

FINANCIALISATION AND EXCHANGE RATE DYNAMICS IN SMALL OPEN ECONOMIES

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Financialisation

Financialisation as a broad concept refers to:

- a) an overall increase in financial activities of various kinds
- b) introduction and use of new financial instruments.

The concept of financialisation is slightly different than the concept of financial development in the literature.

Channels of financialisation:

- **Effects on income distribution:** Financialisation leads to a rising gross profit share and falling wage share. The major reason for this has been the rising profit claims and change in the sectoral composition of the economy in favour of the financial and corporate sector.
- **Effects on real investment:** Financialisation has imposed short-termism by generating high profits in the short run through increasing dividend payments and share buybacks in order to boost stock prices. This has resulted in less real investment in capital stock and increased preference for financial investment.
- **Effects on Household debt:** Regarding consumption, financialisation has generated increasing potential for wealth and debt-led consumption booms.
- **Effects on current account balances:** The deregulation and liberalisation of the markets has created the potential to run and finance persistent current account deficits. Simultaneously it has created the problems of foreign indebtedness, speculative capital flows, exchange rate volatilities and currency crises.

Overview of the crisis

External Imbalances

- Large macro imbalances between creditors and borrowers.
- Persistent current account deficits.

Causes of the Crisis:

- No consensus on the causes.
- Balance of payments crisis (BOP)?
- Sovereign Debt crisis?
- Or Both ?

Factors held responsible

- Fiscal balances.
- Real exchange rate divergence (i.e. real appreciation in borrowers).
- Large Saving-Investment gaps in borrowers (i.e. private sector spending beyond its means)

Proposed solutions:

- Correction of fiscal balance.
- Improving real exchange rates
- Or both

Policy recommendation:

- **“Austerity”**

(Assumption 1: Improved fiscal balance boosts confidence (both consumer and investor).

(Assumption 2: Targeting real exchange rate would increase export growth (improve trade balance).

Policy Outcome in Currency union

- Confidence further shattered.
- Internal devaluation (wage reductions) led to demand compression. This has resulted in long-lasting recession.

Policy Outcome in Sovereign Regimes

- Domestic Demand compression due to crisis.
- Currency devaluation has helped in adjustment e.g. Iceland and Poland.

Radical Approach:

- Burden should be shared by the creditors as well.
- Call for increased wages and prices in countries with surpluses in order to remove real exchange rate divergences.

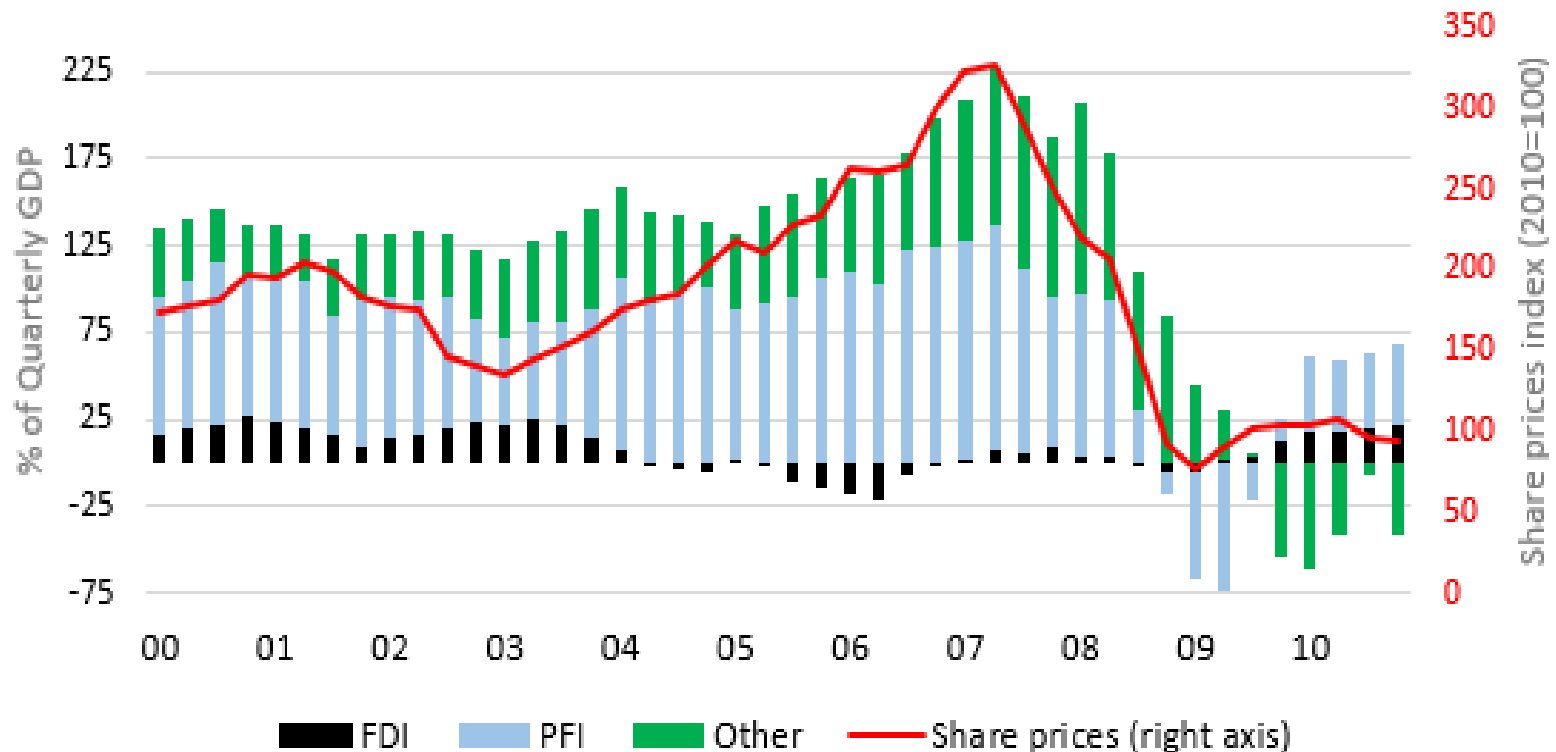
A case of Iceland and Ireland

Pre-crisis:

- Huge international borrowing (Large inflows).
- Iceland: through higher interest rates.
- Ireland: though lower interest rates.
- Mostly destabilising inflows (short-term inflows).
- Small share of FDI in total inflows

