The recent Swedish experience of monetary policy and macroprudential policy

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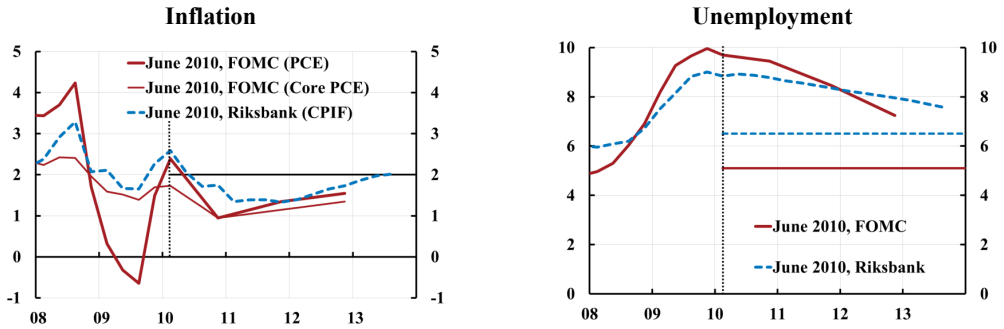
Outline

- Background: Monetary policy tightening 2010-2011
- Current monetary policy
- Cost-benefit analysis of leaning against the wind
- Macroprudential policy: Swedish model

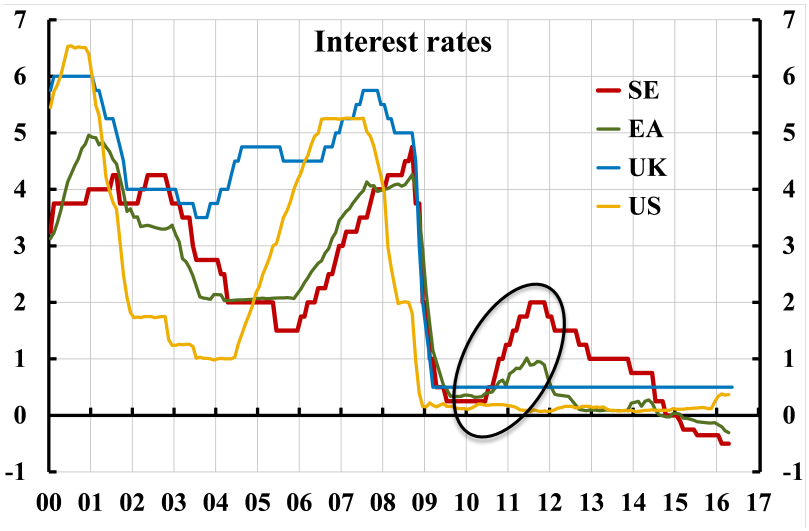
1. Background:
Fed and Riksbank forecasts June 2010



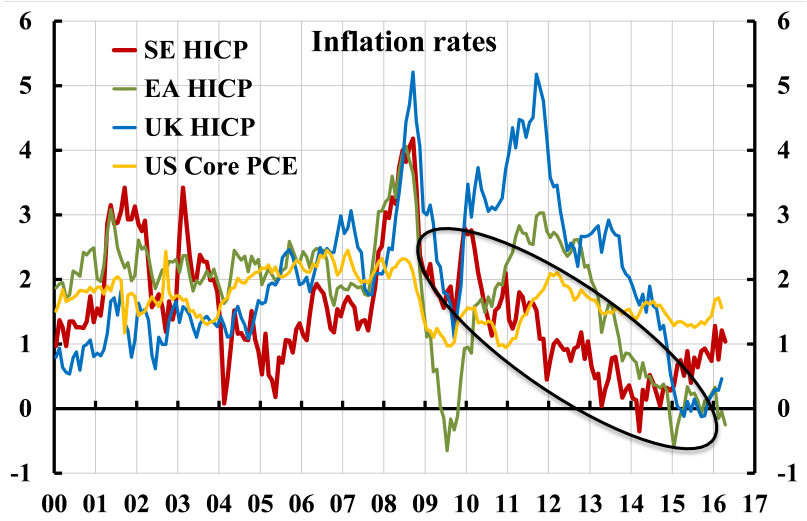
- Riksbank and Fed forecasts quite similar
- Policies very different

