The Relation between Monetary Policy and Financial-Stability Policy

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Some general questions

- What is the relation between monetary policy and financial-stability policy?
- How can they be distinguished?
- Should they have the same or different goals?
- Should they be conducted separately or coordinately?
- Should they be conducted by the same or different authorities?
- What if monetary policy would pose a threat to financial stability?
- Should monetary policy ever “lean against the wind” (of credit booms and asset prices)?
- The answers to these questions continue to be debated

The questions examined here and short answers

- How can different economic policies be distinguished?
  By their goals, instrument, and authorities
- How can monetary and financial-stability policies be distinguished? They are very different, and mostly orthogonal
- Should monetary policy have a third goal, financial stability? **No!**
- Should monetary and financial-stability policies be conducted separately or coordinately? Normally separately
- Should they be conducted by the same or different authorities?
  Separate decision-making bodies essential
- What if monetary policy would pose a threat to financial stability?
  BoE model: Financial-stability authority judges and warns
- Should monetary policy ever "lean against the wind" (LAW)?
  Only if supported by convincing cost-benefit analysis.
  Remember the Swedish LAW 2010-2013 and turnaround 2014.
  Systematic LAW implies lower average inflation and interest rate!

How can different economic polices be distinguished?

- Goals, instruments, responsible authorities
- Example: Fiscal policy and monetary policy
- Different goals, different instruments, different authorities
- Considerable interaction
  - Fiscal policy affects inflation and real activity
  - Monetary policy affects government revenues and expenditures
- Conducted separately, not coordinately: Nash equilibrium
- Is the relation between monetary and financial-stability policies any different?

How can monetary and financial-stability policies be distinguished? Monetary policy

- Goals (simple)
  - Flexible inflation targeting: Price stability and full employment
  - Stabilize inflation around inflation target and unemployment around its long-run sustainable rate
- Instruments
  - Normal times: Policy rate and communication (forecasts, forward guidance, …)
  - Crisis times, crisis management: Unconventional measures, balance sheet policies (QE), FX policy (interventions, currency floors) …
- Authority: Central bank

How can monetary and financial-stability policies be distinguished? Financial-stability policy

- Goal (complex)
  - **Financial stability**
  - Definition: Financial system can fulfill its three main functions (submitting payments, transforming saving into financing, and allowing risk management/sharing), with sufficient **resilience** to disturbances that threaten those functions
  - **Resilience** crucial
  - Also secondary goal: "Support government policies"
  - Not the stability of the graveyard (Tucker: Political decision on standard of resilience)
- Instruments
  - Normal times, crisis prevention: Supervision, regulation, communication, stress tests …
  - Crisis times, crisis management: …
- Authority(ies)
  - Varies across countries: FSA(s), CB, Treasury, …
- Monetary and financial-stability policies are very different

Should monetary policy have a third goal, financial stability? 1

- Answer: No
- Economic policies should only have goals that they can achieve
- Monetary policy can achieve price stability and full employment (thus suitable goals)
- Monetary policy cannot achieve financial stability (thus not suitable goal)
- There is no way monetary policy can achieve sufficient resilience (more capital, less funding risk,…) of the financial system
- No systematic effects of MP on financial stability: Signs often indeterminate, effects normally small
- Leaning against the wind (LAW)?

Should monetary policy have a third goal, financial stability? 2

- Best theoretical argument for LAW (Jeremy Stein, 2013):

  "[W]hile monetary policy may not be quite the right tool for the job, it has one important advantage relative to supervision and regulation – namely that it gets in all of the cracks"
- But empirical estimates indicates that a modest policy-rate increase will barely cover the bottom of those cracks
- To fill the cracks, the policy rate would have to be increased so much that it might kill the economy
- Qualitative results are not enough;
  quantitative results are needed, numbers!

Should monetary policy have a third goal, financial stability? 3

- Car metaphor 1 (Bill White)
  - Currently MP on accelerator; FSP on brake: Not good
  - Policies are close substitutes
- Car metaphor 2
  - MP keeps steady speed: Uphill accelerator, downhill brake
  - FSP keeps airbags and safety belts on
  - Policies are mostly orthogonal
- MP tightens/eases financial conditions through policy-rate path to achieve price stability and full employment
  - This has no systematic effect on financial stability (sometimes positive, sometimes negative, usually small or zero, depending on circumstances)
- FSP affects resilience through capital and funding regulation
  - This has no systematic effects on financial conditions (may sometimes tighten, sometimes ease, usually small or zero, depending on circumstances)
- Policies mostly orthogonal

Should monetary policy and financial-stability policies be conducted separately or coordinately?

- In normal times, crisis prevention: Conducted separately, also when conducted by the same authority
  - But each policy should be fully informed about the conduct and impact of the other policy and take that into account
  - Nash equilibrium rather than coordinated equilibrium/joint optimization
  - MP much more effective in achieving price and real stability
  - FSP much more effective in achieving financial stability
- In crisis times, crisis prevention: Full cooperation and coordination of policies by FSA, CB, MoF, bank-resolution authority, …

Should monetary policy and financial-stability policies be conducted by the same authority or different ones?