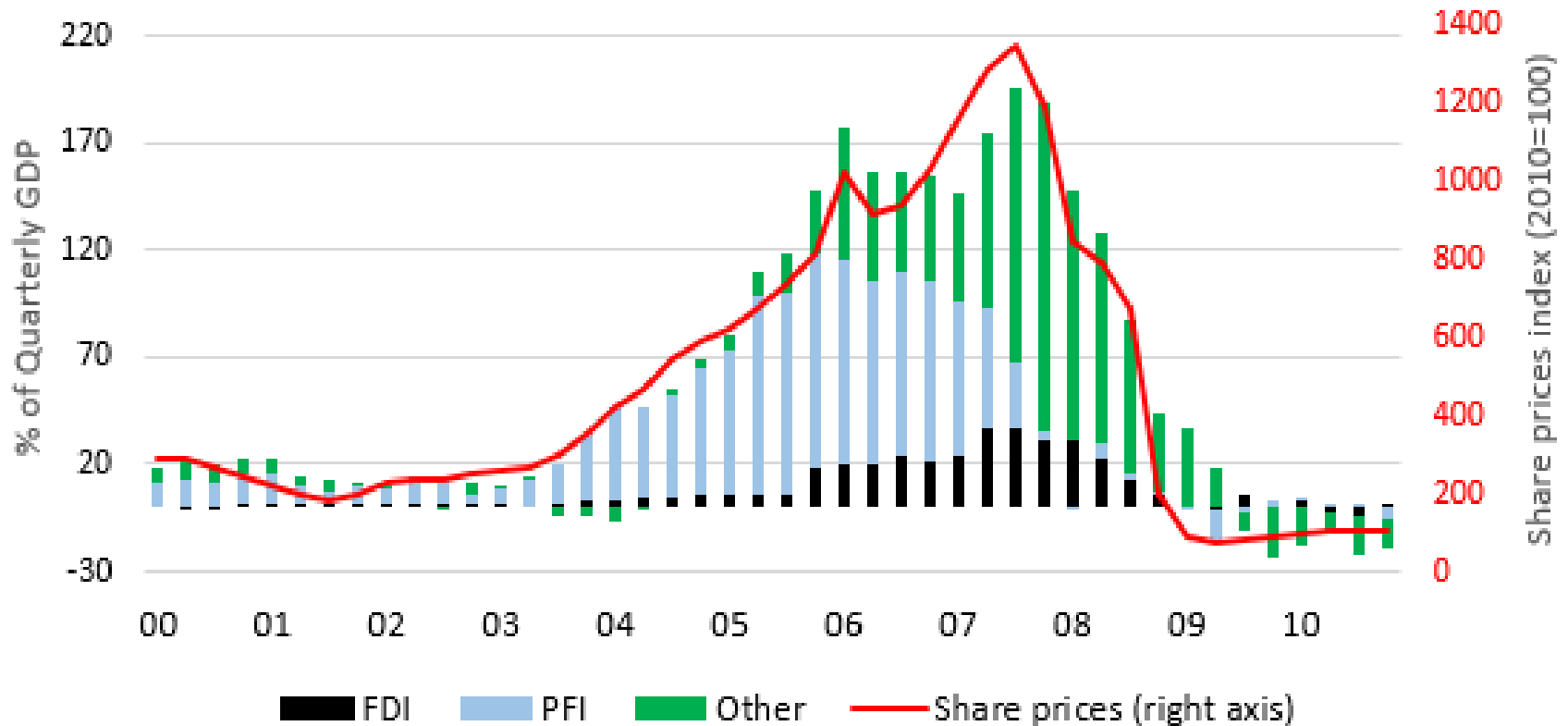
Inflows and share prices

- Ireland

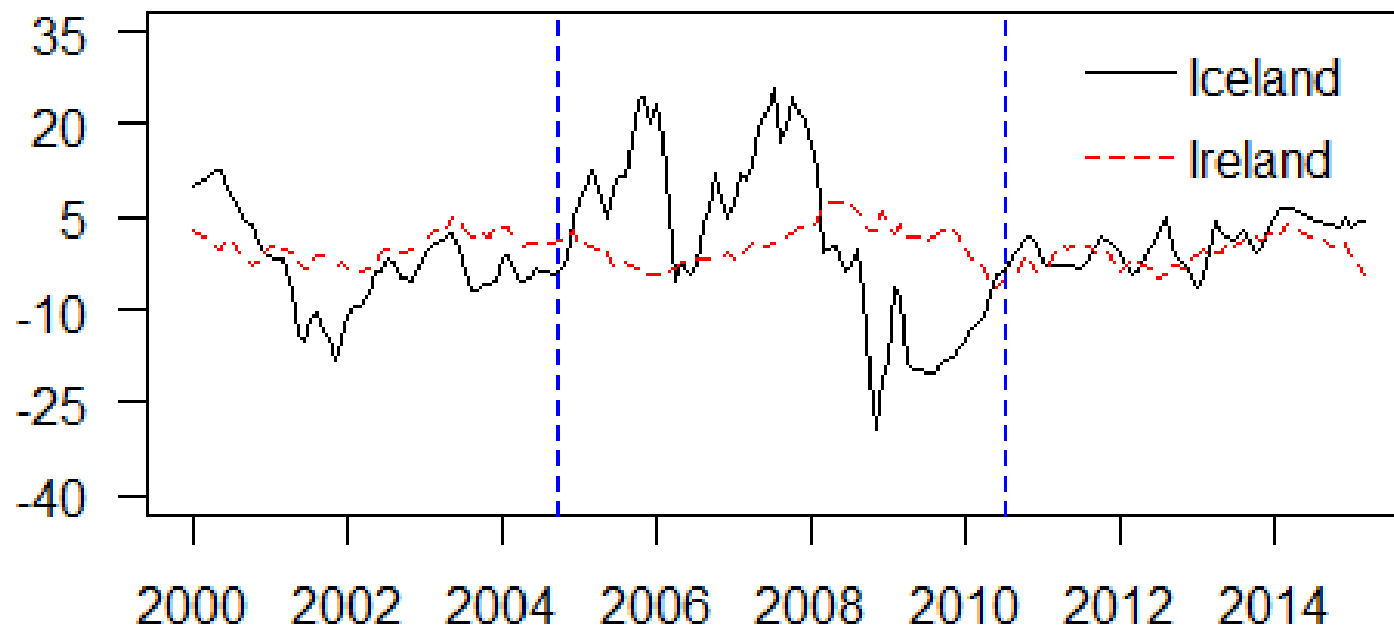


Inflows and share prices

- Iceland



Exchange rate misalignment



- Large real overvaluation in Iceland

(Misalignment is measured as exchange rate deviation from its long-run path using HP-filter ; positive values indicate overvaluation and vice versa)

