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


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 (an 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)

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


Marginal cost of policy-rate increase much larger than marginal benefit; net marginal cost large
(Also if negative benefit beyond quarter 24 is disregarded)

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

- 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)


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 households planning to increase housing
- Losers: Households 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”

- 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](image)

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](chart)

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%

![Chart A27. Average LTV ratio of new borrowers](chart)

Ref. 14

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%


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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](http://www.larseosvensson.se) and [www.ekonomistas.se](http://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

What the Riksbank knew in June 2010

CPI inflation below target

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

What the Riksbank knew in June 2010

Unemployment close to 9%, at peak; far above Riksbank’s “long-term” unemployment rate


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