



The Rationale for Macroprudential Policy

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Background papers:

1. “Monetary Policy and Macroprudential Policy: Different and Separate,” *Canadian Economic Journal*, forthcoming. [Link](#)
2. “Cost-Benefit Analysis of Leaning Against the Wind : Are Costs Larger Also with Less Effective Macroprudential Policy?” IMF Working Paper WP/16/3. [Link](#)

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Basic questions

- What is the rationale for macroprudential policy?
 - Is macroprudential policy a separate economic policy, distinct from other economic policies?
 - If so, is it really necessary? Do we really need it?
 - If so, why?



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Basic questions **and my short answers**

- What is the rationale for macroprudential policy?
 - Is macroprudential policy a separate economic policy, distinct from other economic policies? **Yes**
 - If so, is it really necessary? Do we really need it? **Yes**
 - If so, why? **Because it is necessary to achieve and maintain financial stability**



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Further questions 1

- How is macroprudential policy different from, and what is the relation to monetary policy?
- How is macroprudential policy different from, and what is the relation to microprudential policy?



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Further questions 2

- In general, how can different economic policies be distinguished?
- Specifically, how can macroprudential and monetary policies be distinguished?
- Should monetary policy have an additional goal, financial stability?
- Should macroprudential and monetary policies be conducted separately or in a coordinated way?
- 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”?



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Further questions 2 **and my short answers**

- In general, how can different economic policies be distinguished?
Usually by listing goals, suitable instruments, and responsible authorities
- Specifically, how can macroprudential and monetary policies be distinguished?
Different goals, suitable instruments, and (sometimes) responsible authorities
- Should monetary policy have an additional goal, financial stability? **No**
- Should macroprudential and monetary policies be conducted separately or in a coordinated way?
Normally separately
- Should they be conducted by the same or different authorities?
Separate decision-making bodies are desirable
- What if monetary policy would pose a threat to financial stability?
BoE example: Macroprudential authority judges and warns; then monetary policy authority decides whether or not to adjust monetary policy
- Should monetary policy ever “lean against the wind”? **Only in the rare case that it could be supported by a thorough cost-benefit analysis**



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In general, how can different economic policies be distinguished?

- Goals, suitable 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 coordinated, Nash equilibrium
- Is the relation between monetary and macroprudential policies any different?



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How can monetary and macroprudential policies be distinguished? 1 Monetary policy

- Goals (flexible inflation targeting)
 - Price stability and real stability
 - 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: Unconventional measures, balance sheet policies (QE), FX policy (interventions, currency floors) ...
- Authority: Central bank



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How can monetary and macroprudential policies be distinguished? 2 Macroprudential policy

- Goal
 - **Financial stability**
 - Definition: Financial system fulfilling 3 main functions (submitting payments, transforming saving into financing, allowing risk management/sharing) w/ sufficient **resilience** to disturbances that threaten those functions
 - Stability of financial system more broadly, including stability of the credit market: Resilience not only of lenders but also of borrowers (households and non-financial firms (real estate))
 - Secondary objective (not to be forgotten)
 - Not the stability of the graveyard
 - “Support the economic policy of the government” (BoE FPC)
 - Tradeoff between stability/resilience and activity/growth (Tucker)



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How can monetary and macroprudential policies be distinguished? 3 Macroprudential policy

- Goal
 - Financial stability
- Instruments
 - Normal times (crisis prevention): Supervision, regulation (structural and cyclical; buffers, capital, liquidity, net stable funding, LTV, DTI, DSTI, ...), communication, stress tests, ...
 - Crisis times (crisis management): Everything available, cooperation with all relevant authorities, ...
- Authority(ies)
 - Varies across countries: FSA(s), CB, Treasury, ...



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How can monetary and macroprudential policies be distinguished? 4

- Clearly quite different and distinct policies
- But how closely related?
- Should they really have different goals?



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Should monetary policy have an additional goal, financial stability? 1

- Answer: **No**
- **Economic policies should only have goals that they can achieve**
- Monetary policy can stabilize inflation around an inflation target and resource utilization around its estimated long-run rate (thus suitable goals)
- Monetary policy cannot achieve financial stability (thus not suitable goal)
- There is no way monetary policy can achieve sufficient resilience of the financial system
- Leaning against the wind? Existing empirical and theoretical evidence says costs normally much higher than benefits (more below)
- Effect of policy rate on probability and/or severity of crisis too small



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Should monetary policy have an additional goal, financial stability? 2

- Jeremy Stein (2013), best *theoretical* case:
“[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 [the interest rate] gets in all of the cracks.”
- But *empirical* evidence 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



Should monetary policy have an additional goal, financial stability? 3

- But there is interaction between the two policies!
- Macroprudential policy affects financial sector, lending, and housing demand and indirectly, **but not systematically**, inflation and real activity
- Monetary policy affects interest rates, inflation, activity, profits, debt service, balance sheets, leverage, and indirectly, **but not systematically**, financial stability
- Argument for conducting each under full information about the other, but not for sharing goals or explicit coordination
- As is the case for fiscal and monetary policies



Should monetary policy and macroprudential policies be conducted separately or in a coordinated way?

- 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 (thus not joint optimization)
 - Monetary policy much more effective in achieving price and real stability
 - Macroprudential policy much more effective in achieving financial stability (Bean 2014)
- In crisis times (crisis management): Full cooperation and coordination of policies by FSA, CB, MoF, bank-resolution and deposit-insurance authority(ies), ...



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Should monetary policy and macroprudential policies be conducted by the same authority or different ones?