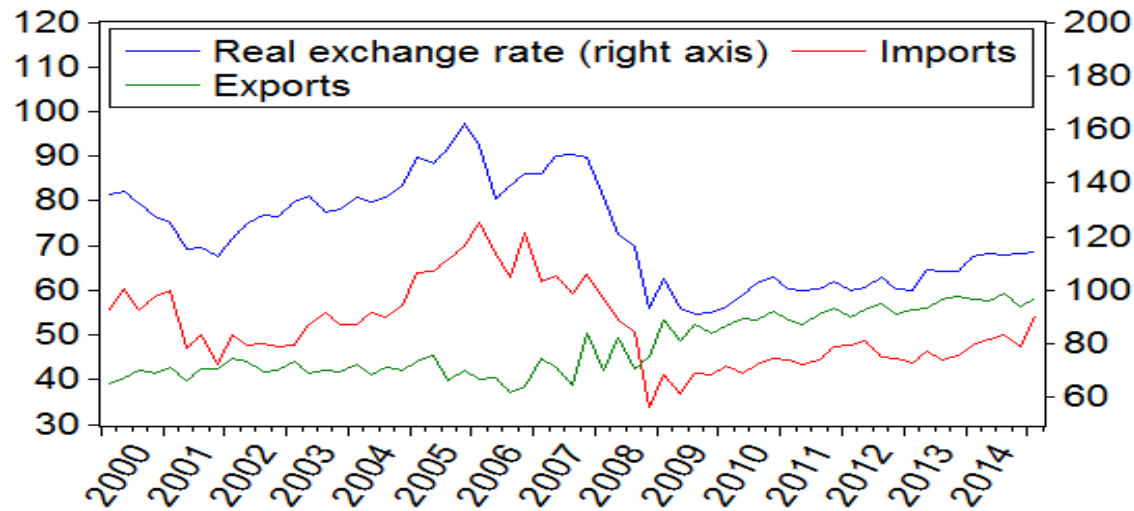
Post-crisis scenario in Iceland and Ireland

- Imbalances have sharply contracted.
- Different recovery patterns have emerged due to different exchange rate regimes.
- Two important factors in adjustment to the crisis.
 - 1) Expenditure Switching
 - 2) Domestic Demand Compression

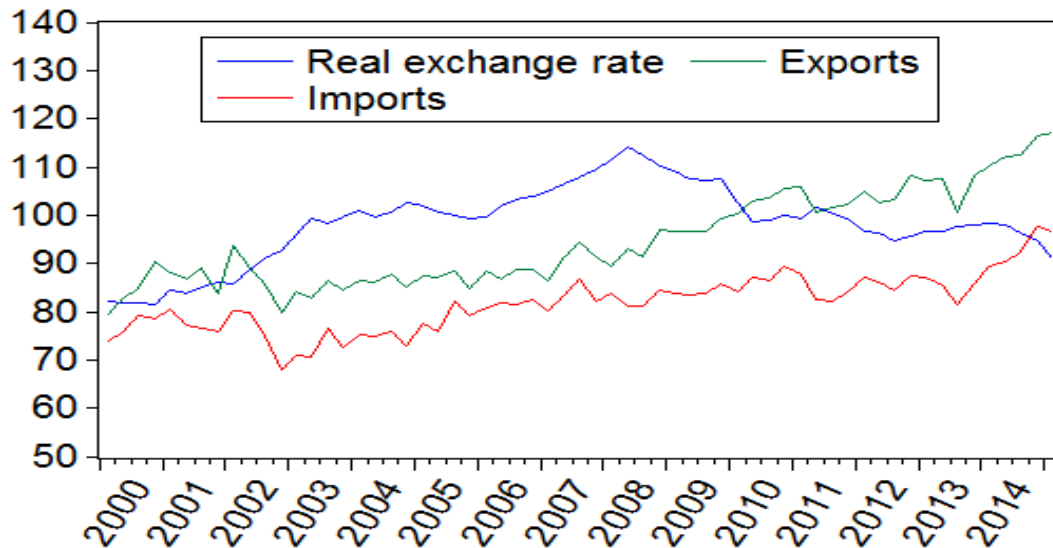
Real exchange rate and trade

(time: 1999Q1-2014Q4)

- Iceland



- Ireland



A simple theoretical framework

Based on National accounts and Balance of payments

Model set-up (system of equations)

GDP (y) is given by:

- $y = c + i + g + x - m$

Consumption (c):

- $c = f(yd, w)$, where yd is the disposable income.

Wealth (w):

- $w = f(w, yd - c)$

Demand for foreign bonds by Iceland (B)

- $B = f(r^*, ex^*)$

Demand for Icelandic bonds by foreigners (b)

- $b = f(r, ex^*)$.

Exchange rate expectation (ex^*)

- $ex^* = f(exchange\ rate\ misalignment, momentum\ trading)$

Demand for real imports

- $m = f(rex, y)$

Demand for real exports

- $x = 80\% \text{ exogenous}, 20\%$ (tourism is strongly cointegrated with real exchange rate)

Nominal Exchange rate is determined by

- $ex = f(b)$

Current Account Balance is given by

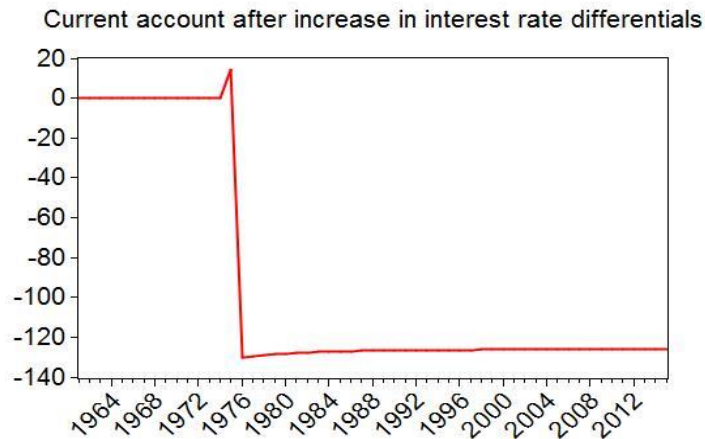
- $CAB = x - m + r^*(b) - r(B)$

g, i, r and r^* exogenous to the model

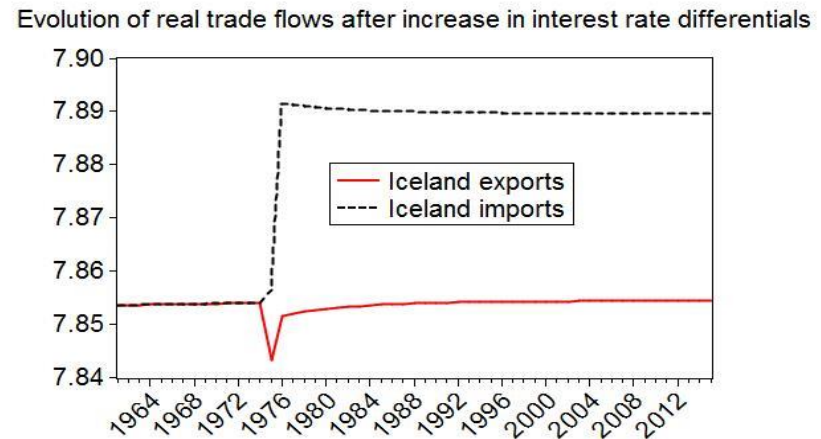
Simulation results (Iceland)

Shock 1: Interest differential shock (100bps)