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

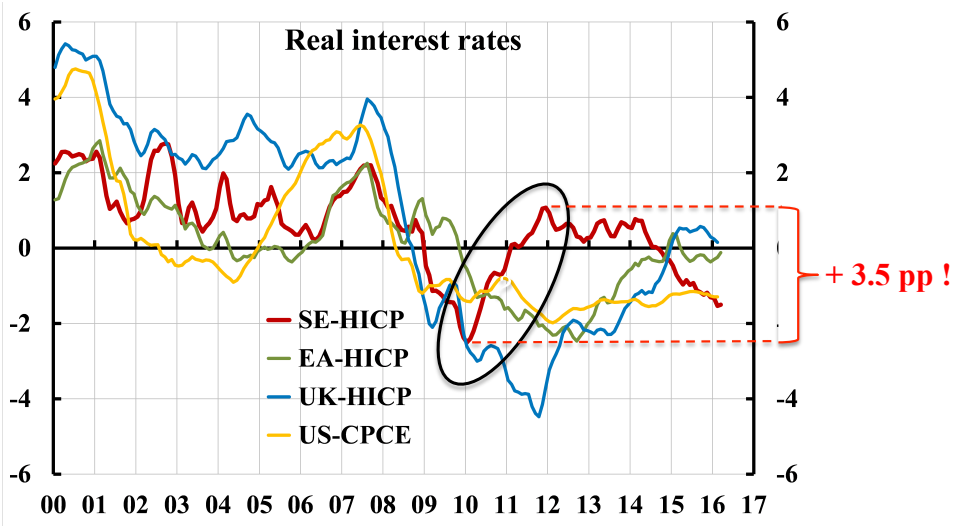
Large and rapid increase in Riksbank policy rate 2010-2011



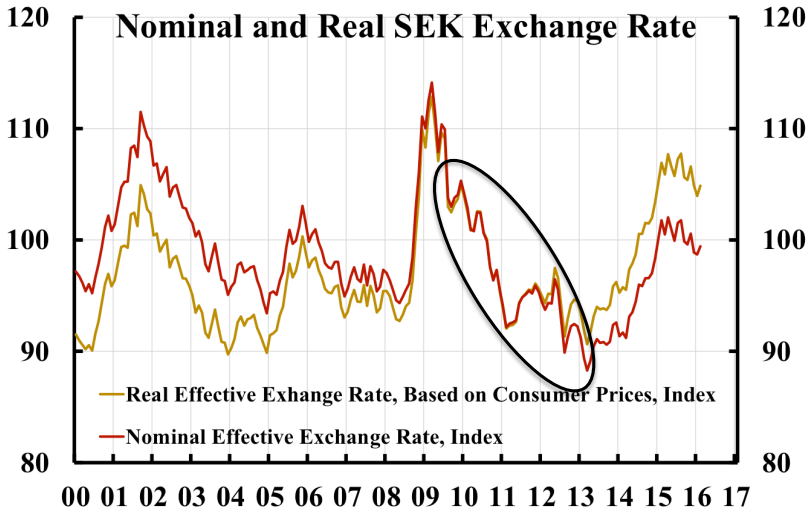
Swedish inflation fell rapidly



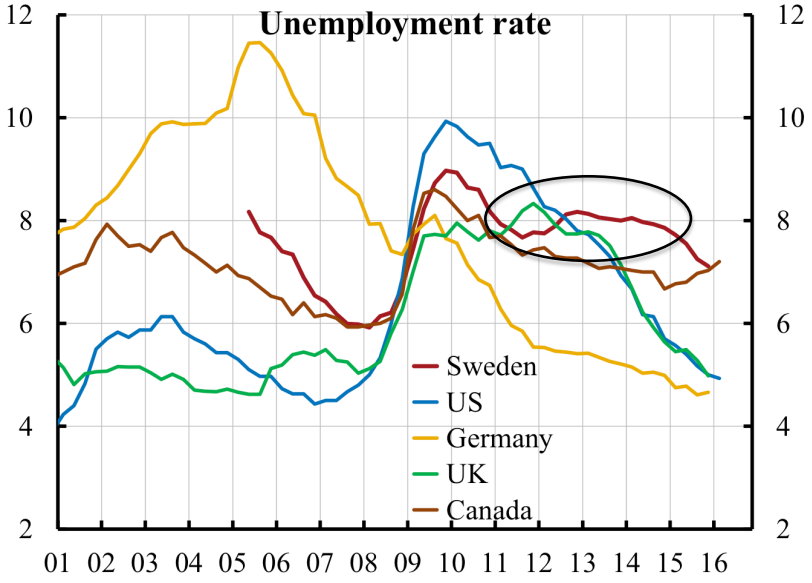
Riksbank real policy rates increased even more, causing large real interest-rate gap to Eurozone, UK, and US