- Separate decision-making bodies desirable, w/ separate goals and instruments
- Efficiency and accountability justify putting all macroprudential instruments in one authority/decision-making body
- Two clean models that should work well: UK (FPC and MPC within BoE) and Sweden (FSA and Riksbank)
- UK model well known
- Here Swedish model
- Macroprudential architecture much more complicated in the euro area and the US



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Swedish model

- Gov't Aug 2013: New strengthened framework for financial stability
- Swedish FSA (Finansinspektionen)
 - Main responsibility for financial stability
 - All micro- and (with some lag) macroprudential instruments
 - Boundary between macro- and microprudential policy unclear, especially in Sweden (oligopoly of 4 banks dominate financial sector)
 - Efficiency and accountability: Micro- and all macroprudential policy together, in one authority
 - But legal authority to use all instruments has been lagging
- Riksbank
 - No macroprudential instruments, only lending of last resort during crisis management
- Financial Stability Council
 - Members: MoF (chair), FSA, NDO (bank-resolution and deposit-insurance authority), RB
 - Forum for exchange of information and discussion, not decisions
 - Published minutes, reports from workgroups
 - The FSC will lead crisis management in crisis



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Finansinspektionen (the Swedish FSA), no “inaction bias” 1

- LTV cap 85% (October 2010)
- Risk-weight floor for mortgages 15% (May 2013)
- LCR-regulation (Basle 3, USD, EUR, total) (Jan 2014)
- Pillar II capital add-on 2% for 4 largest banks (Sep 2014)
- Risk-weight floor for mortgages 25% (Sep 2014)
- Systemic buffer 3% for 4 largest banks (Jan 2015)
- CCyB activated at level 1% (Sep 2015)
- Amortization requirements (Jun 2016)
- CCyB raised to 1.5% (June 2016)
- CCyB raised to 2.0% (March 2017)
- Current capital requirements for 4 largest banks 22% of RWA (17% CET1)



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Finansinspektionen (the Swedish FSA), no “inaction bias” 2

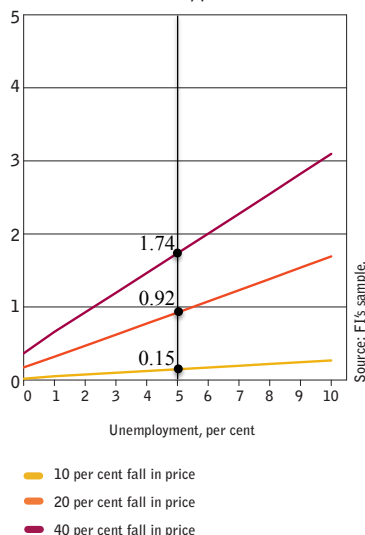
- Produces an **annual mortgage market report**, with **stress tests on individual data on new borrowers**, according to which
 - lending standards are high
 - households’ loss-absorbing and debt-service capacity is good and increasing over time
 - households’ resilience to disturbances in the form of mortgage rate increases, housing price falls, and income falls due to unemployment is good and increasing over time
- Best source for risk assessment of household debt
- As far as I can see, macroprudential tools and policy seem effective and good in Sweden in maintaining resilience
- But legal authority for new tools have been lagging



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Resilience 1: Stress tests on individual household data: Unemployment increase and housing-price fall

24. HOUSEHOLDS WITH DEFICIT AND LTV OVER 100 PER CENT, COMBINED UNEMPLOYMENT AND FALL IN HOUSE PRICES (Share of households, per cent)

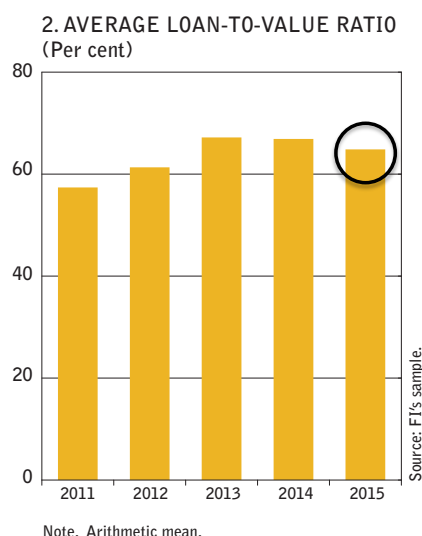


- Severe shocks to new borrowers
 - Unemployment increase from 0 to 5% (requires economy-wide increase of more than 5 pp)
 - Housing prices fall by 40%
- What fraction of new borrowers (1) have problems servicing their debt (a deficit in a “left to live on” analysis) and (2) are underwater?
- Answer: **1.7%**



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**Sizable average down payments of new borrowers:
Average LTV ratio of new borrowers 65%,
so average down payment is 35%**



Finansinspektionen (The Swedish FSA), "The Swedish Mortgage Market," April 2016



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Distinguish *central banks* and *monetary policy* 1

- Should *monetary policy* have financial stability as a goal? **No**
- Should *central banks* have financial-stability as a goal?
 - Depends on whether the central banks have suitable instruments
 - *Crisis management*: Yes, since CBs have lending of last resort (liquidity support)
 - *Crisis prevention*: Depends of whether CBs have suitable instruments
 - Riksbank example: No crisis-prevention instruments; should hence not have a financial-stability mandate for crisis prevention and normal times, only for crisis management



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Distinguish *central banks* and *monetary policy* 2

- Specific argument for CB financial-stability goal
 - Failure of crisis prevention may result in a crisis that will involve CB liquidity support and put CB capital at risk
 - Therefore, the CB should have influence over crisis prevention (liquidity regulation) and a general financial-stability mandate
- Not convincing
 - Failure of diplomacy may result in a war that will involve the military and put its resources at risk
 - Should therefore the military have influence over foreign policy?