- Separate decision-making bodies w/ separate goals and instruments
- Accountability and efficiency justify all financial-stability instruments in one authority
- Two clean models that should work well: UK and Sweden
- UK model
  - BoE: Two committees, MPC and FPC (Kohn, Tucker)
- Swedish model
  - FSA: Financial stability, all macro- and microprudential instruments
  - Riksbank: Monetary policy, no financial-stability instruments (except liquidity support in crises, but not monopoly on that)

Swedish model

- Gov't Aug 2013: New strengthened framework for financial stability
- Swedish FSA
  - Main responsibility for financial stability
  - All macro- and microprudential instruments
  - Boundary between macro- and microprudential policy unclear, especially in Sweden (oligopoly of 4 banks dominate financial sector)
  - Efficiency and accountability: Micro- and macropru together, in one authority
  - But legal authority remain to be fixed
- Riksbank
  - No macroprudential instruments
- Financial Stability Council
  - Members: MoF (chair), FSA, NDO (bank resolution authority), RB
  - Forum for discussion and exchange of information, not decisions
  - Published minutes, reports from workgroups
  - FSC will lead crisis management in crisis

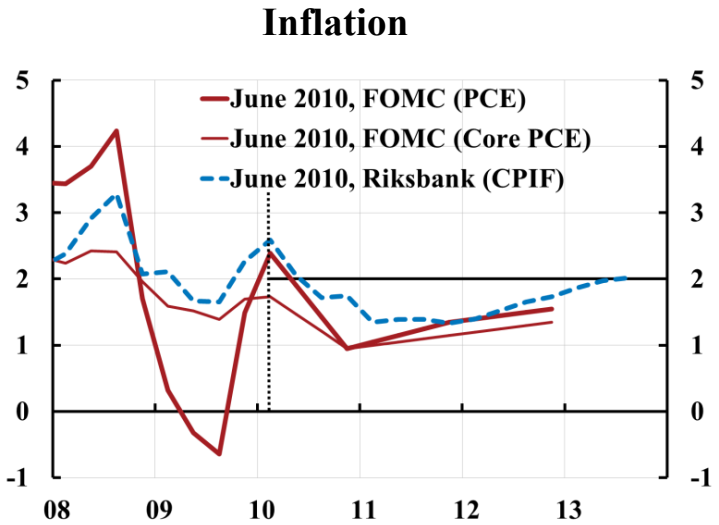
What if monetary policy would pose a threat to financial stability?

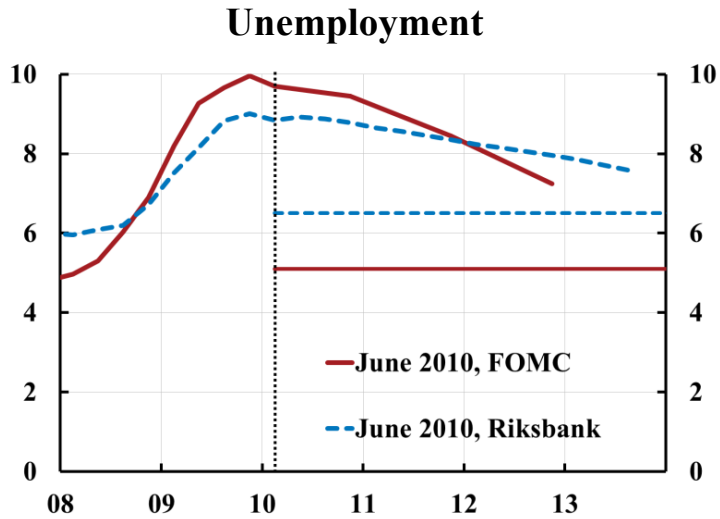
- BoE model, Aug 2013: Forward-guidance promise
- 3rd knockout: If the FPC would judge that monetary policy poses a significant threat to financial stability that it cannot contain with its instruments
- It should be the FS authority, not the MP one, to make the judgement and warn the MP authority
- The MP authority may then adjust monetary policy or not
- Effectively “comply or explain”
- But preserves the independence of monetary policy

Leaning against the wind (LAW)

- Policy strongly promoted by BIS
- Followed by Norges Bank and RBA
- Previously followed by the Riksbank, but now dramatically abandoned