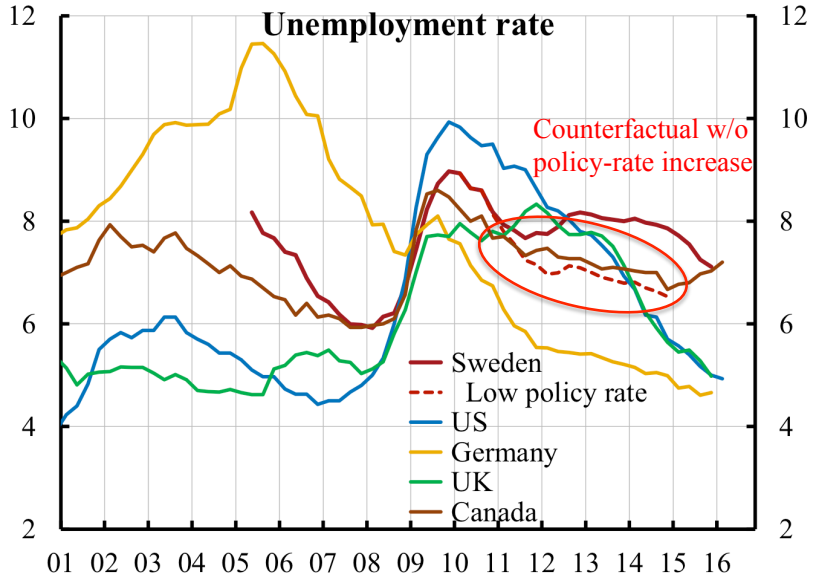
Swedish Krona appreciated dramatically



Swedish unemployment stayed high



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



2. Current monetary policy

- Negative policy rate
  - Note: Structural reasons for low/negative rates
- Asset purchases
- May work: Inflation rising, unemployment coming down
- What if this monetary policy already in 2010-2011?
- Additional policies:
  - Currency floor
  - Monetary financing

3. Cost-benefit analysis of "leaning against the wind" for financial-stability purposes (LAW)

- 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
- Forgotten additional cost in previous literature: Higher cost of a crisis if economy initially weaker because of LAW
- Possible benefits: Lower probability or severity of a financial crisis

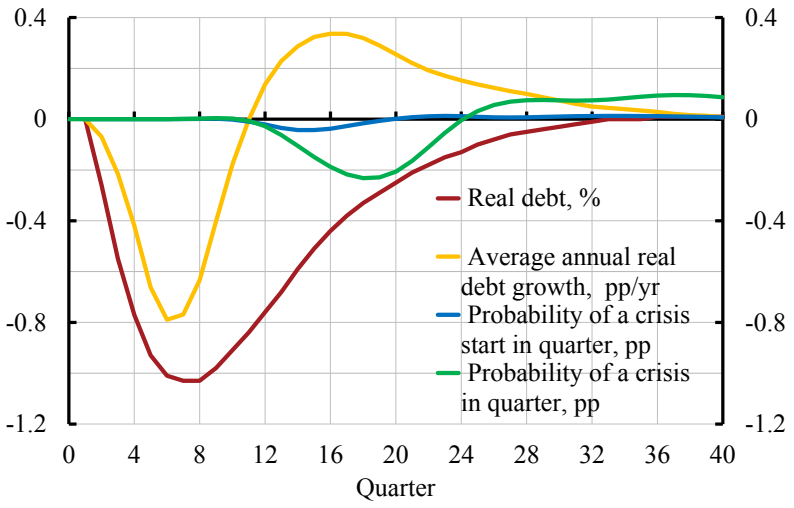
Possible transmission channels for policy-rate effect on probability of crisis

- Schularick-Taylor 2012 (14 countries, 1870-2008): Correlation between probability of crisis and credit growth
- A higher policy rate may temporarily reduce credit growth, but if no long-run effect on credit levels higher credit growth later on; credit growth just postponed
- Imperfect and indirect channel: Probability of crisis really depends nature and magnitude of shocks and lenders' and borrowers' resilience to shocks (loss-absorption capacity (capital) and debt service capacity)

Possible transmission channels for policy-rate effect on severity of crisis

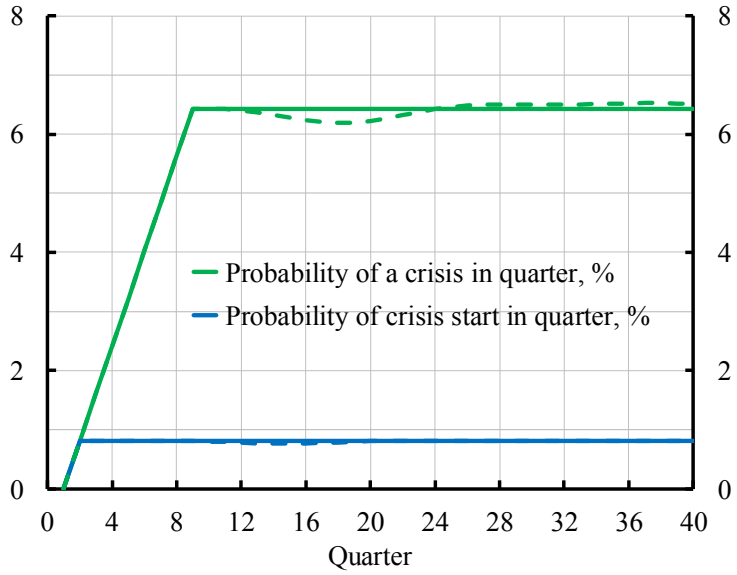
- Flodén 2014 (OECD): 1 pp higher household debt-to-income ratio in 2007 associated with 0.02 pp higher increase in unemployment 2007-2012
- Krishnamurthy and Muir 2016 (14 countries, 1869-2014): 1 pp higher-3-year growth of credit-to-GDP ratio is associated with a(n insignificant) 0.05 pp larger GDP decline from peak to trough in a crisis
- A higher policy rate might temporarily reduce the debt-to-income ratio or credit-to-GDP growth
- But very small effects, can be disregarded