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

- BoE model, Aug 2013, forward-guidance promise
- 3rd knockout: FPC would judge that monetary policy poses a significant threat to financial stability that the FPC cannot contain with its instruments
- It should be the macroprudential authority, not the monetary policy one, to make the judgment and to warn if necessary
- Monetary policy authority may then decide whether to adjust monetary policy or not
- Preserves independence of monetary policy, although some element of “comply or explain”

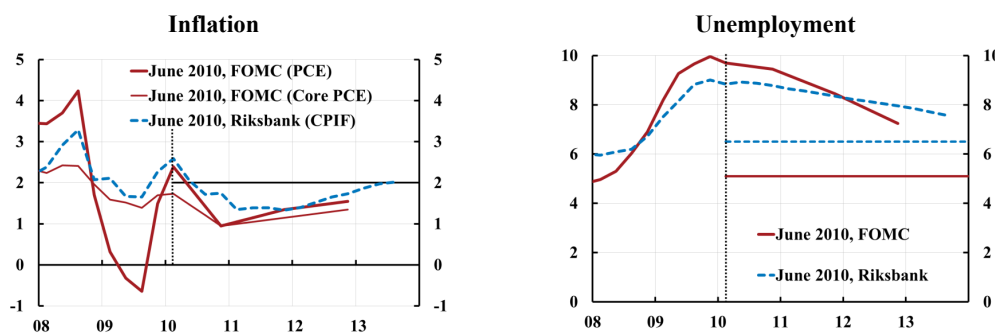
Should monetary policy ever lean against the wind for financial-stability purposes

- Leaning against the wind for financial stability purposes strongly promoted by BIS
- Skepticism against leaning elsewhere (Bernanke, Evans, Williams, Yellen, IMF 2015), but debate continues
- Sweden a case study: Quite aggressive leaning summer 2010-summer 2014, because of concerns about household debt
- Not supported by any analysis of policy-rate effect on household debt; estimates at the time indicated high costs and small effects on debt
- Outcome: Zero or negative inflation, very high unemployment, most likely higher real debt, negative policy rate
- Costs and benefits of Riksbank leaning?



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Background: Fed and Riksbank forecasts June 2010

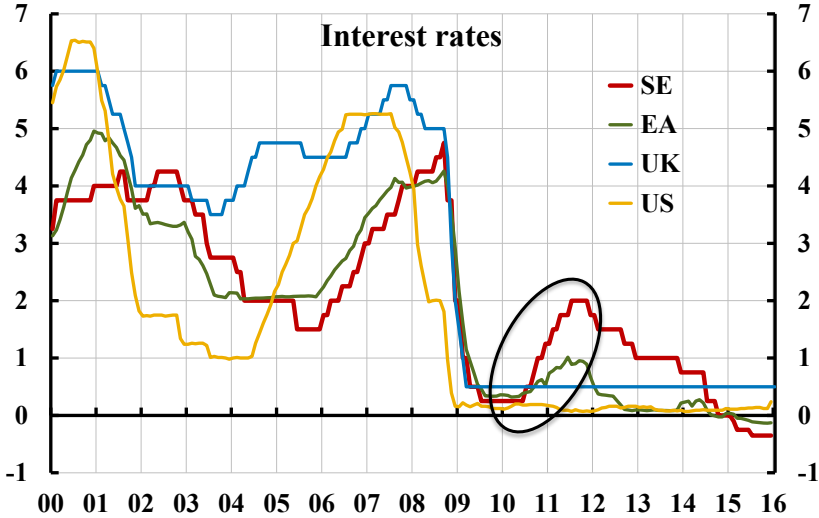


- Riksbank and Fed forecasts quite similar
- Policies very different
 - Fed: Continue to keep policy rate between 0 and 0.25%, forward guidance, prepare QE2
 - Riksbank: Start raising the policy rate from 0.25 to 2% in July 2011
 - Should the Fed have followed the Riksbank example?

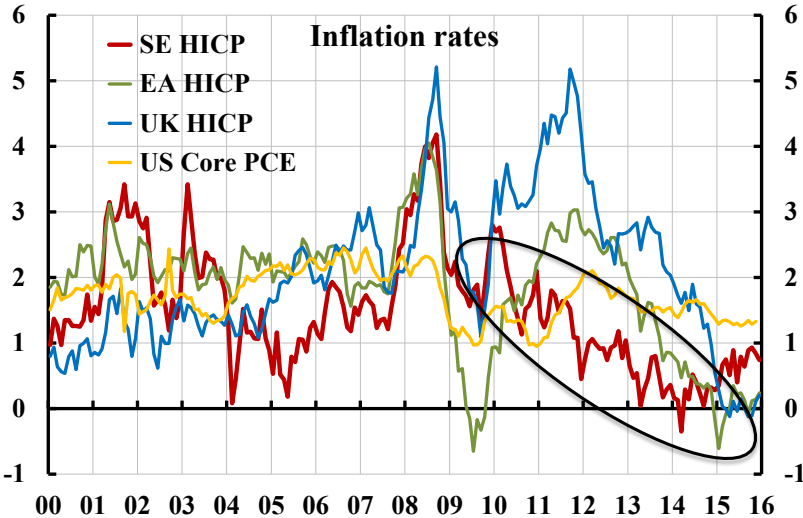


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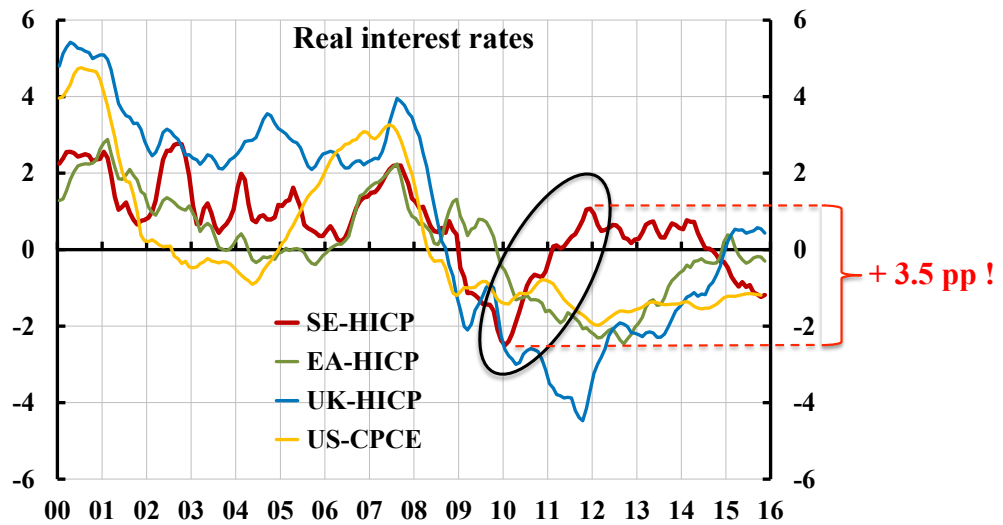
Background: Large and rapid increase in Riksbank policy rate 2010-2011