Current account balance

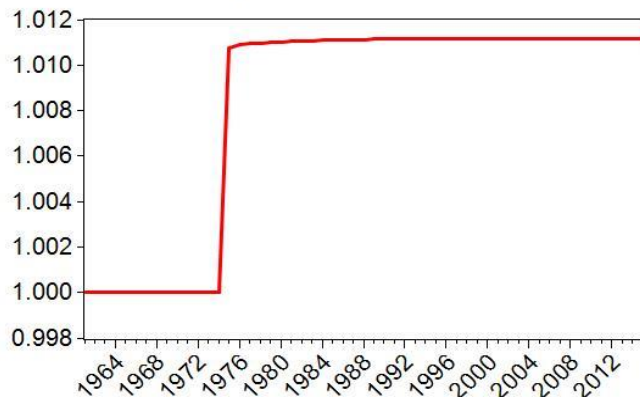


Trade balance



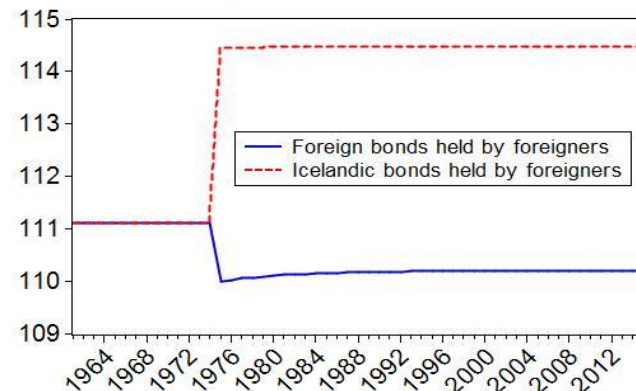
Real exchange rate

Evolution of real exchange rate after increase in interest rate differentials



Demand for bonds

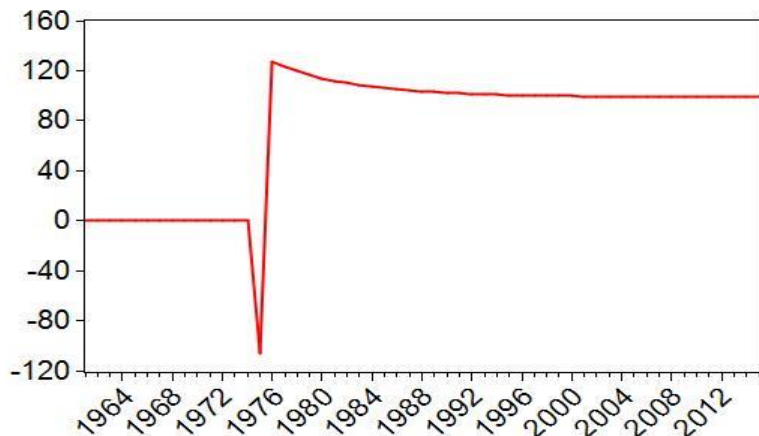
Evolution of bond holdings by foreigners after interest rate differentials



Shock 2: 10 % exchange rate misalignment

Current account balance

Evolution of Current account after expected depreciation



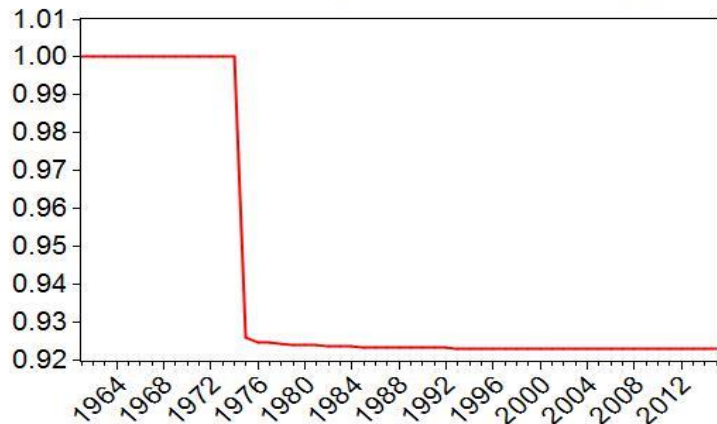
Trade balance

Evolution of real trade flows after expected depreciation.



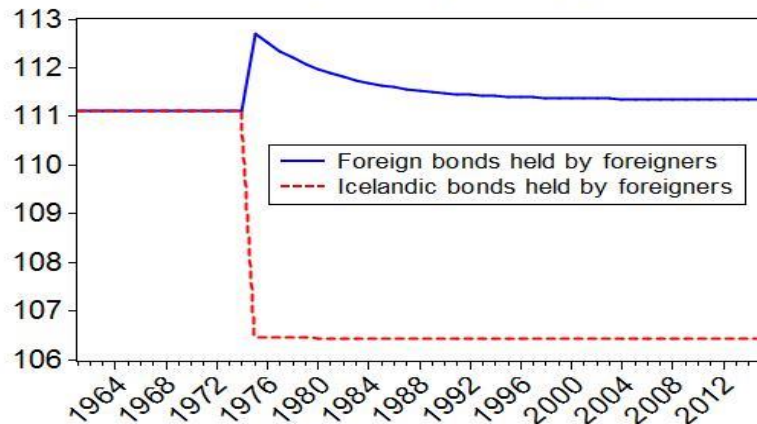
Real exchange rate

Evolution of real exchange rate after expected depreciation



Demand for bonds

Evolution of bond holdings in foreign after expected depreciation.



Empirical Investigation using SVAR

4 SVAR models to investigate the crisis

- 1) Model of “Crisis build up under sovereign regime”
(Iceland)
- 2) Model of “exchange rate, share prices and inflation nexus” (Iceland)
- 3) Model of “inflows and real exchange rate dynamics”
(Iceland and Ireland)
- 4) Model of “adjustment to the crisis under different exchange rate regimes” (Iceland and Ireland).

“Crisis build up under sovereign regime” (Iceland)

- **Model 1:** $x_t = [\Delta r, \Delta ex, F_{ma}, CAB_{ma}, \Delta H]$

- Δr interest rate differentials (Iceland and EU)
- Δex (nominal exchange rate)
- F_{ma} (Capital inflows (4 period moving average))
- CAB_{ma} (Current account balance (4 period moving average))
- ΔH (Household loans linked to foreign currency)
- Δ represents first differences

- **Restrictions:**

$$\begin{array}{c}
 \varepsilon_r \quad \varepsilon_{ex} \quad \varepsilon_F \quad \varepsilon_{CAB} \quad \varepsilon_H \\
 \\
 \begin{array}{c}
 \Delta r \\
 \Delta ex \\
 F_{ma} \\
 CAB_{ma} \\
 \Delta H
 \end{array}
 \begin{bmatrix}
 1 & 0 & 0 & 0 & 0 \\
 X & 1 & 0 & 0 & 0 \\
 X & 0 & 1 & 0 & 0 \\
 X & X & X & 1 & 0 \\
 0 & X & 0 & 0 & 1
 \end{bmatrix}
 \end{array}$$

- where ε_r , ε_{ex} , ε_F , ε_{CAB} , ε_H , represents interest differential shocks, exchange rate shocks, current account balance shocks and household loans' shocks respectively.