Effect of 1 pp higher policy rate in 4 quarters on real debt (Riksbank), real debt growth, probability of a crisis start, and probability of crisis (Schularick-Taylor)



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.

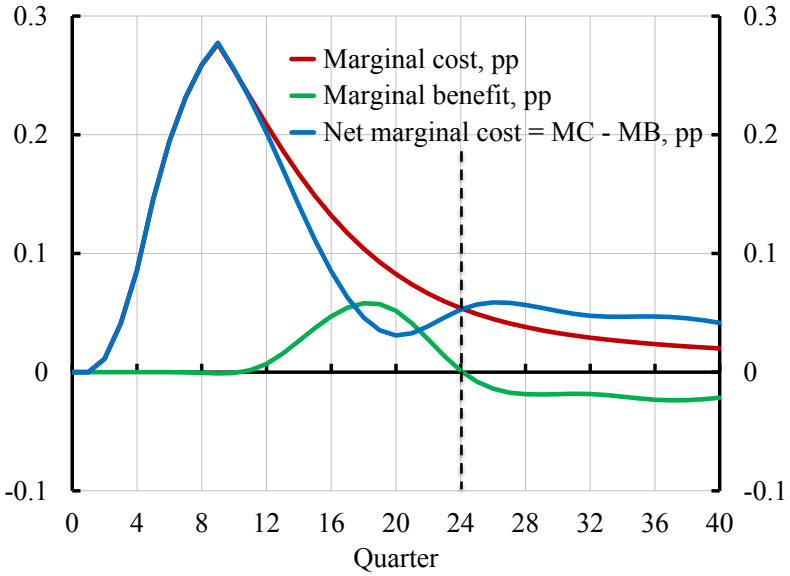
Empirically very small and temporary effect (dashed) on the probability of a crisis from a higher policy rate



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.

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

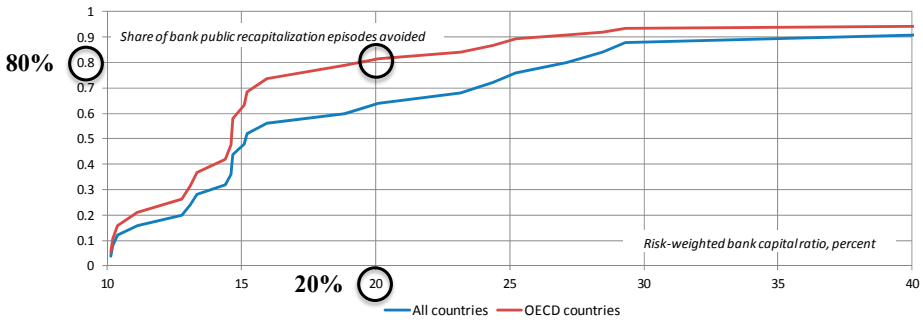
(Also if negative benefit beyond quarter 24 is disregarded)



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.

Compare w/ possible effect of macroprudential policy
IMF: 20% risk-weighted bank capital might have avoided 80% of the OECD banking crises since 1970

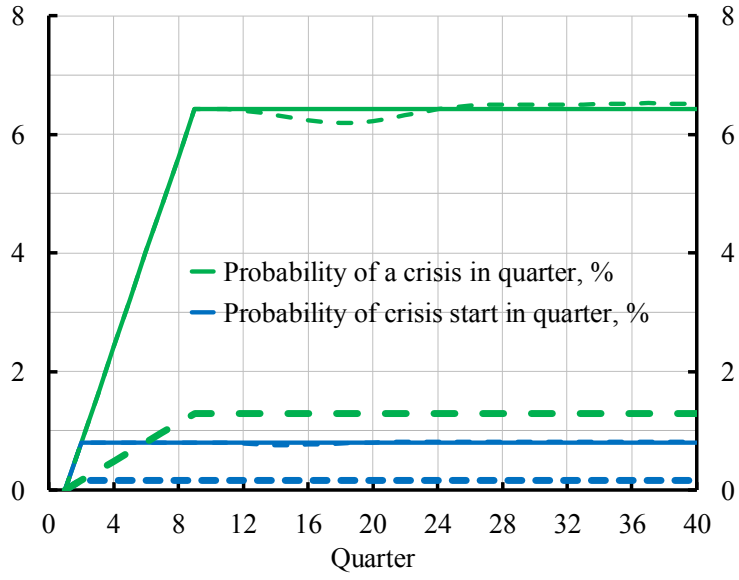
Figure 7. Share of Public Recapitalizations Avoided, Depending on Hypothetical Precrisis Bank Capital Ratios



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

- Swedish capital requirements now:
  Total risk-weighted capital 22% (CET1 17%) (depending on precise measure)

Much larger shift down of the probability of a crisis (thick dashed lines)



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.