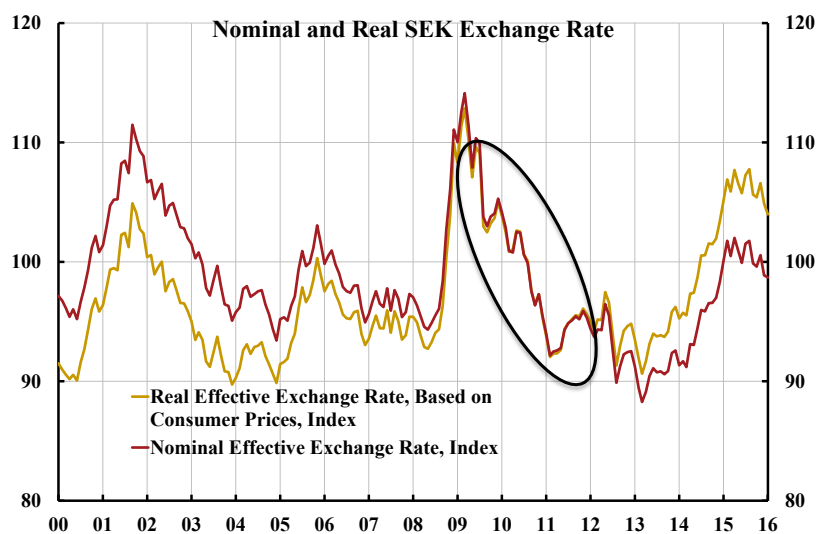
Swedish inflation fell rapidly



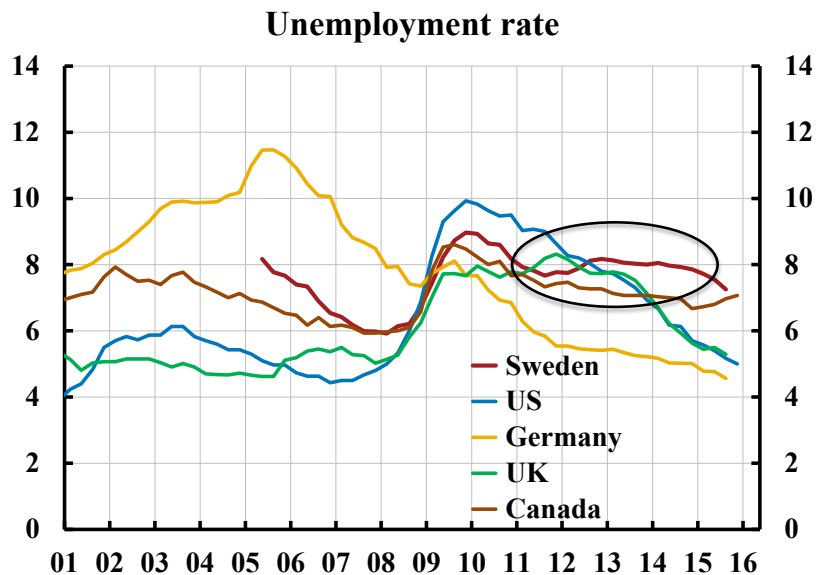
**Riksbank real policy rates increased even more,
causing large real interest-rate gap to Eurozone, UK, and US**



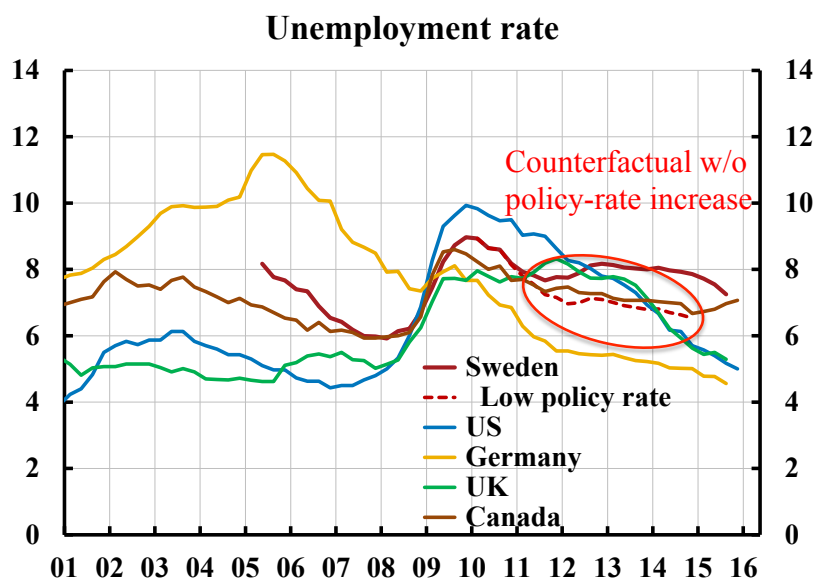
Swedish Krona appreciated dramatically



Swedish unemployment stayed high



Swedish unemployment rate more than 1 pp higher than counterfactual with no policy-rate increase



