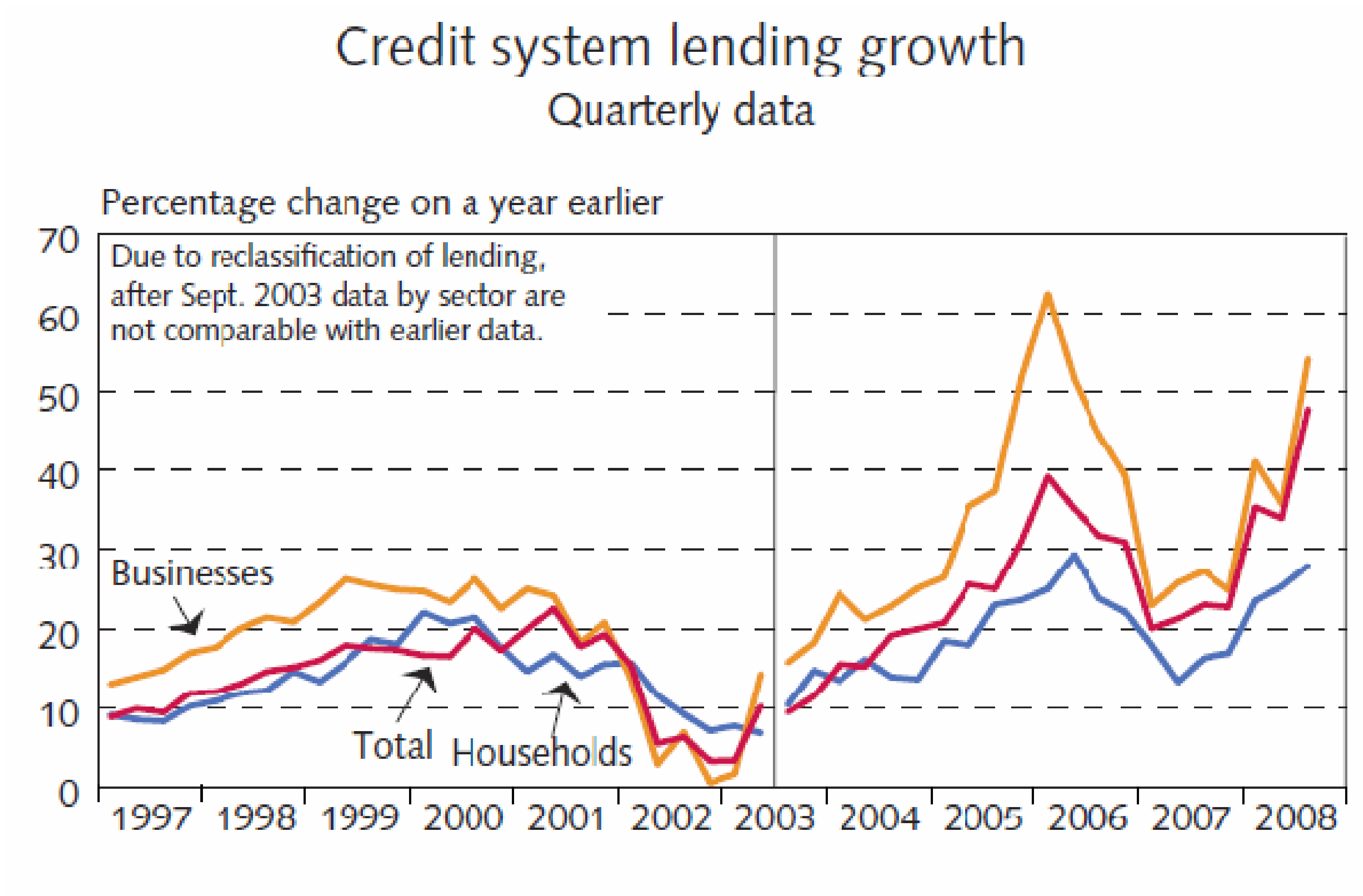
Source: Central Bank of Iceland.