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)

Main policy conclusion from cost-benefit analysis of LAW

- For financial stability, there is no choice but to use macroprudential policy
- Monetary policy cannot achieve and maintain monetary policy

4. Macroprudential policy: 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

What determines the risks related to household debt and the housing market?

- Not levels of housing prices and household debt
- Instead
  - Excessive levels (relative to what is consistent with fundamental factors)
  - Resilience of lenders and borrowers
    - Loss-absorbing capacity of lenders and borrowers
    - Debt-service capacity of borrowers

Could a fall in housing prices lead to a large fall in consumption (argued by Riksbank and FI)?

- Hardly in Sweden
- Denmark, UK, US: Consumption that fell was debt-financed overconsumption; also, unsustainably low household saving
- Sweden: No evidence of debt-financed overconsumption; household saving historically high
- Housing-price fall does not affect owners' cash flow; owners can stay put
- Winners: New buyers and hholds planning to increase housing
- Losers: Hholds planning to reduce housing
- Policy-rate and mortgage-rate fall benefits all debtors
- Variable mortgage rates provide insurance against bad times

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)

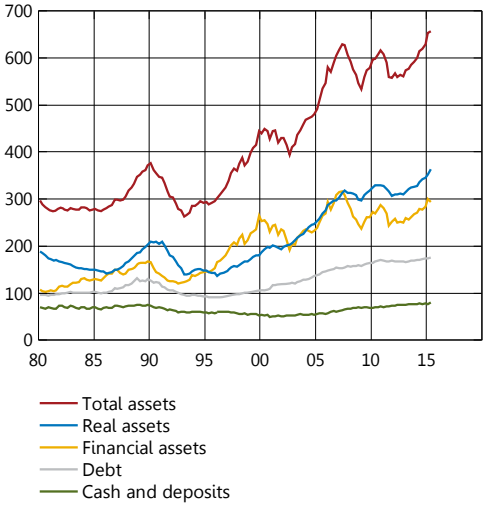
Finansinspektionen (the Swedish FSA), no “inaction bias” 2

- 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

Household assets much higher than debt

Chart A27. Household assets and liabilities in Sweden

Percentage of disposable income

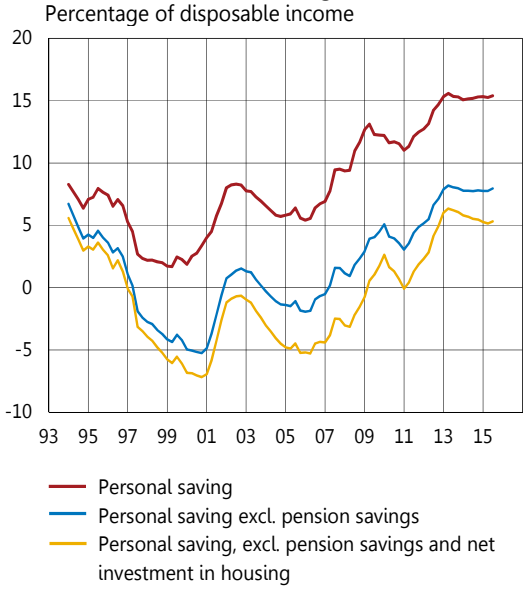


Note. Total assets exclude collective insurance. Financial assets refers mainly to cash, bank deposits, bonds, mutual funds and shares. Real assets refers to single-family houses, tenant-owned apartments and second homes.

Sources: Statistics Sweden and the Riksbank

Household saving historically high (no indication of debt-financed overconsumption)

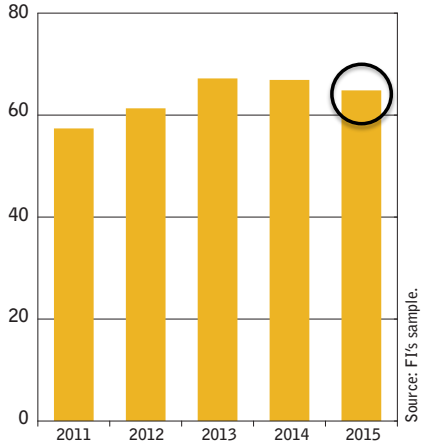
Chart A26. Household saving in Sweden
Percentage of disposable income