Fed and Riksbank forecasts June 2010

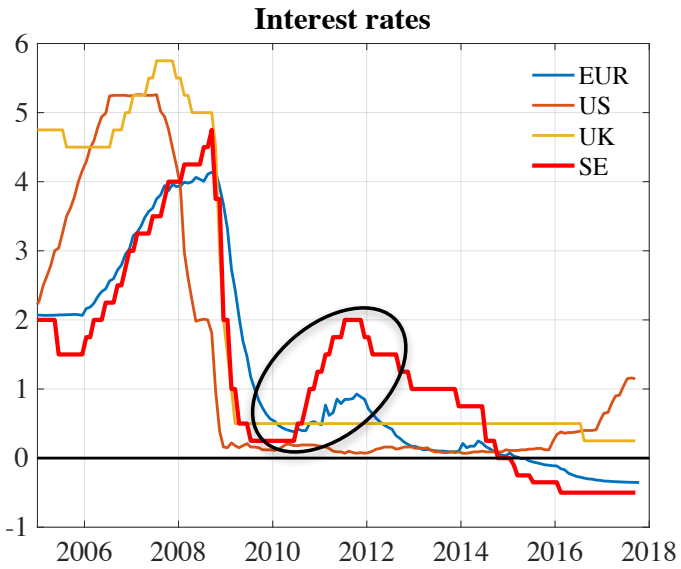


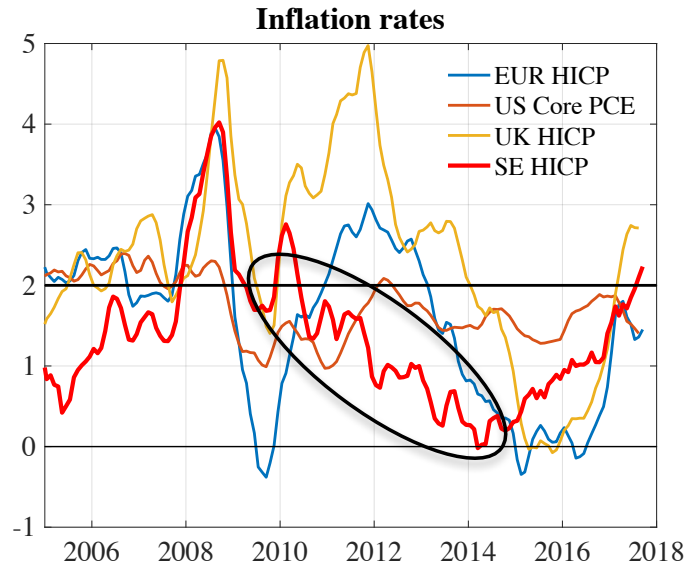


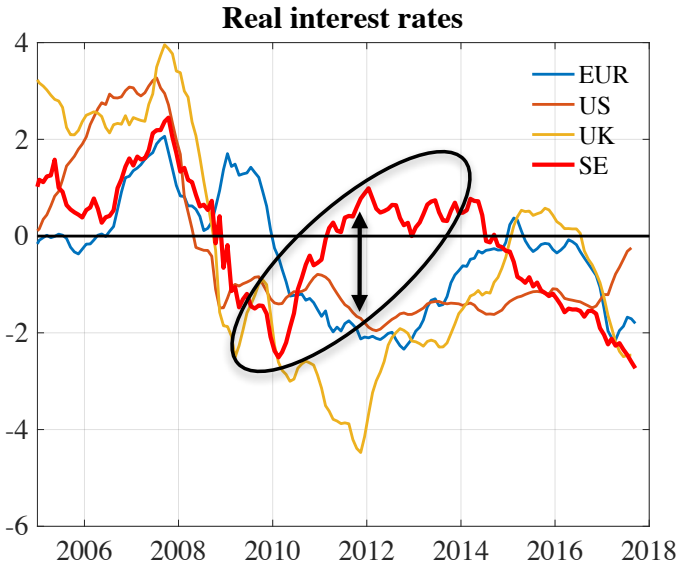
- Riksbank and Fed forecasts quite similar
- Policies very different
  - Fed: Continue to keep policy rate between 0 and 0.25%, forward guidance, prepare QE2
  - Riksbank: Start raising the policy rate from 0.25% to 2% in July 2011
  - What if the Fed had followed the Riksbank example?

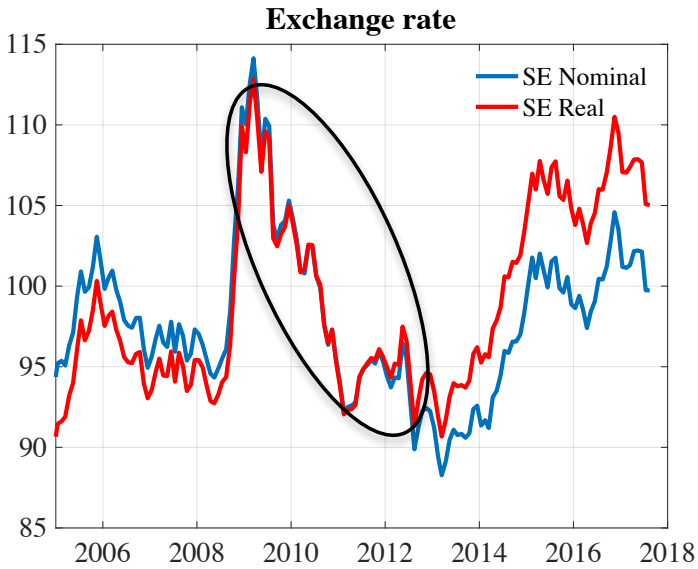
Source: Svensson, Lars E.O. (2011), "Practical Monetary Policy: Examples from Sweden and the United," *Brookings Papers on Economic Activity*, Fall 2011, 289-332.