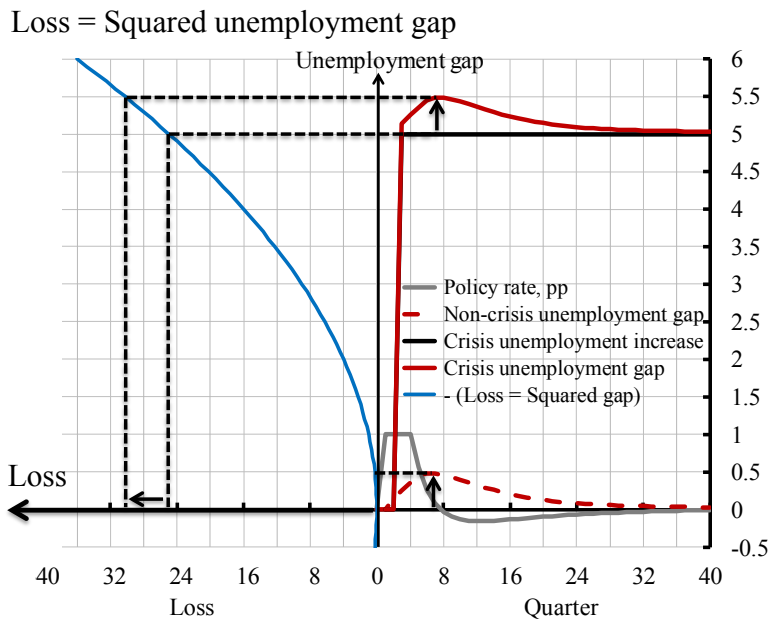
Riksbank tightening 2010-11

- Large costs of Riksbank tightening
- Including making the economy more vulnerable to any negative shock (such as the Eurozone crisis)
- Could there have been any benefits?
- Cost-benefit analysis of leaning against the wind
- Numbers and estimates are needed

Cost-benefit analysis of “leaning against the wind” (LAW) for financial-stability purposes

- LAW: Tighter monetary policy than justified by normal flexible inflation targeting
- Instead undershooting the inflation target and/or overshooting the long-run sustainable unemployment rate
- Costs: Higher unemployment, lower inflation
- Possible benefits: Lower probability or severity of a financial crisis
- Forgotten additional cost in previous literature: Higher cost of a crisis if economy initially weaker because of LAW

Cost: Unemployment gap in non-crisis and in crisis, for 1 pp higher policy rate for 4 quarters (Riksbank estimates)

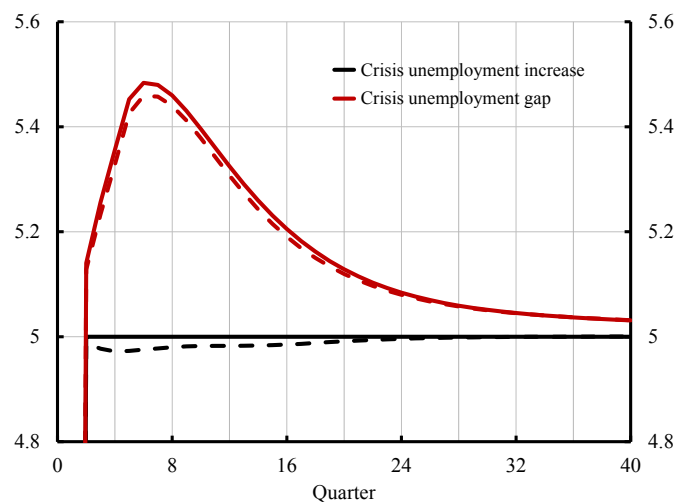


Svensson (2016), "Cost-Benefit Analysis of Leaning Against the Wind : Are Costs Larger Also with Less Effective Macroprudential Policy?" IMF Working Paper WP/16/3.

- Noncrisis:
Unemployment gap:
From 0 to 0.25 pp
Loss: From 0 to 0.25
Loss increase: 0.25
- Crisis:
Unemployment gap:
From 5 to 5.5 pp
Loss: From 25 to 30.25
Loss increase: 5.25
- Additional cost of LAW:
Crisis loss increase is 11 times
non-crisis loss increase

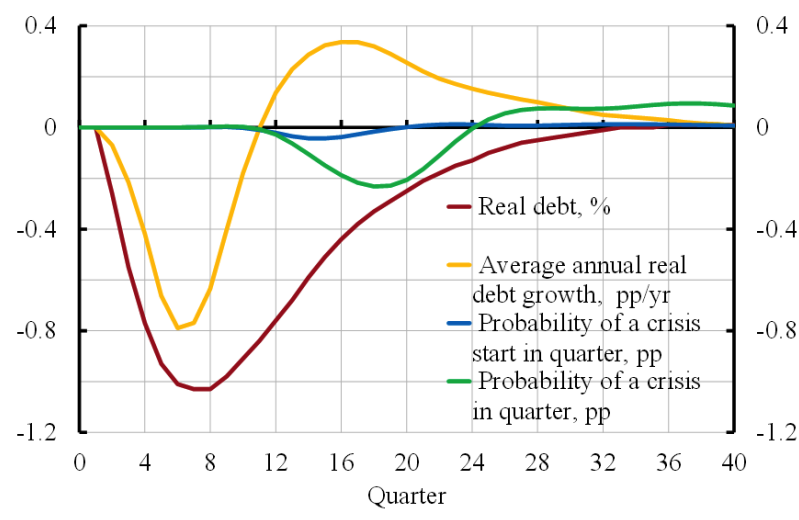
Benefit: Less deep crisis?

- Using Flodén (2014): 1 pp higher DTI ratio 2007 is associated with 0.02 pp higher unemployment increase 2007-2012 in OECD
- From solid to dashed, hardly noticeable effect



Svensson (2016), "Cost-Benefit Analysis of Leaning Against the Wind : Are Costs Larger Also with Less Effective Macroprudential Policy?" IMF Working Paper WP/16/3.