“Exchange rate, share prices and inflation nexus” (Iceland)

- **Model 2:** $x_t = [\Delta ex_{\text{€}}, \Delta CPI, \Delta S]$
- $\Delta ex_{\text{€}}$ (exchange rate ISK per euro)
- ΔCPI (consumer price index)
- ΔS (share price index)
- **Restrictions:**

$$\text{Model 2:} \quad \begin{array}{ccc} & \varepsilon_{ex} & \varepsilon_{cpi} & \varepsilon_S \\ \Delta ex & \left[\begin{array}{ccc} 1 & 0 & 0 \\ X & 1 & 0 \\ X & X & 1 \end{array} \right] \end{array}$$

- where ε_{ex} , ε_{cpi} , ε_S , represents nominal exchange rate shocks, cpi shocks and share price shocks respectively.

“Inflows and real exchange rate dynamics”

(Iceland and Ireland)

Model 3: $x_t = [\Delta R_{ex}, FDI_{ma}^*, PFI_{ma}^*]$

ΔR_{ex} represents the log difference of the real exchange rate.

FDI_{ma}^* and PFI_{ma}^* represents the moving average of Foreign Direct Investment to GDP, Portfolio Investment to GDP.

Restrictions:

•

	$\varepsilon_{R_{ex}}$	ε_{FDI}	ε_{PFI}
Model 3:	ΔR_{ex}	$\begin{bmatrix} 1 & 0 & 0 \\ X & 1 & 0 \\ X & X & 1 \end{bmatrix}$	

- where $\varepsilon_{R_{ex}}$, ε_{FDI} , ε_{PFI} , represents real exchange rate shocks, FDI shocks, portfolio investment shocks, other investment shocks respectively.

A (*) sign with any variable refers to its measure in percentage of quarterly GDP. We have used average value of the quarterly nominal GDP for the period 2000 to 2014.

“Adjustment to the Crisis under different regimes”

(Iceland and Ireland)

- Model 4: $x_t = [\Delta R_{ex}, \Delta D, CAB_{ma}^*]$
- ΔR_{ex} represents log difference of real exchange rate,
- ΔD represents the log difference of domestic demand
- CAB_{ma}^* represents current account balance to GDP
- **Restrictions:**

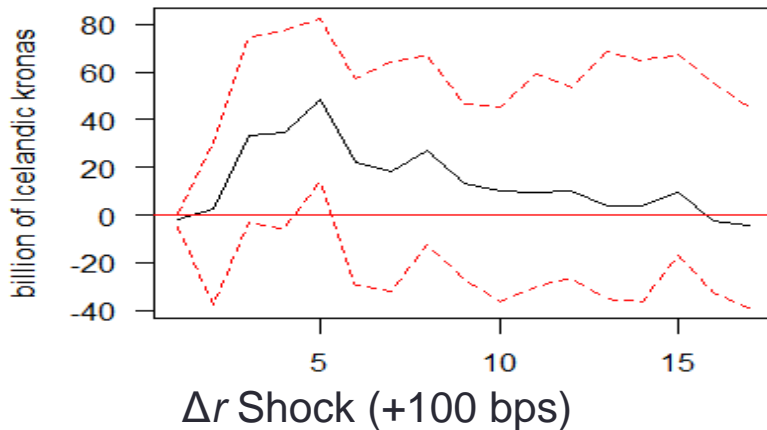
$$\text{Model 4:} \quad \begin{matrix} & \varepsilon_{Rex} & \varepsilon_D & \varepsilon_{CAB} \\ \Delta R_{ex} & \left[\begin{array}{ccc} 1 & 0 & 0 \\ X & 1 & 0 \\ X & X & 1 \end{array} \right] \\ \Delta D & \\ CAB_{ma} & \end{matrix}$$

- where ε_{Rex} , ε_D , ε_{CAB} , represents real exchange rate shock, demand shock, current account balance shock respectively.

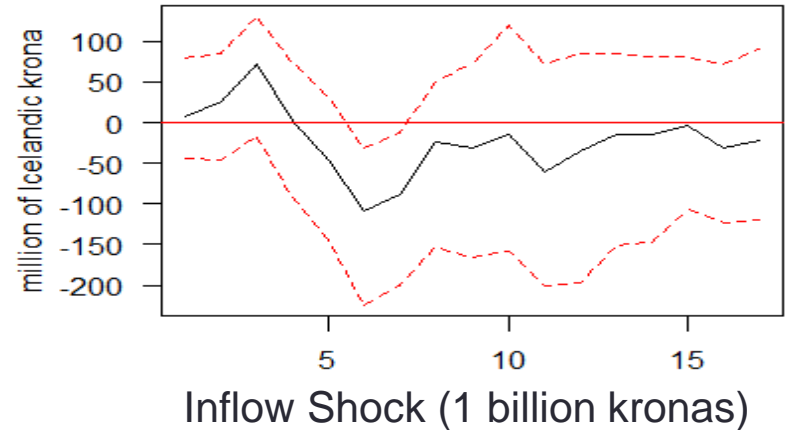
Results: Impulse responses

Model 1: "Build-up of external imbalances under sovereign regime" (Iceland)

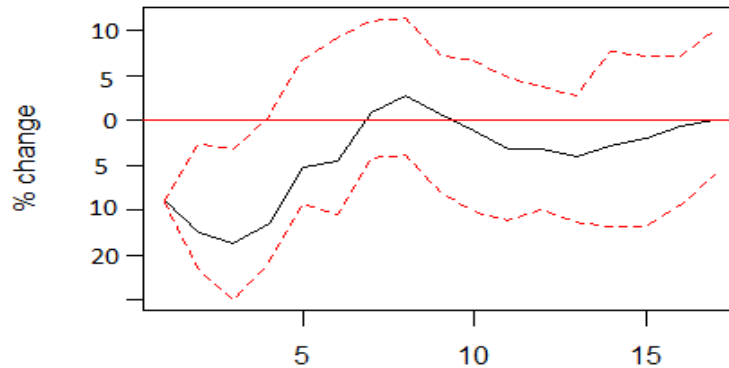
Response of inflows



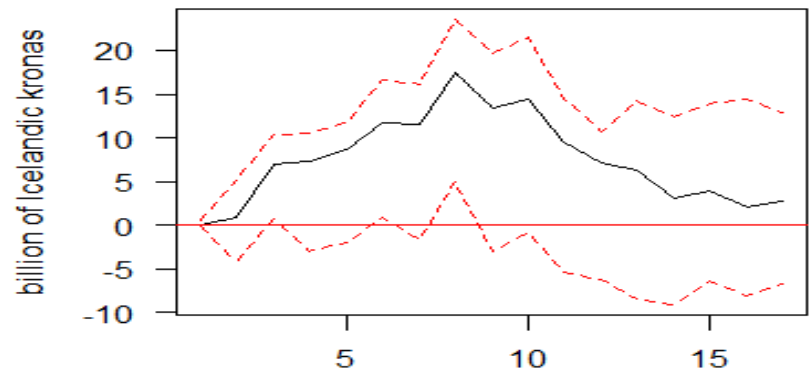
Response of Current account balance



Response: Household loans (linked to forex)