The Swedish experience: LAW

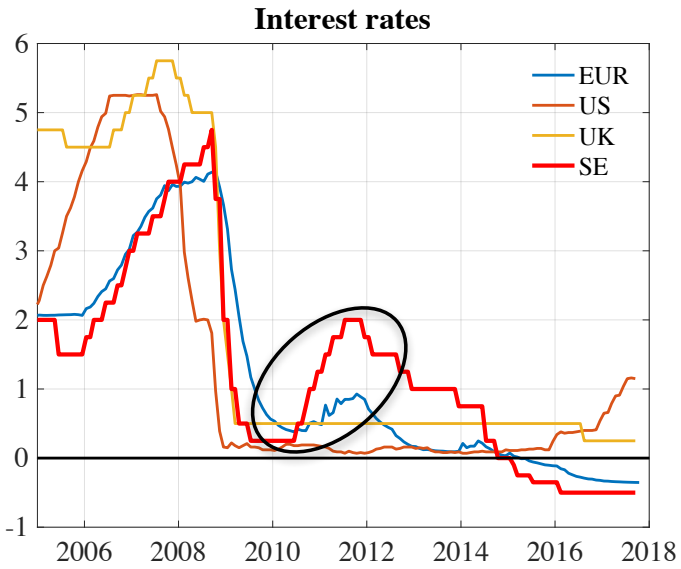


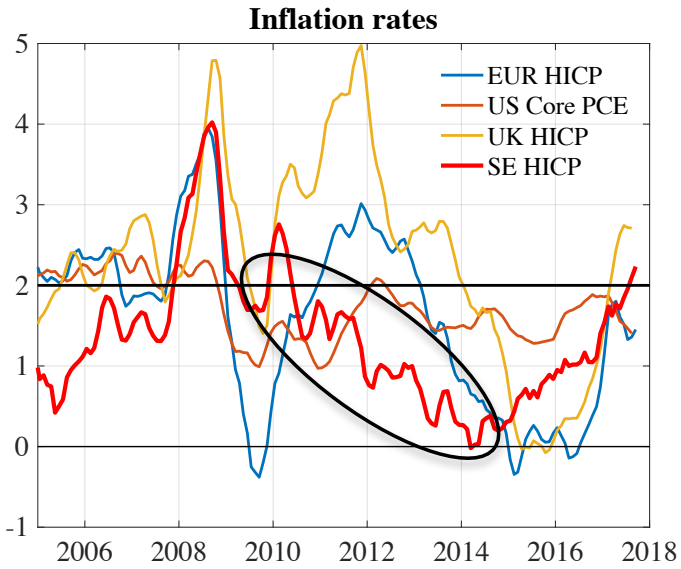


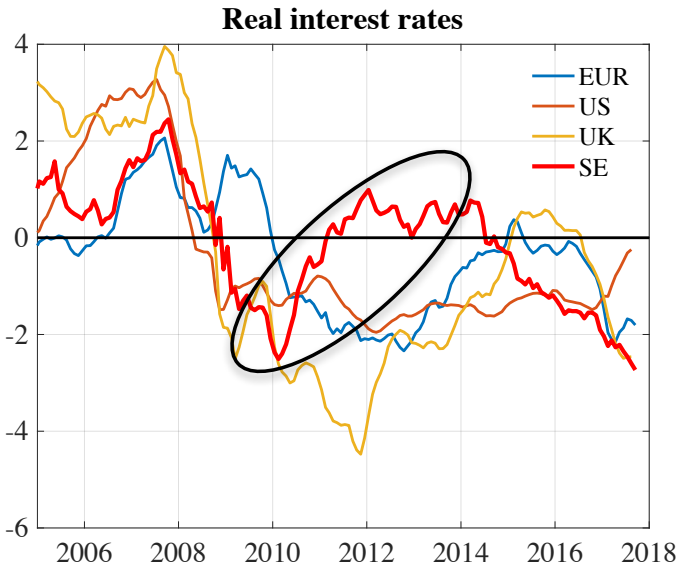


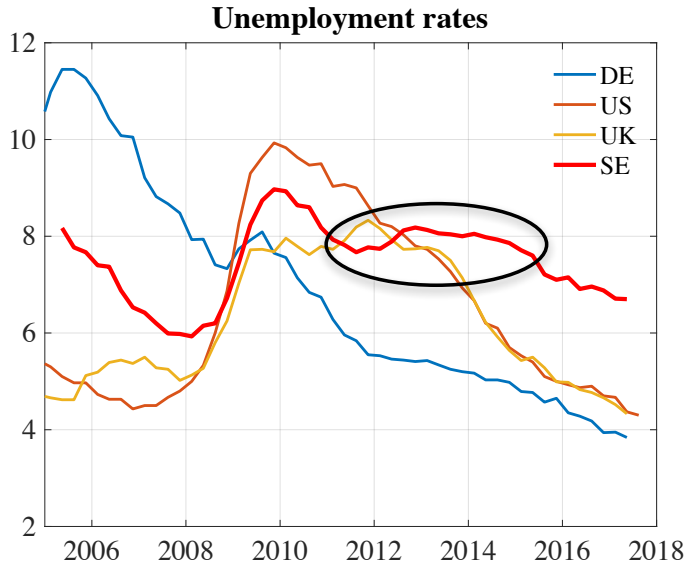


The Swedish experience: LAW

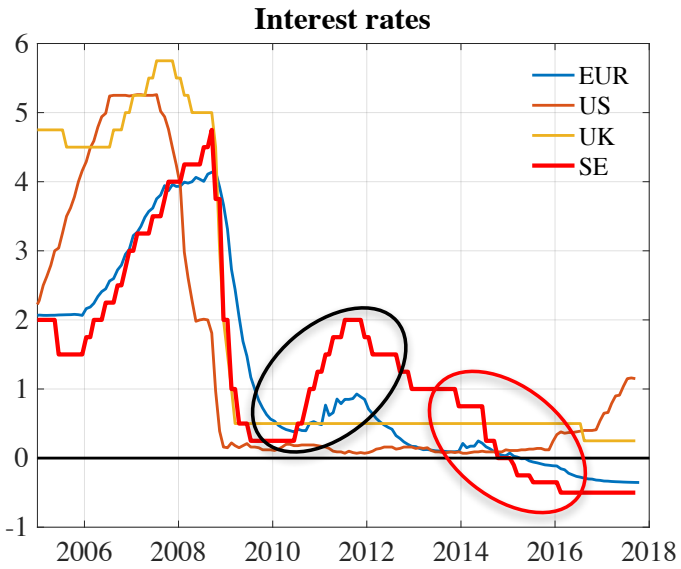


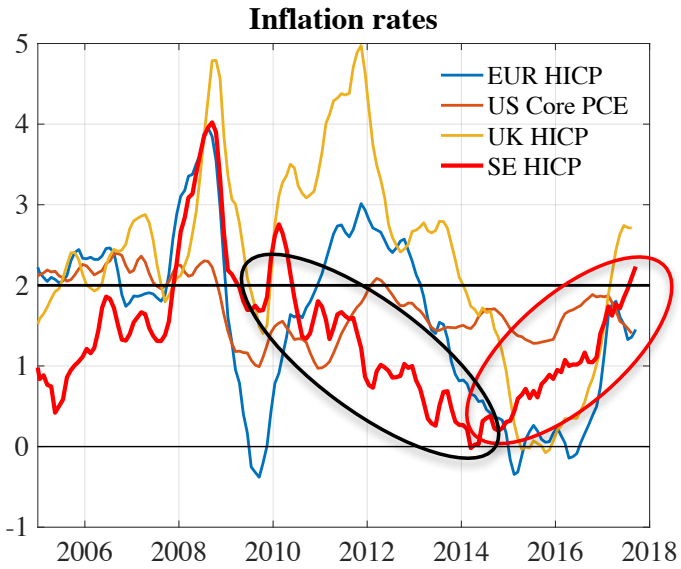


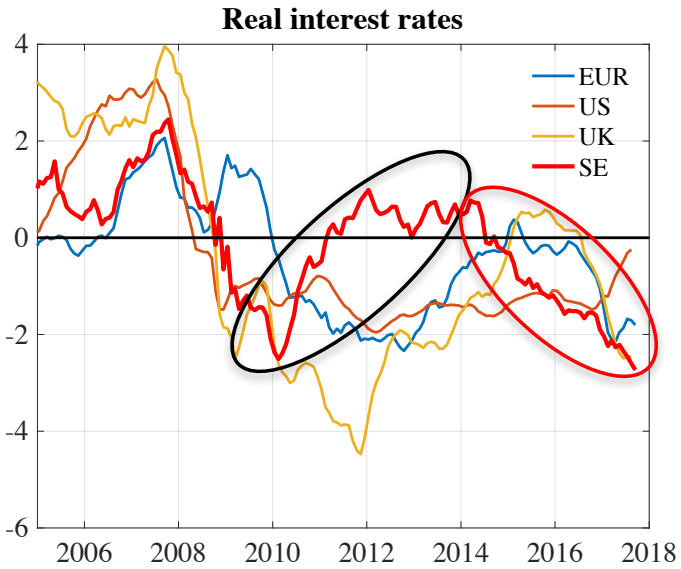


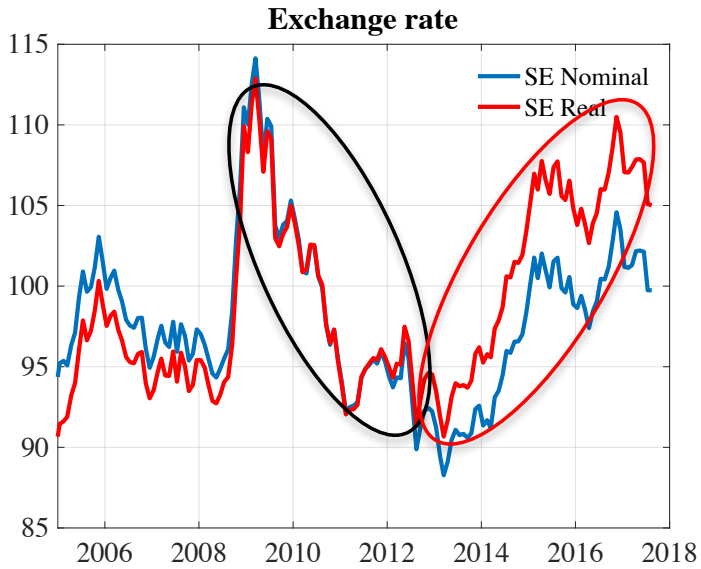


The Swedish experience: Turnaround



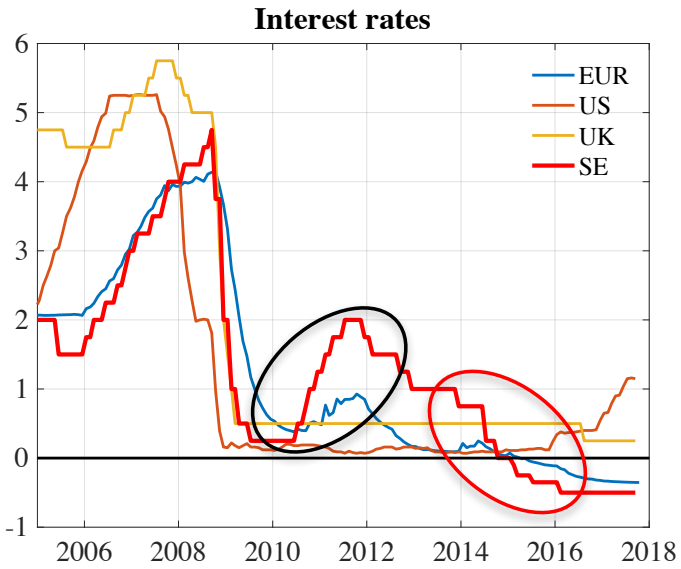


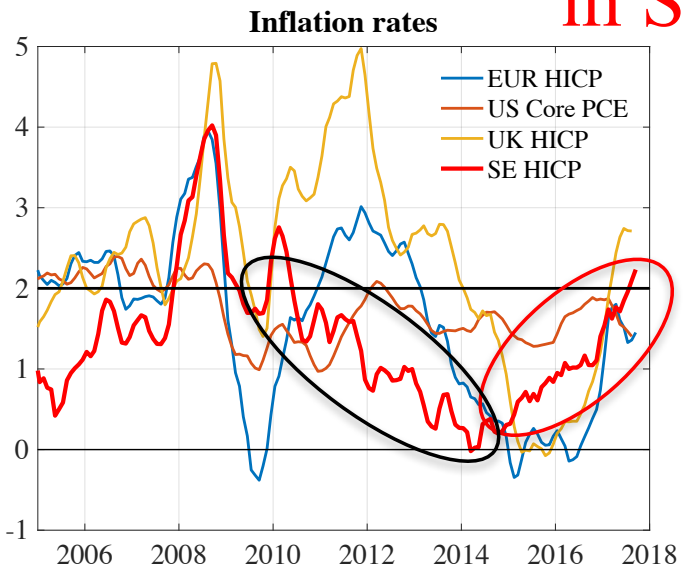


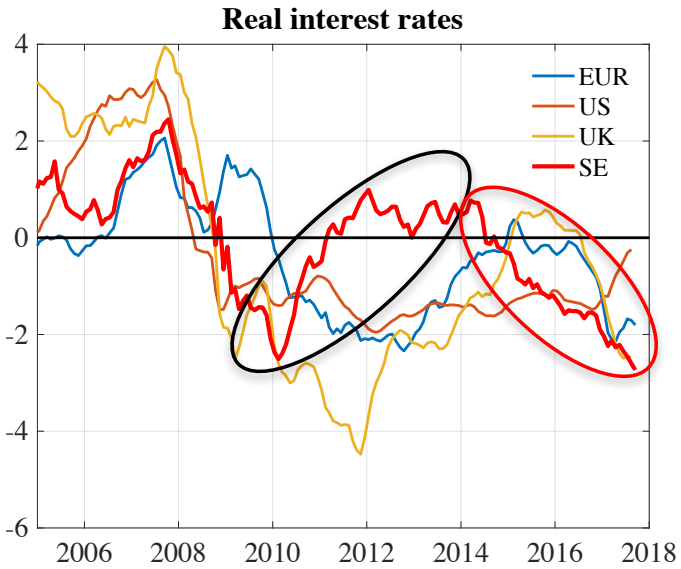


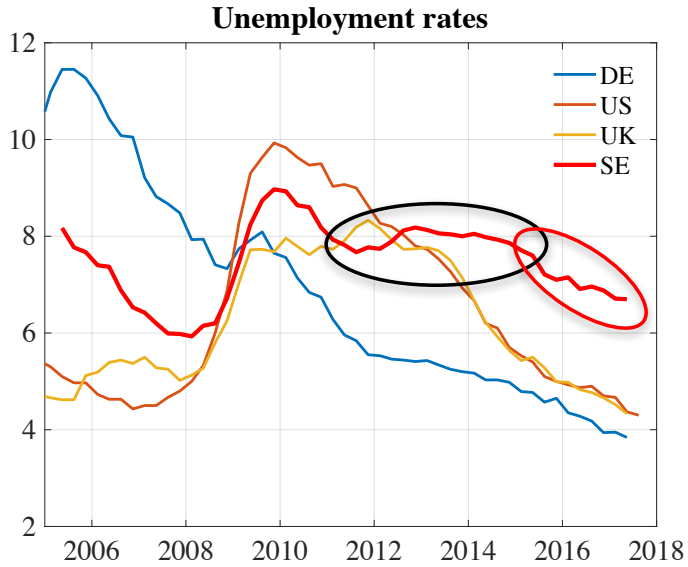
The Swedish experience: Turnaround.

MP works in Sweden!









Leaning against the wind (LAW)?

- Widespread skepticism against LAW beyond BIS, Norges Bank, RBA
- Bernanke; Draghi; Yellen; Evans; Williams; IMF 2015; FOMC 2016; Allen, Bean, De Gregorio 2016, "Independent Review of BIS Research"; Sveriges Riksbank 2017
- But the debate seems to continue

Widespread skepticism against LAW

- **Bernanke (2015)**: "As academics (and former academics) like to say, more research on this issue is needed. But the early returns don't favor the idea that central banks should significantly change their rate-setting policies to mitigate risks to financial stability."
- **Evans (2014)**: "Indeed, any decision to instead rely on more-restrictive interest rate policies to achieve financial stability at the expense of poorer macroeconomic outcomes must pass a cost-benefit test. And such a test would have to clearly illustrate that the adverse economic outcomes from more-restrictive interest rate policies would be better and more acceptable to society than the outcomes that can be achieved by using enhanced supervisory tools alone to address financial stability risks. I have yet to see this argued convincingly."