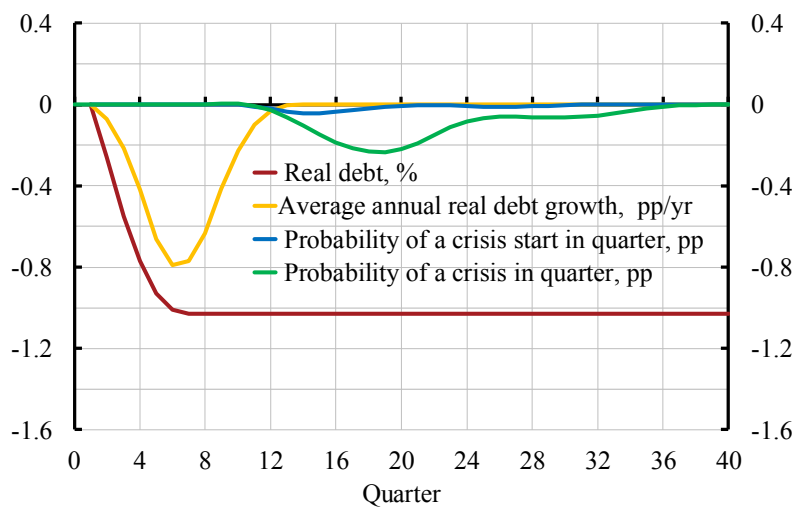
Benefit: Lower probability? Household debt, debt growth, probability of crisis start, and probability of crisis from 1 pp higher policy rate (Riksbank, Schularick and Taylor 2012) 1



Svensson (2016), "Cost-Benefit Analysis of Leaning Against the Wind : Are Costs Larger Also with Less Effective Macroprudential Policy?" IMF Working Paper WP/16/3.

Benefit: Lower probability? Household debt, debt growth, probability of crisis start, and probability of crisis from 1 pp higher policy rate (Riksbank, Schularick and Taylor 2012) 2

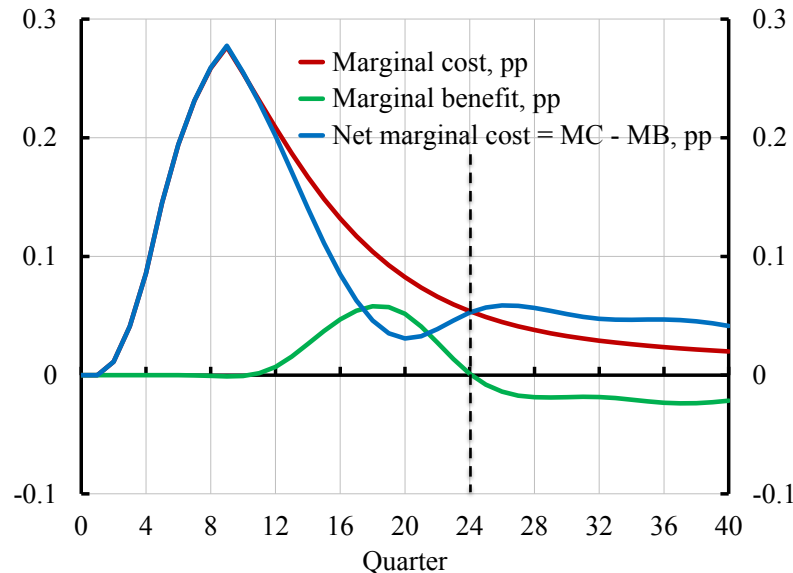
Robust to permanent effect on real debt (monetary nonneutrality)



Svensson (2016), "Cost-Benefit Analysis of Leaning Against the Wind : Are Costs Larger Also with Less Effective Macroprudential Policy?" IMF Working Paper WP/16/3.

Marginal cost of policy-rate increase much larger than marginal benefit; net marginal cost large

Also if negative benefit beyond quarter 24 is disregarded



Svensson (2016), “Cost-Benefit Analysis of Leaning Against the Wind : Are Costs Larger Also with Less Effective Macroprudential Policy?” IMF Working Paper WP/16/3.



Cost-benefit analysis of “leaning against the wind” (LAW) 1

- Given existing empirical estimates, the cost is larger than the benefit by a substantial margin
- Empirically, the possible effect of the policy rate on the probability or severity of a crisis is too small
- Main component of cost is the additional crisis cost (the higher cost of a crisis because the economy is weaker due to LAW)

Cost-benefit analysis of “leaning against the wind” (LAW) 2

- Ineffective macroprudential policy may increase the probability or severity of a crisis
- Higher probability of a crisis gives more weight to the additional cost; larger severity increases additional crisis cost
- Ineffective macroprudential policy therefore increases the cost of LAW more than the benefit, makes the cost exceed the benefit by an even larger margin



Cost-benefit analysis of “leaning against the wind” (LAW) 3

- Arguably inherent flaw in LAW
 - LAW implies undershooting inflation target
 - If inflation target credible, inflation falls below expectations, and there is an unanticipated increase in the real debt burden
 - If inflation expectations adjust down to actual inflation, LAW is equivalent to reducing inflation target, and the probability of hitting the lower bound for the policy rate increases

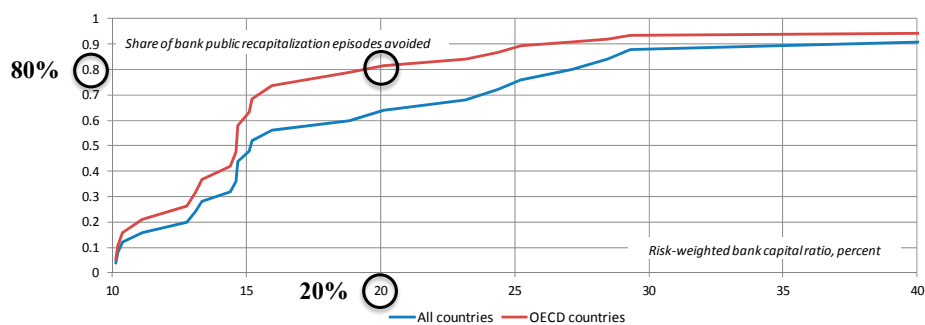


Cost-benefit analysis of “leaning against the wind” (LAW) 4

- For financial stability, no choice but to use macroprudential policy
- For example, sufficient bank capital may have dramatic effect on probability of crisis