Sources: Statistics Sweden and the Riksbank

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

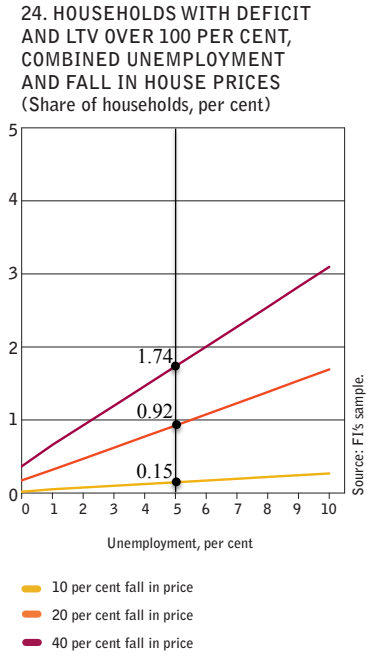
2. AVERAGE LOAN-TO-VALUE RATIO
(Per cent)



Note. Arithmetic mean.

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

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



- 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%

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

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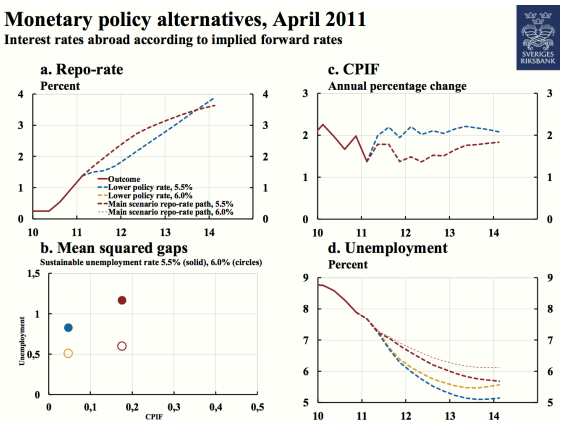
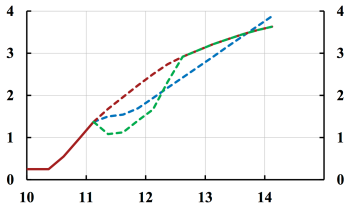
Extra slides

Goodfriend and King: Tightening 2010-2011 “broadly excepted by all members”?

- GK ignores minority policy rule
- Lower minority policy rate and policy-rate path only first step of several to get to “well balanced” monetary policy
- Even first step substantially more expansionary



Minority path substantially more expansionary: 4-quarter equivalent minority path (green)