- **Williams (2015)**: "[M]onetary policy is poorly suited for dealing with financial stability, even as a last resort."
- **IMF (2015)**, "The question is whether monetary policy should be altered to contain financial stability risks. ... Based on our current knowledge, and in present circumstances, the answer is generally no."
- **FOMC (2016)**: "Most participants judged that the benefits of using monetary policy to address threats to financial stability would typically be outweighed by the costs ... ; some also noted that the benefits are highly uncertain."
- **Allen, Bean, and De Gregorio (2016), "Independent Review of BIS Research"**: "so far the [BIS] argument for LAW seems to have cut relatively little ice with those actually responsible for setting monetary policy. In part, that is because of the lack of convincing evidence that the expected benefits outweigh the expected costs.
  …in some cases the research programme appeared somewhat one-eyed. [Of 9 projects on financial stability and monetary policy] the first and (to some extent) the fifth seem motivated primarily by a desire to overturn Svensson's [2017] conclusion on the inadvisability of LAW.
  …the research effort ... seems excessively focussed on building the case for LAW, rather than also investigating the scope for other policy actions to address financial stability risks." [Reference updated.]
- **Sveriges Riksbank** (2017, p. 13): "It is not likely that small increases in the repo rate would have any tangible effects on household indebtedness. A large increase in the repo rate could certainly slow down the buildup of debts but would also lead to higher unemployment, a much stronger krona and lower inflation. Other measures more specifically aimed at reducing the risks associated with household debt have less negative effects on the economy as a whole."

Cost-benefit analysis of LAW 1

- Costs of higher policy rate:
  A weaker economy: Lower inflation and higher unemployment
  - If no crisis: Non-crisis loss is larger (1st cost)
  - *If* crisis occurs: Crisis loss is larger if the economy is initially weaker because of LAW (2nd cost, the main cost)
  - 2nd cost disregarded in previous literature (including my own work)
- Possible benefits: Lower probability or magnitude of crisis
- Empirically, costs exceed benefits by a substantial margin
- Reason: Policy-rate effects on probability and magnitude too small
- Somewhat surprisingly, less effective financial-stability policy, with higher probability, larger magnitude, or longer duration of a crisis tends to increases costs more than benefits (increases 2nd cost)
- Robust result: Overturning it requires policy-rate effects 5-40 std. errors larger than benchmark empirical estimates

Svensson (2017), "Cost-Benefit Analysis of Leaning Against the Wind," *Journal of Monetary Economics* 90 (October)

Cost-benefit analysis of LAW 2

$$\mathrm{E}[L_t] = (1 - p_t)\mathrm{E}[L_t^n] + p_t\mathrm{E}[L_t^c]$$
$$= (1 - p_t)\mathrm{E}(u_t^n - u_t^*)^2 + p_t\mathrm{E}(u_t^n + \Delta u_t - u_t^*)^2$$