Iceland: Monetary framework

- Exchange rate targeting got more and more difficult as Iceland got more financially integrated
- IT adopted in March 2001 (target of 2½%)
- CBI granted instrument independence
- Bank supervision taken out of the CB in the late 1990s and an integrated FSA established
- The framework was put to a test from 2004 onwards

Build-up of domestic imbalances

Credit boom following privatisation of the banks



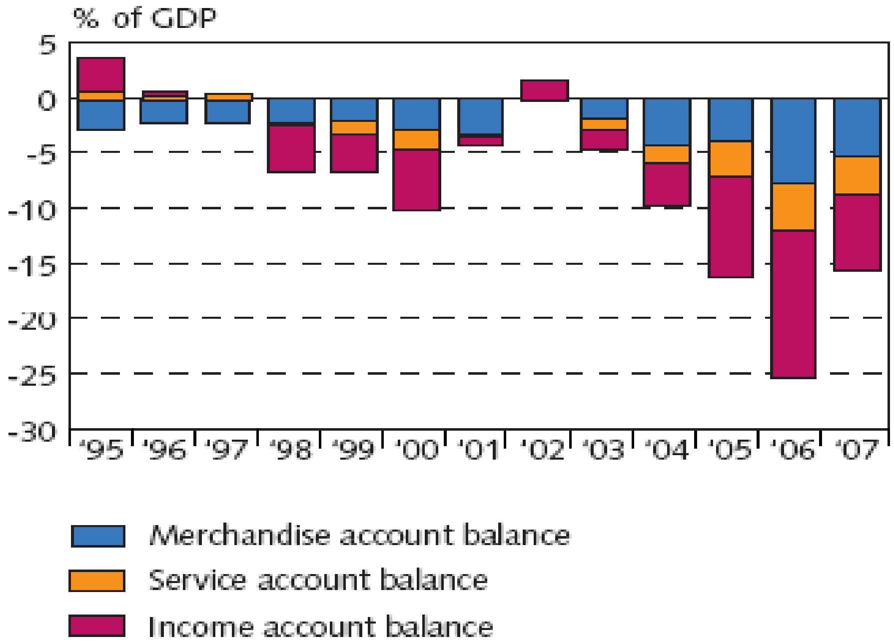
Build-up of domestic imbalances

Strong capital inflows and overheating resulted in unprecedented current account deficit

Chart VII-1

Current account balance components[1]