Response: Current Account Balance

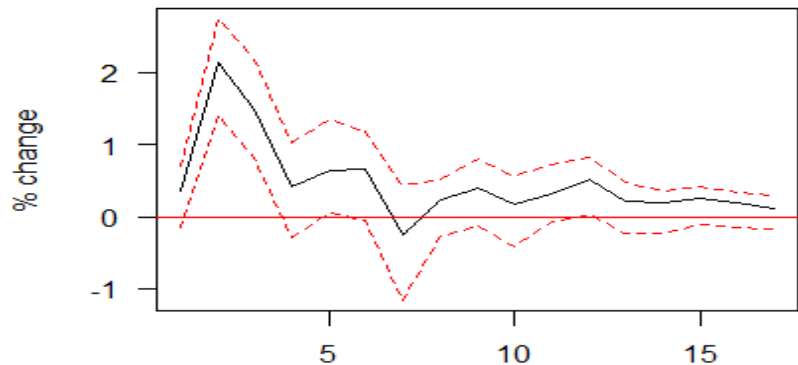


Exchange rate depreciation of 10% points

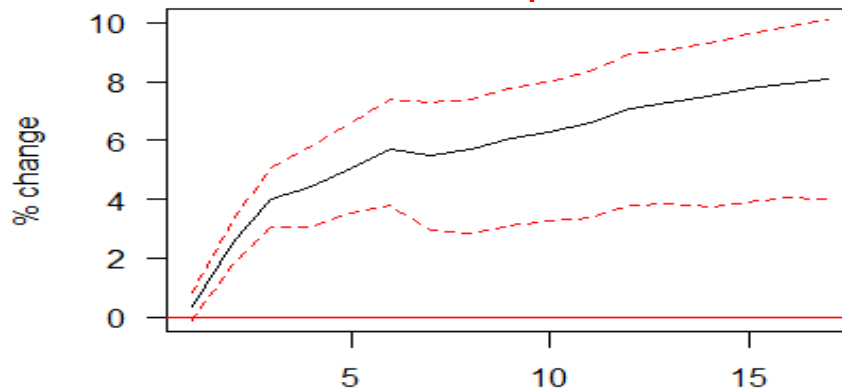
Results: Impulse responses

Model 2: "Exchange rate, inflation and share prices nexus" (Iceland)

Response: Inflation

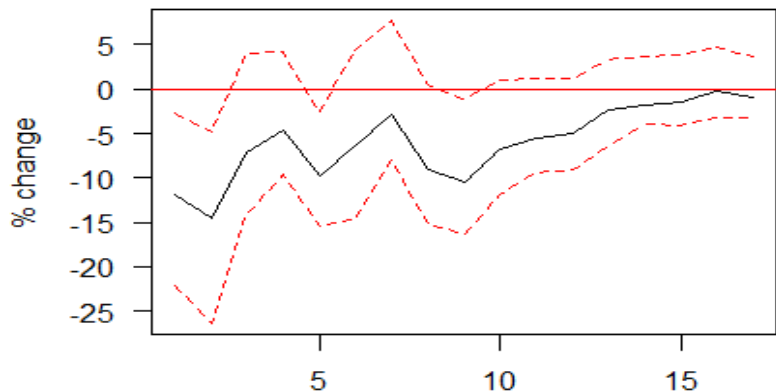


Accumulated response: Inflation



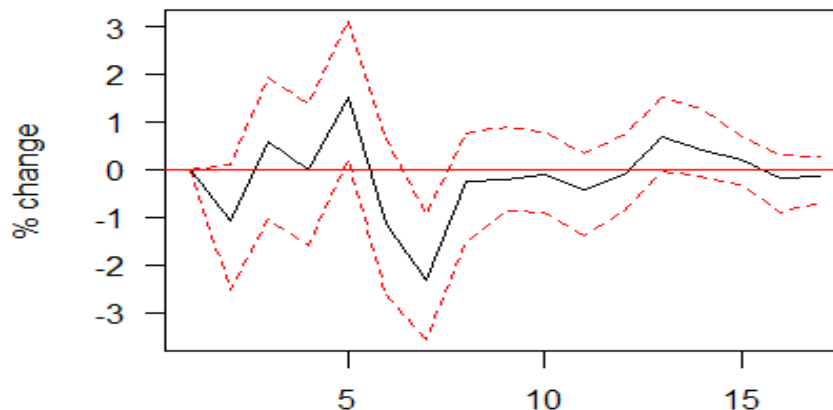
Shock: Exchange rate depreciation of (20 % ↓)

Response: Share Prices



Shock: Ex-rate (20% ↓)

Response: Exchange Rate

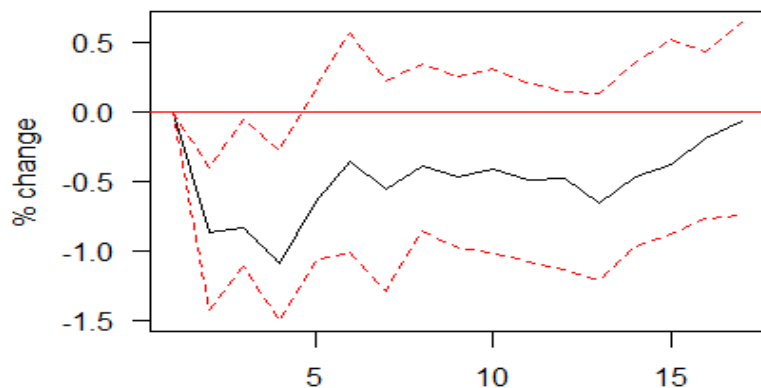


Shock: share price (20% ↑)

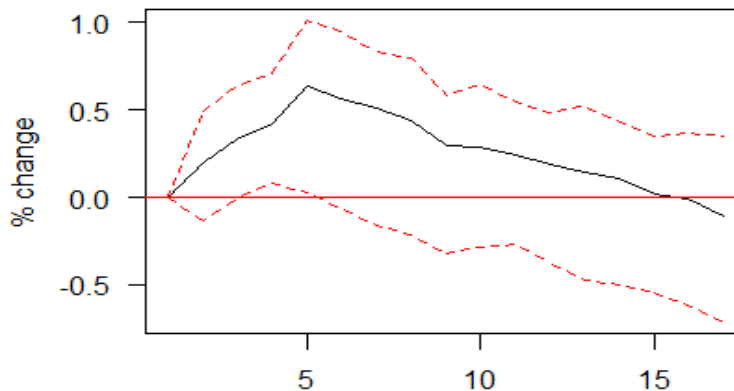
Results: Impulse responses

Model 3: "Inflows and real exchange rate dynamics" (Iceland and Ireland)