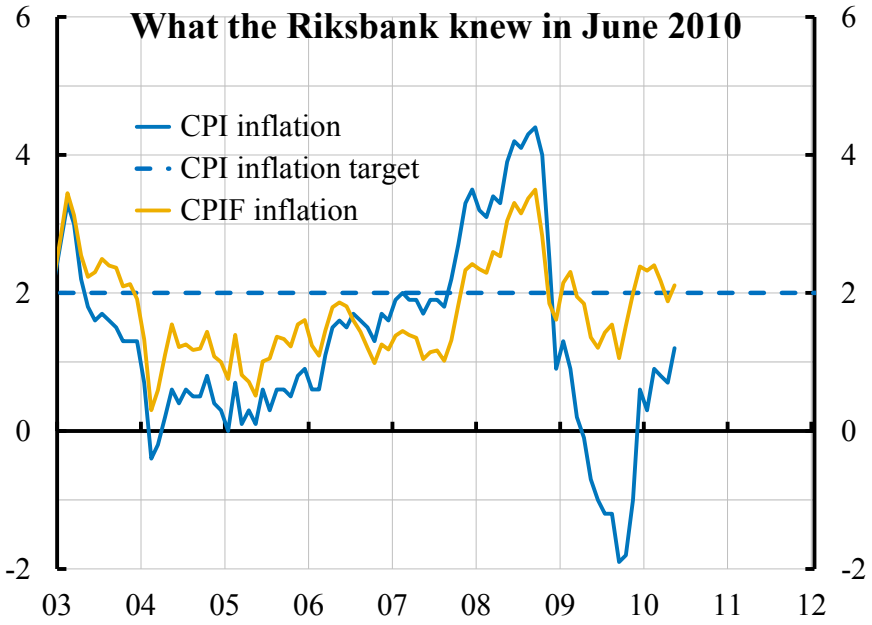


Svensson, blog post, www.larseosvensson.se and www.ekonomistas.se, May 12, 2016

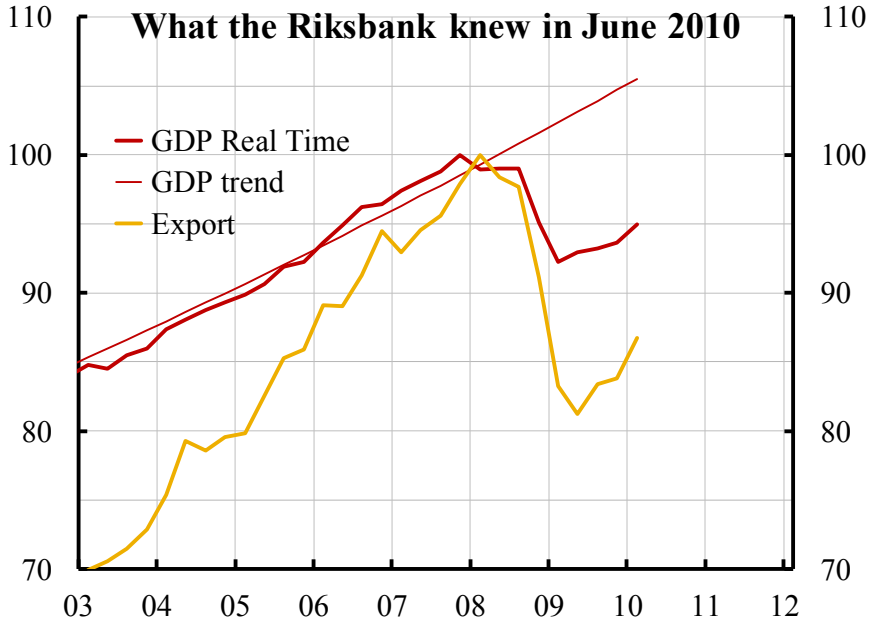
Was the tightening justified given the info at the time?

- What did the Riksbank know?

CPI inflation below target

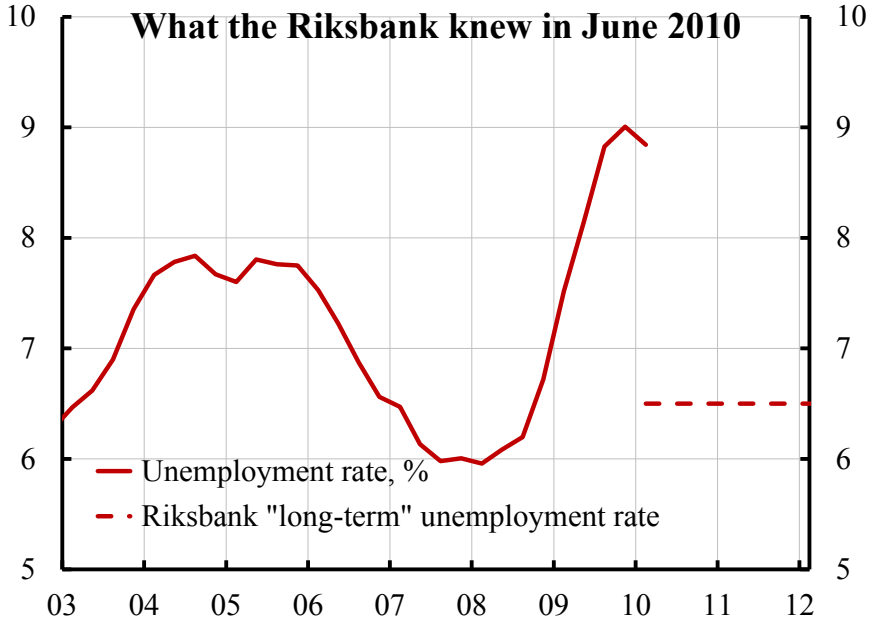


GDP 5% below peak, 10% below trend; export 13% below peak



Svensson (2016), "Two serious mistakes in the Goodfriend and King review of Riksbank monetary policy," Blog post, January 22, www.larseosvensson.se.

Unemployment close to 9%, at peak; far above Riksbank's "long-term" unemployment rate



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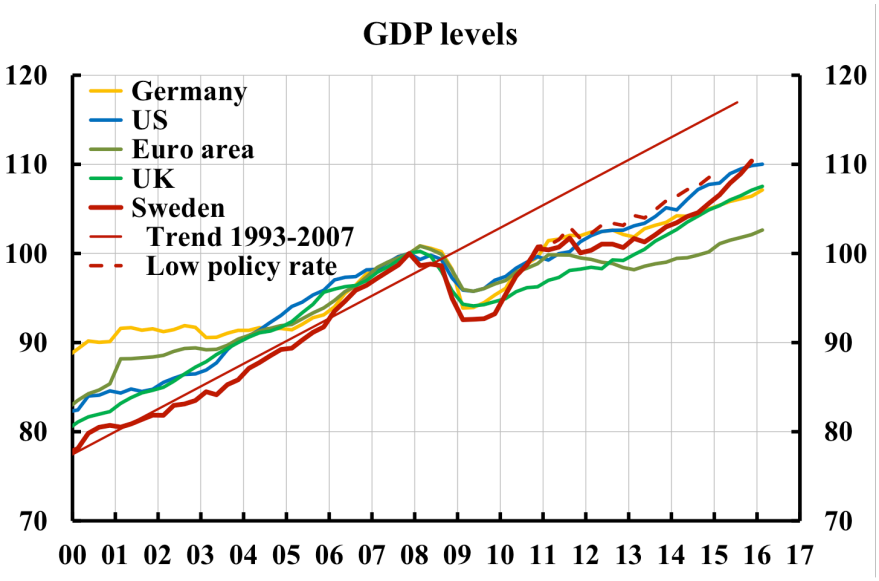
GDP levels