Annual data 1995-2007

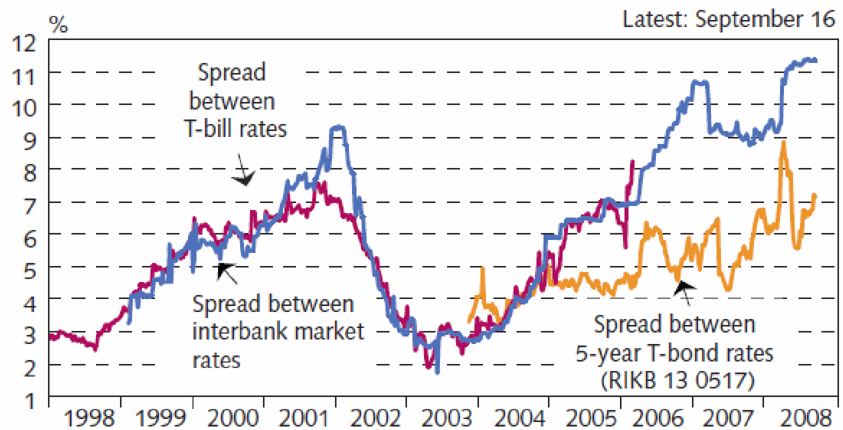


1. Net current transfer is included in balance on income.
Sources: Statistics Iceland, Central Bank of Iceland.

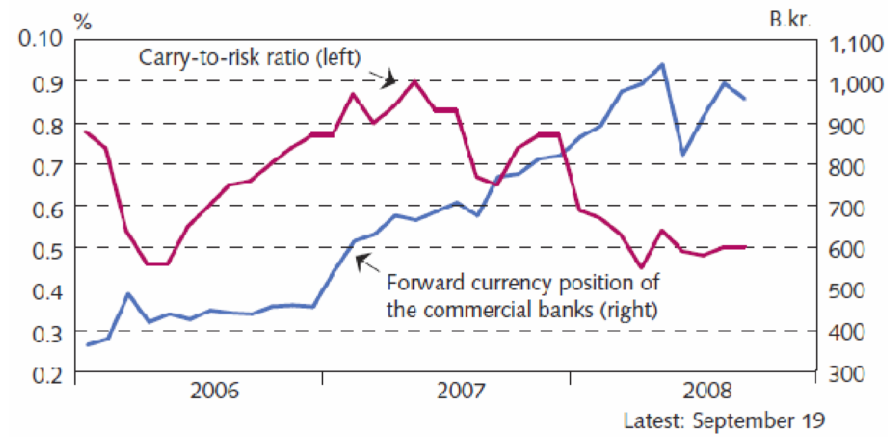
Build-up of domestic imbalances

Wide interest rate differential encouraged carry trade

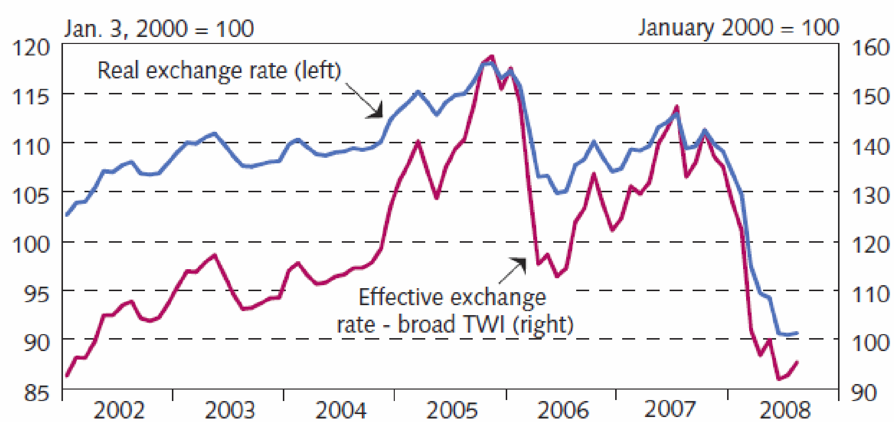
Interest rate differential with abroad
Weekly data



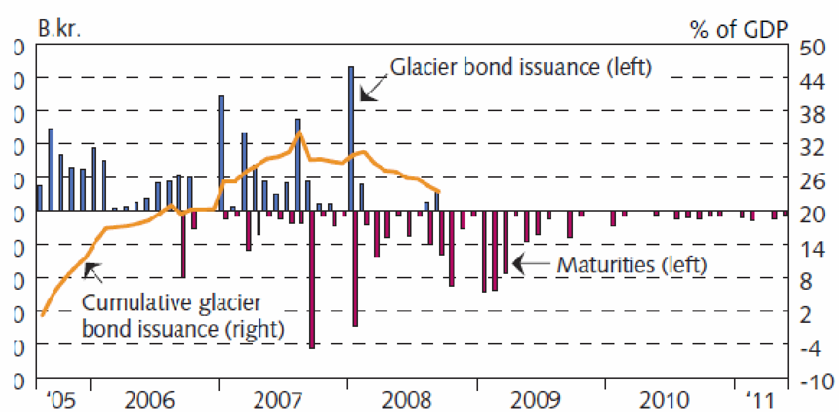
Carry-to-risk ratio and forward currency position of the commercial banks
Monthly data



Nominal and real effective exchange rate of the króna
Monthly averages



Króna Eurobond issuance[1]
Monthly data



Adjustment and three shocks

- Unusually large external and internal macroeconomic imbalances 2005-2007 associated with an unsustainable boom
- 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

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

New directions?

Monetary union

- Monetary union would reduce the financial integration problem for macroeconomic management in small open economies
- Also beneficial from the financial stability standpoint:
  - Reduces the risk of currency crisis
  - Cross-border banking activities less risky – large and credible LOLR
- But current EU problems create a ?
- The exchange rate is to a degree both the problem and the solution

Macroprudential

- Use of prudential instruments with the aim of counteracting systemic risk and promoting the stability and soundness of the financial sector as a whole
- Not a demand management policy but monetary policy has to take it into account
- Time series element: procyclicality
- Cross section element: common exposures, interconnections and contagion
- Calls for greater role of central banks

Inflation targeting +

- Better support of fiscal policy: avoid policy conflicts
- Macroprudential
- Monetary policy and financial stability: lean and not only clean
- Longer horizon
- Bigger role for monetary and credit
- Support from an improved microprudential regulation and supervision
- More active foreign exchange interventions
- Convergence of frameworks?