u_t^c

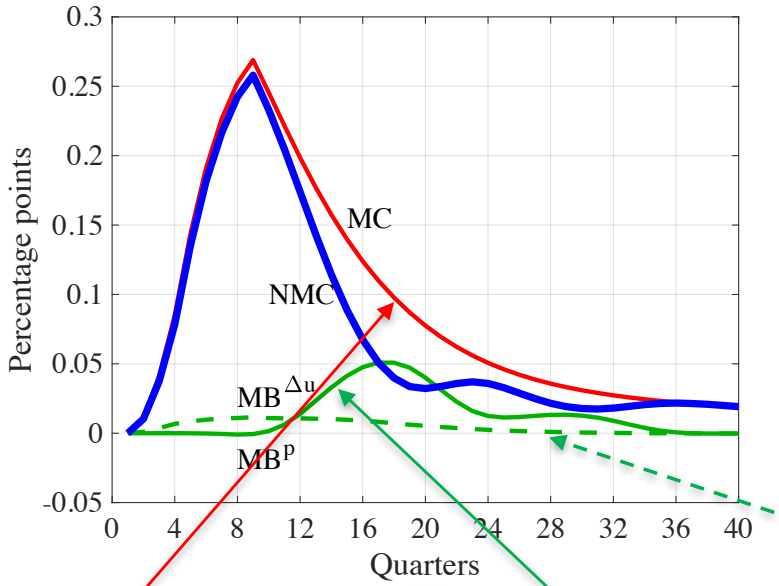
p_t prob. of crisis; L_t^n non-crisis loss; L_t^c crisis loss (indirect loss functions, flexible inflation targeting); u_t^n non-crisis unempl.; u_t^c crisis unempl.; u_t^* optimal unempl. for $p_t = 0$ (optimal flexible infl. targeting); Δu_t crisis unempl. increase (magnitude of crisis) (net of "cleaning");

- LAW: $di > 0$ at $u_t^n = u_t^*$ (optimal FIT for $p_t = 0$):

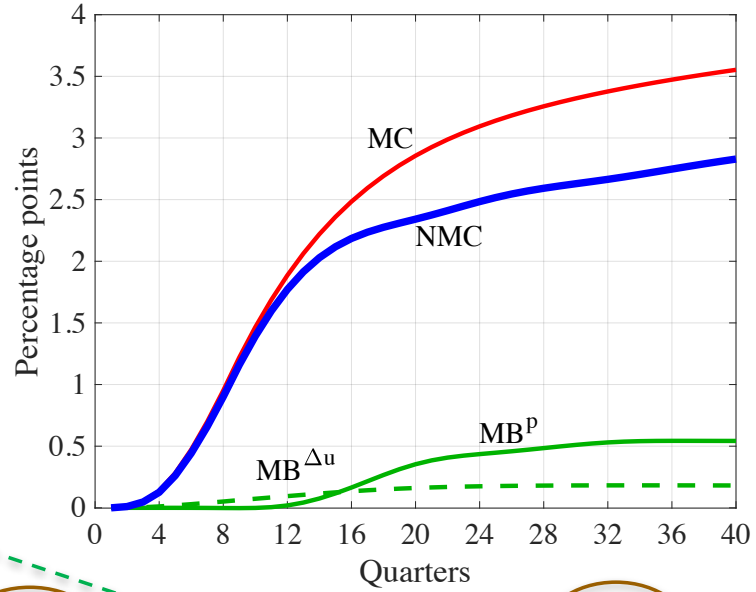
$$\frac{d}{di}\mathrm{E}[L_t]_{|u_t^n = u_t^*} = 2p_t\mathrm{E}[\Delta u_t]\frac{du_t^n}{di} \quad [2^{\text{nd}} \text{ cost: } \frac{dL_t^c}{du_t^n} > 0]$$
$$- \mathrm{E}[(\Delta u_t)^2]\left(-\frac{dp_t}{di}\right) - 2p_t\mathrm{E}[\Delta u_t]\left(-\frac{d\Delta u_t}{di}\right)$$
$$\equiv \mathrm{MC}_t - \mathrm{MB}_t^p - \mathrm{MB}_t^{\Delta u}$$

Svensson (2017), "Cost-Benefit Analysis of Leaning Against the Wind," *Journal of Monetary Economics* 90 (October)