IMF: 20% bank capital might have avoided 80% of the OECD banking crises since 1970

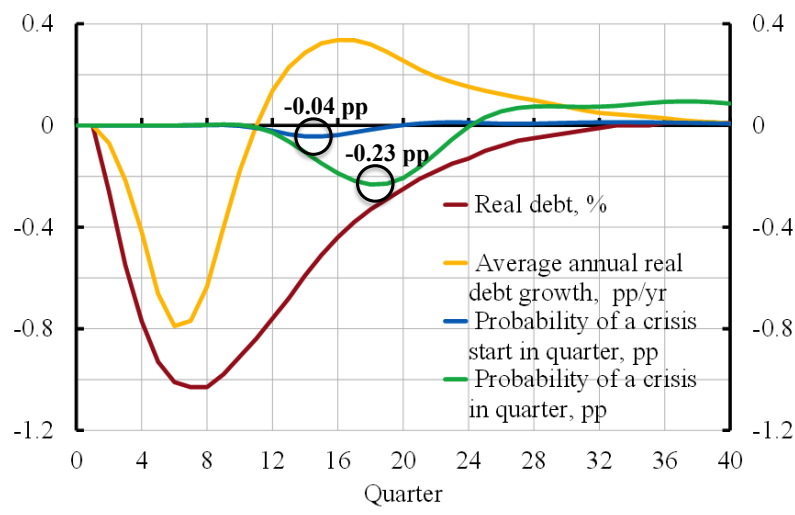
Figure 7. Share of Public Recapitalizations Avoided, Depending on Hypothetical Precrisis Bank Capital Ratios



Source: Dagher, Dell’Ariccia, Laeven, Ratnovski, and Tong (2016), “Benefits and Costs of Bank Capital,” IMF Staff Discussion Note 16/04.

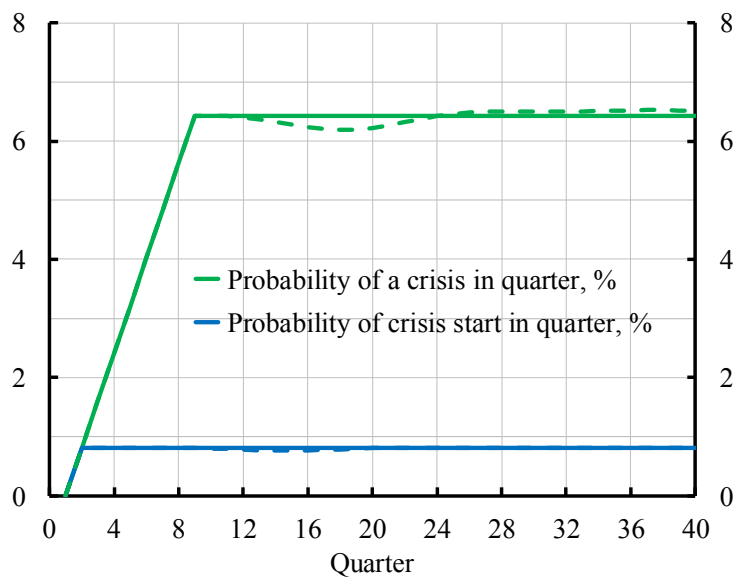
- Recall Swedish banks: Total capital 22% (CET1 17%)

Compare with the small and temporary reduction of the probability of a crisis from a higher policy rate



Svensson (2016), “Cost-Benefit Analysis of Leaning Against the Wind : Are Costs Larger Also with Less Effective Macroprudential Policy?” IMF Working Paper WP/16/3.

Compare with the small and temporary reduction (dashed) of the probability of a crisis from a higher policy rate



Svensson (2016), “Cost-Benefit Analysis of Leaning Against the Wind : Are Costs Larger Also with Less Effective Macroprudential Policy?” IMF Working Paper WP/16/3.

Conclusions

- Macroprudential policy is necessary for financial stability
- Do not ask too much of monetary policy
- It cannot achieve financial stability.
- It should not have financial stability as a goal
- Macroprudential and monetary policies are very different
- Efficiency and accountability supports that the policies should normally be conducted separately, but with each fully informed about the conduct of the other
- UK and Sweden provide two clean models that should work well

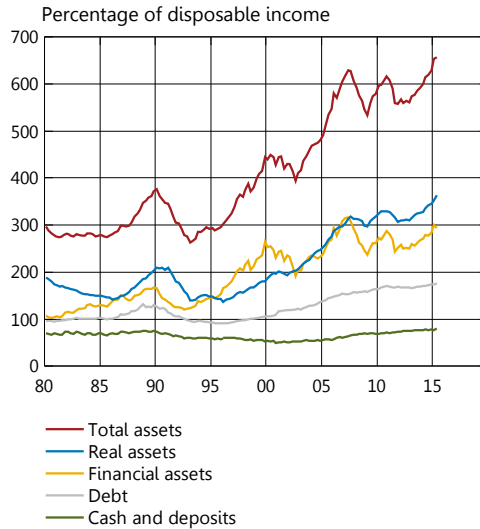
Conclusions

- If monetary policy would pose a threat to financial stability, macroprudential authority should judge and warn, monetary-policy authority decide whether to act
- At current state of knowledge, little or no support for leaning against the wind for financial-stability purposes
- Any such leaning only if justified by a thorough cost-benefit analysis
- Burden of proof should be on the advocates of leaning