FDI to GDP (%) shock

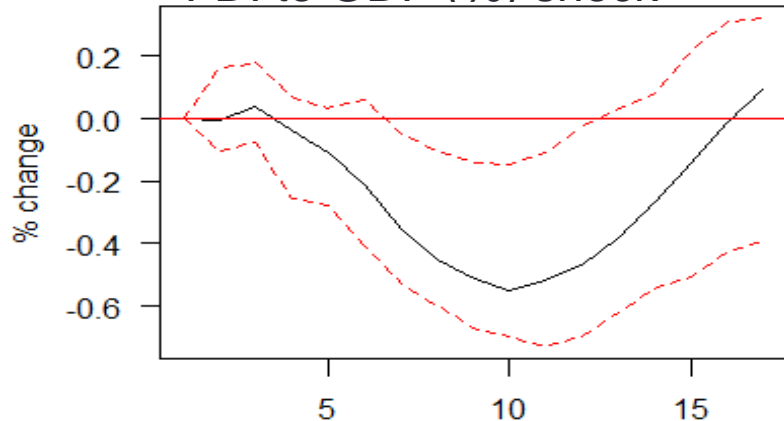


PFI to GDP (%) Shock

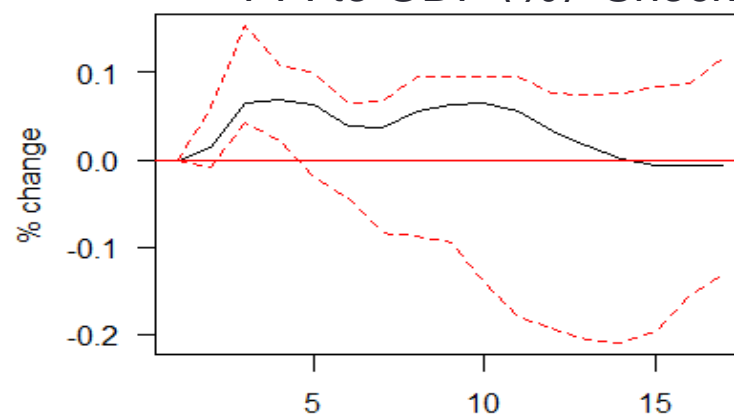


Accumulated response from real exchange rate in Iceland

FDI to GDP (%) shock



PFI to GDP (%) Shock

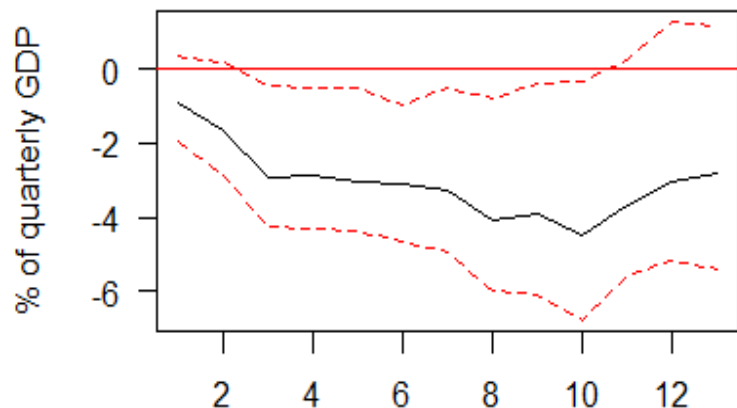


Accumulated response from real exchange rate in Ireland

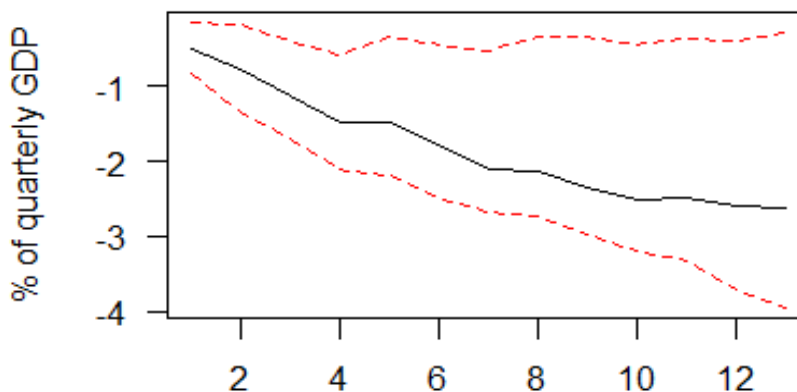
Results: Impulse responses

Model 4: "Adjustment to the crisis" (Iceland and Ireland)

Response: CAB in Iceland

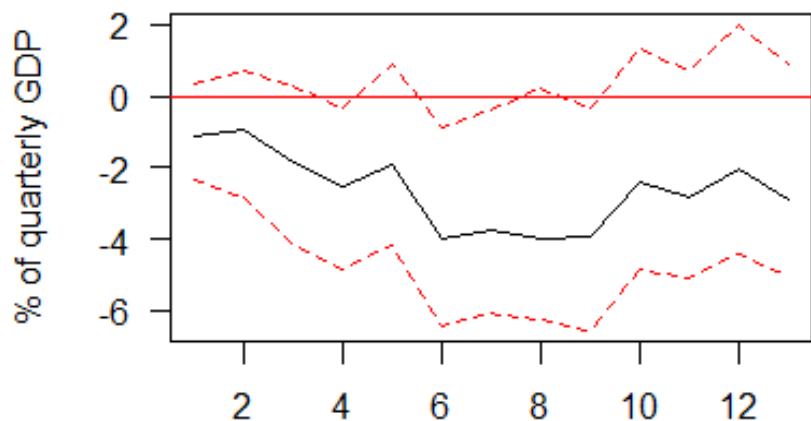


Response: CAB in Ireland

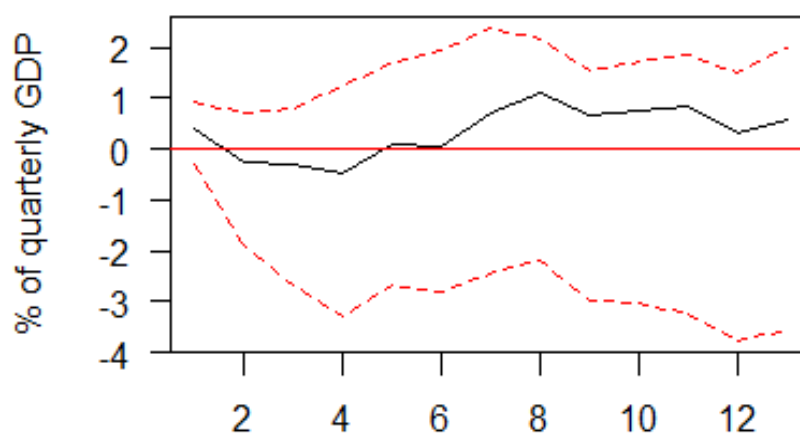


Shock: Domestic Demand (5% points \uparrow)

