The Rationale for Macroprudential Policy

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Background papers:

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?
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

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?
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”?  

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
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?

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
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)

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, …
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?

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
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), …

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
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

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

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

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
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?

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?

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)

- Noncrisis:
  Unemployment gap:
  From 0 to 0.5 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

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


Robust to permanent effect on real debt (monetary nonneutrality)

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

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

- 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

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
Percentage of disposable income

- Total assets
- Real assets
- Financial assets
- Debt
- Cash and deposits

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
Percentage of disposable income

- Personal saving
- Personal saving excl. pension savings
- Personal saving, excl. pension savings and net investment in housing

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