Extra slides

Household assets and liabilities in Sweden

Chart A27. Household assets and liabilities in Sweden



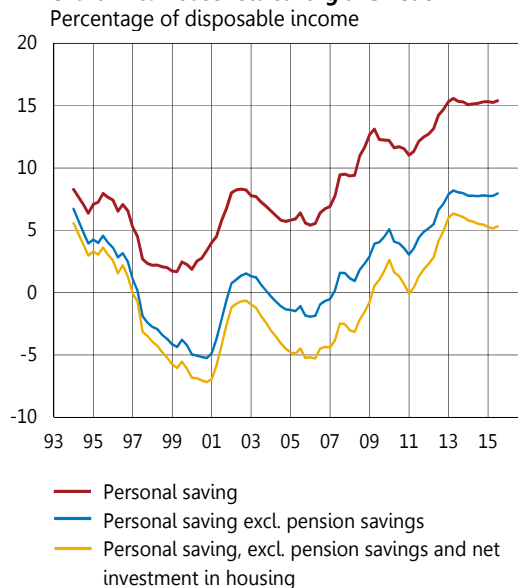
Note. Total assets exclude collective insurance. Financial assets refers mainly to cash, bank deposits, bonds, mutual funds and shares. Real assets refers to single-family houses, tenant-owned apartments and second homes.

Sources: Statistics Sweden and the Riksbank



Household saving in Sweden

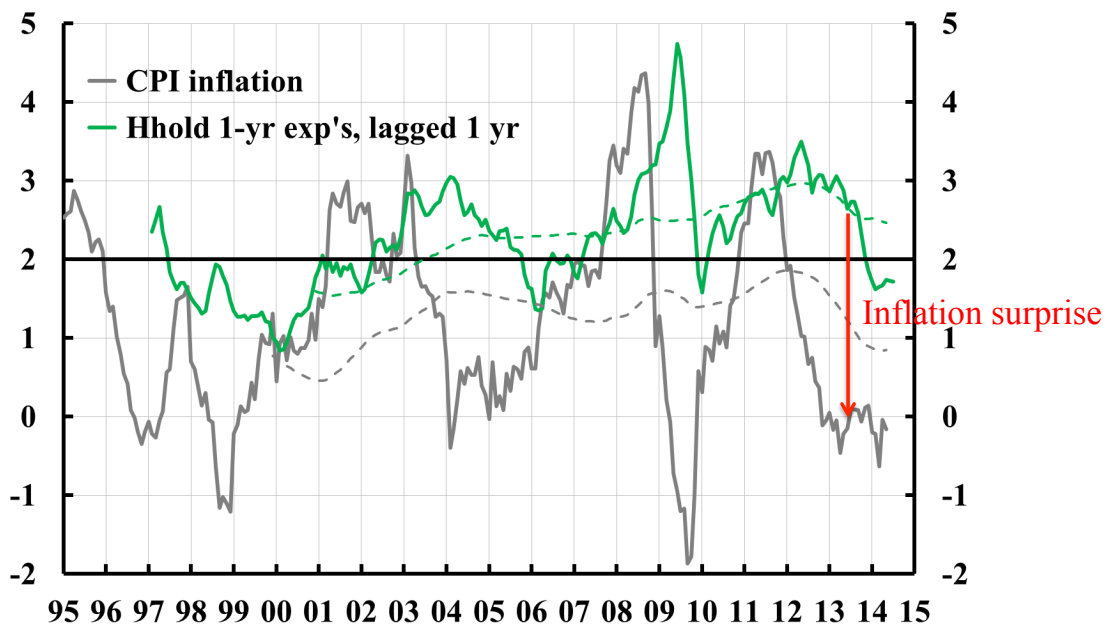
Chart A26. Household saving in Sweden



Sources: Statistics Sweden and the Riksbank

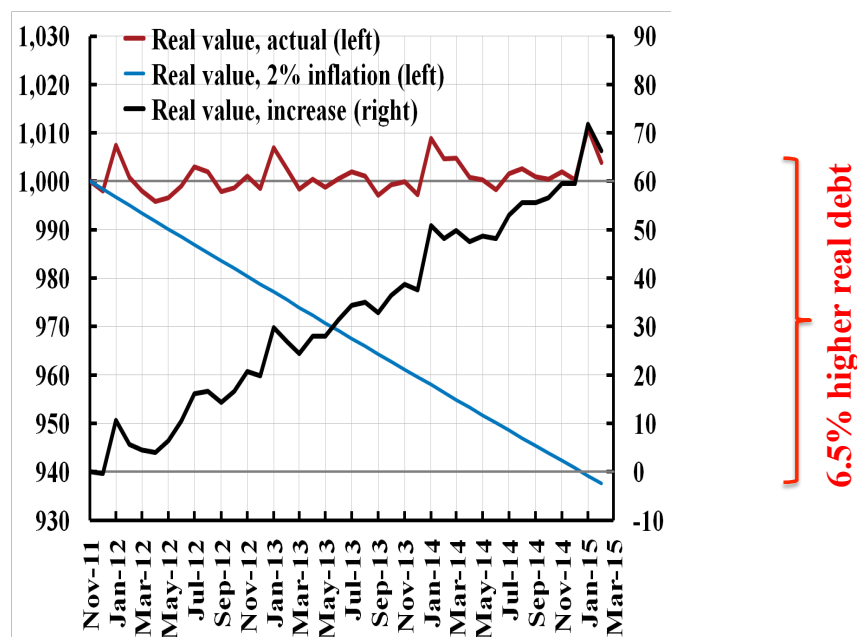


Additional cost: Inflation below household's expectations has increased household real debt burden



Note: Dashed lines are 5-year trailing moving averages

The real value of an SEK 1 million loan taken out in Nov 2011, actual and for 2 percent inflation



Additional cost: Inflation below household's expectations has increased household real debt burden

- Since November 2011, price level more than 6% lower than if inflation had been 2%
- The real value of fixed nominal debt taken out in Nov 2011 is more than 6% higher than if inflation had been 2%
- Leaning against the wind may have *increased* real debt, not reduced it
- Schularick-Taylor: 5% higher real debt in 5 years increases the probability of a crisis by 0.4 pp
- Leaning counterproductive