Cost-benefit analysis of LAW 3

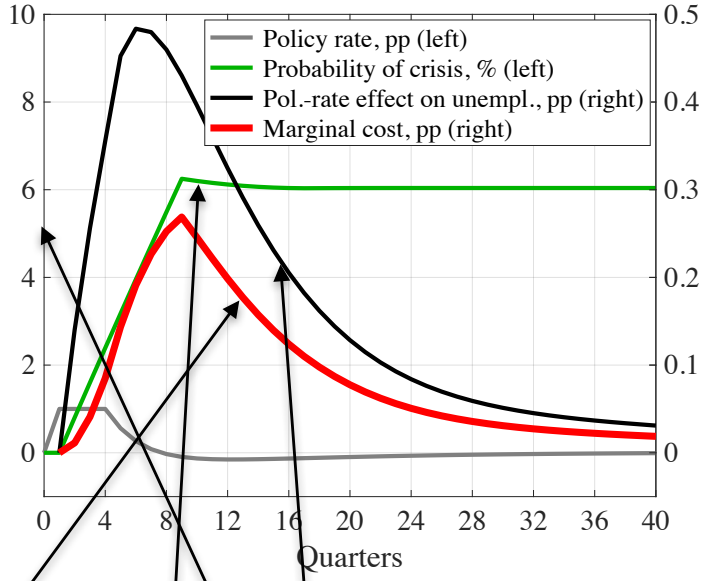


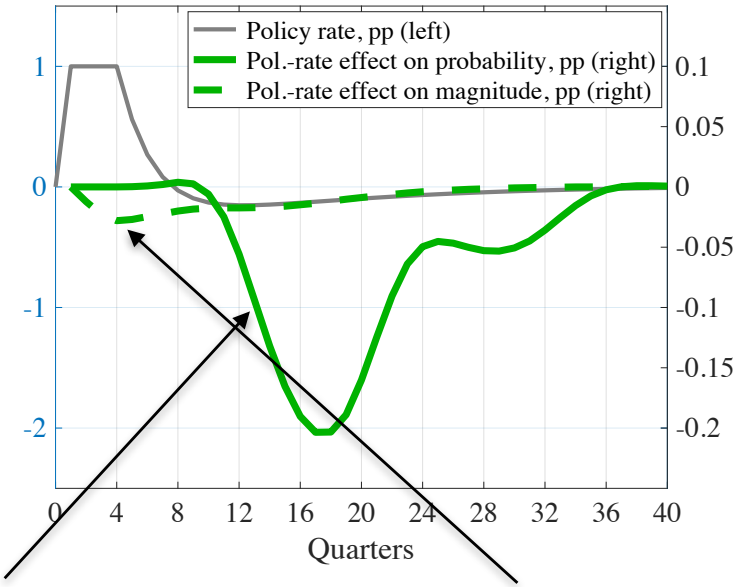
Cumulative MC, MB, NMC



- $\mathrm{MC}_t = 2p_t\Delta u\frac{du_t}{di}$; $\mathrm{MB}_t^p = (\Delta u)^2(-\frac{dp_t}{di})$; $\mathrm{MB}_t^{\Delta u} = 2p_t\Delta u(-\frac{d\Delta u_t}{di})$
- 5 inputs: Probability of crises (p_t); magnitude of crises (Δu); policy-rate effects on unemployment (du_t/di), probability (dp_t/di), and magnitude ($d\Delta u_t/di$)
- Few assumptions, very simple, transparent (preferred to complicated analysis)
- Easy to redo
- Framework for comparing new and old results

Cost-benefit analysis of LAW 4 Components MC, MB

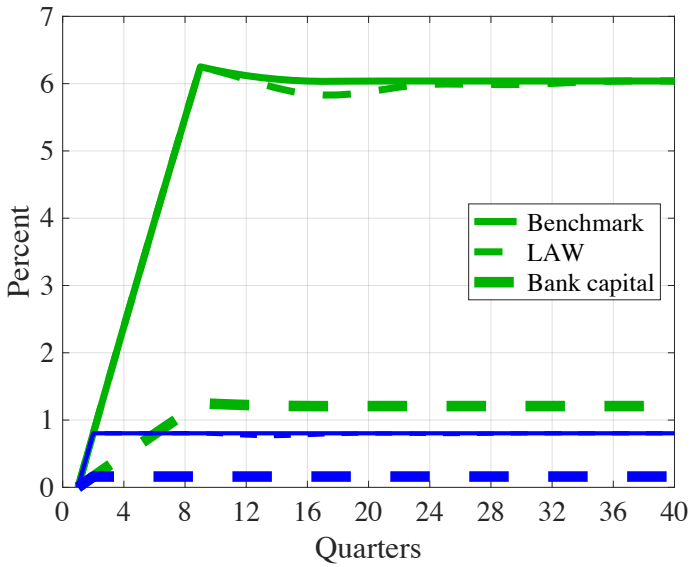




- $\mathrm{MC}_t = 2p_t\Delta u\frac{du_t}{di}$; $\mathrm{MB}_t^p = (\Delta u)^2(-\frac{dp_t}{di})$; $\mathrm{MB}_t^{\Delta u} = 2p_t\Delta u(-\frac{d\Delta u_t}{di})$
- Representative benchmark estimates:
  Policy-rate effects on
  unemployment (IMF 2015, Riksbank),
  probability (IMF 2015, Schularick and Taylor 2012; Riksbank 2014)
  magnitude (Flodén 2014; Jorda, Schularick, and Taylor 2013; Riksbank 2014)

For financial stability, no choice but to use financial-stability policy

- Probability of crisis and crisis start (solid)
- Policy-rate effects (dashed)
- Dagher, Dell'Ariccia, Laeven, Ratnovski, Tong (2016), "Benefits and Costs of Bank Capital," IMF SDN/16/04
- 20% bank capital relative to risk-weighted assets might have avoided 80% of historical banking crises in OECD since 1970 (DDLRT, 2016, fig. 7)
- Effect of capital on probability of crises: Shift from solid to thick dashed lines



Systematic LAW?

- Implies lower average inflation and interest rates, larger risk for ELB
- Policy rule, no LAW: $i_t = r + \pi_t + \gamma(\pi_t - \pi^*)$
- Take (unconditional) mean: $\mathrm{E}[i_t] = r + \mathrm{E}[\pi_t] + \gamma(\mathrm{E}[\pi_t] - \pi^*)$ (1)
- Assume avg Fisher eqn: $\mathrm{E}[i_t] = r + \mathrm{E}[\pi_t]$ (2)
- By (1) and (2): $\mathrm{E}[\pi_t] = \pi^*, \quad \mathrm{E}[i_t] = r + \pi^*$
- LAW: $i_t = r + \pi_t + \gamma(\pi_t - \pi^*) + \alpha_t, \quad \mathrm{E}[\alpha_t] = \alpha > 0$
- Take mean: $\mathrm{E}[i_t] = r + \mathrm{E}[\pi_t] + \gamma(\mathrm{E}[\pi_t] - \pi^*) + \alpha$ (3)
- By (2) and (3) : $\mathrm{E}[\pi_t] = \pi^{**} \equiv \pi^* - \alpha/\gamma < \pi^*$

  $\mathrm{E}[i_t] = r + \pi^{**} < r + \pi^*$
- Lower average inflation and policy rate
- Larger risk for ELB
- Good?

Summing up

- **Economic policies should only have goals that they can achieve**
- Monetary policy should not have financial stability as a goal
- Monetary and financial-stability policies
  - Have different goals, instruments, effects, and (often) authorities
  - Are very different, mostly orthogonal
  - Should normally be conducted separately, by separate decision-making bodies (also when conducted by the same authority), but each policy under full information about the conduct of the other policy
  - The UK and Sweden provide two clean systems, with clear separation and accountability
- What if monetary policy would pose a threat to financial stability?
  - FS authority judges and warns, MP authority decides whether to act
- Should monetary policy ever "lean against the wind" (LAW)?
  - Only if supported by convincing cost-benefit analysis
  - Remember the Swedish LAW 2010-2013 and turnaround 2014
  - The cost-benefit framework presented is simple, transparent, and easily applied
  - Systematic LAW may lower average inflation and interest rate