Distinguish *central banks* and *monetary policy* 1

- Should *monetary policy* have financial stability as a goal?
  - **No**
  - Economic policies should only have goals that they can achieve
- 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

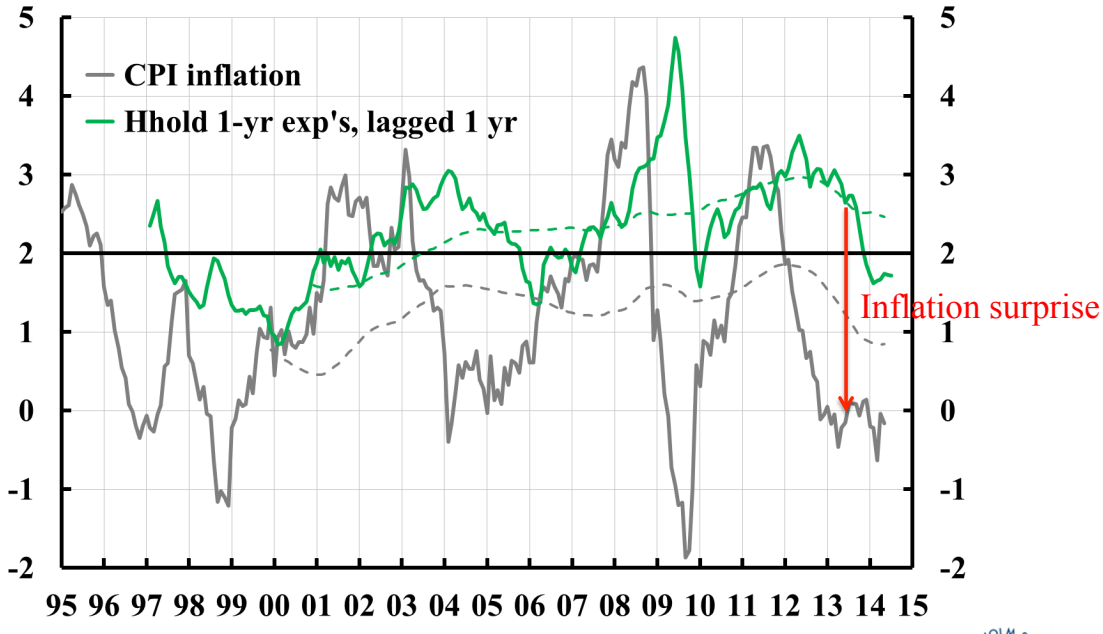
Distinguish *central banks* and *monetary policy* 2

- 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?

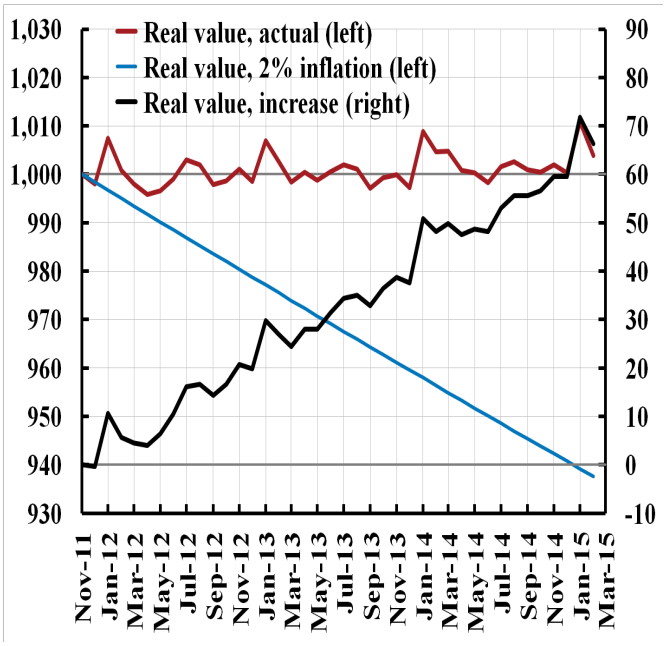
- BoE model, Aug 2013, forward-guidance promise
- 3rd knockout: FPC would judge that monetary policy poses a significant threat to financial stability that the FPC cannot contain with its instruments
- It should be the macroprudential authority, not the monetary policy one, to make the judgment and to 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"

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