Response: CAB in Iceland



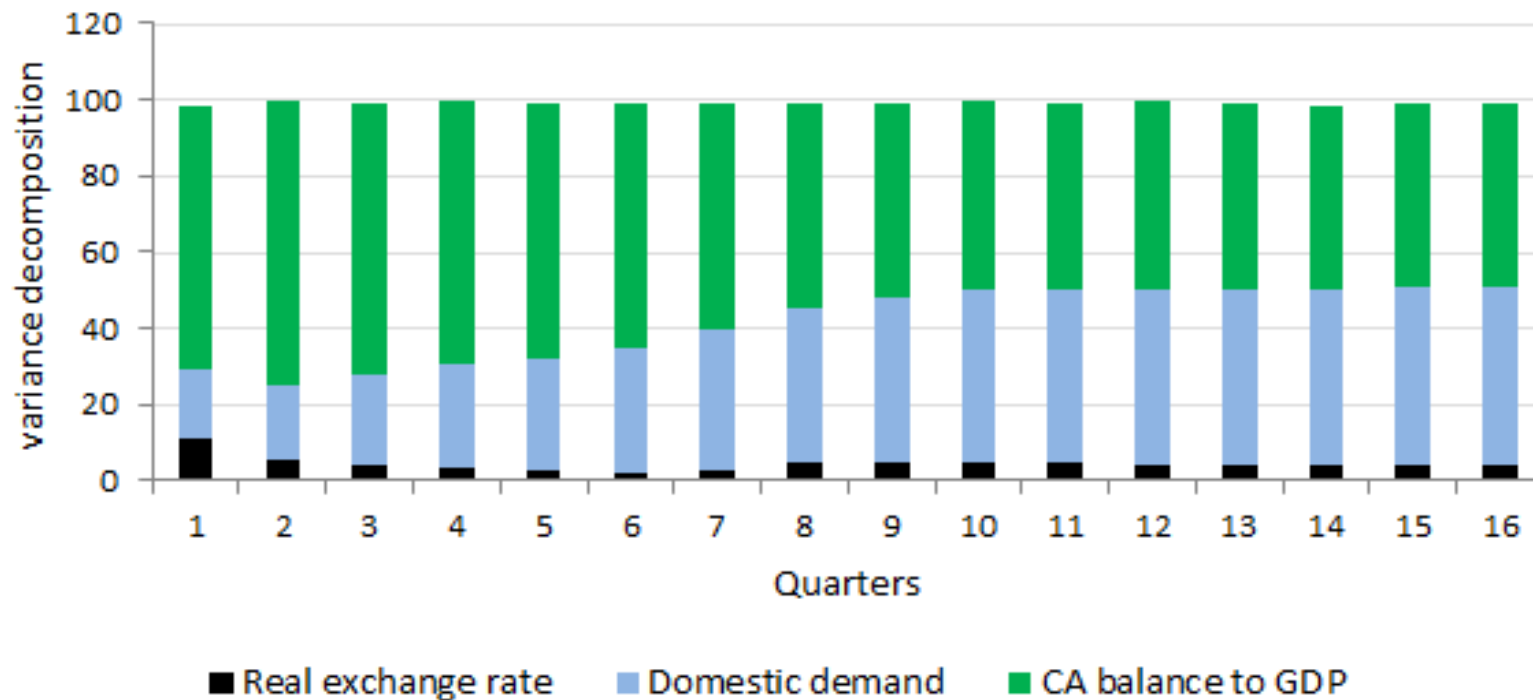
Response: CAB in Ireland



Shock: Real exchange rate appreciation (10% points)

Results: FEVD of SVAR (Model 4)

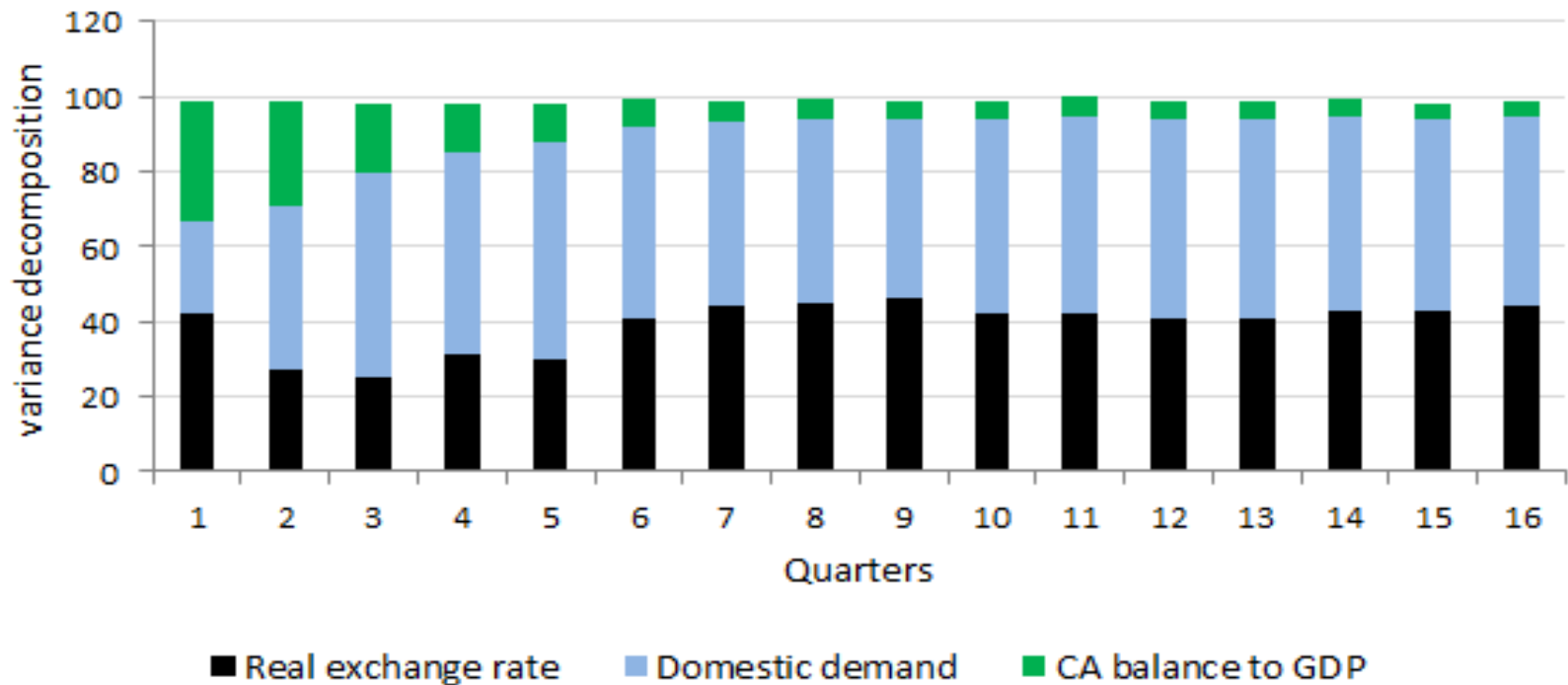
“Adjustment to the crisis” (Ireland)



Forecast error variance decomposition (FEVD) of CAB in Ireland

FEVD of SVAR (Model 4)

“Adjustment to the crisis” (Iceland)



Forecast error variance decomposition (FEVD) of CAB in Iceland

Conclusion

- Large financial inflows make economies vulnerable to external conditions and create large exchange rate misalignments.
- It is important to analyse inflows from a demand (recipient) and supply (investors) perspective.
- Sovereign regimes can adjust through external devaluation (Iceland). Recovery in a currency union (Ireland) is more painful due to internal devaluation and has failed on practical grounds so far. Other contrasting examples are Poland and Greece.

“THANK YOU”