Comment on Session: Modelling the impact of macroprudential policy

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Outline

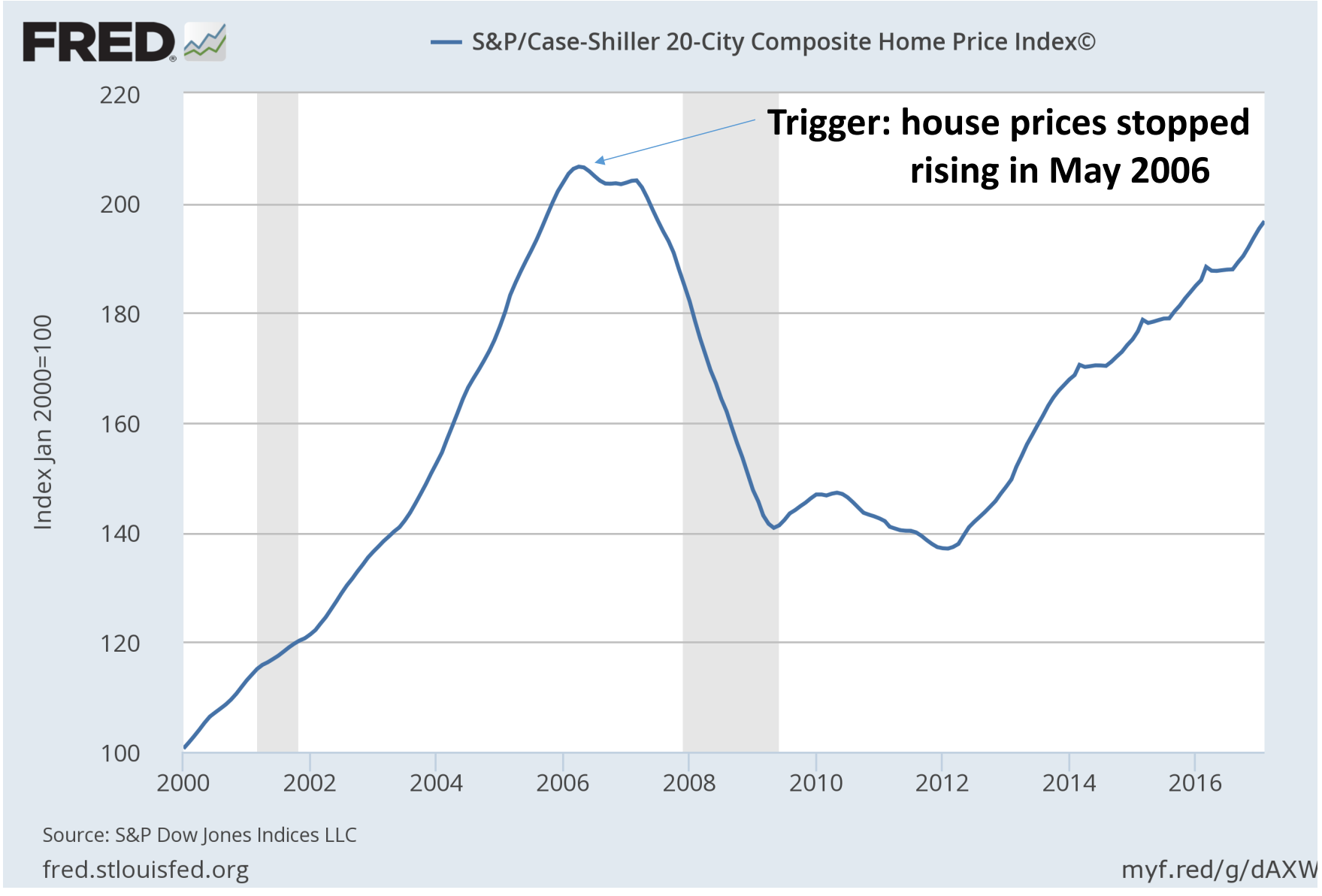
- First, a comment that applies to all the papers in the session.
- Then, comment on individual papers.

Why So Much Interest in Macro Prudential Policy?

- Great Recession preceded by a financial crisis in 2007-2008.
- Macro-Prudential Analysis:
  - Diagnose the causes of the financial crisis and the linkages to real economy.
  - Devise policy to reduce likelihood of another crisis.

(Somewhat oversimplified) Emerging Narrative About Financial Crisis

- Bernanke (2010) testimony before Financial Crisis Inquiry Commission, Washington, DC.
  - Based in part on Gorton, 2008 Jackson Hole paper, 'The Panic of 2007'.
- Trigger (shock):
  - Housing price correction starting in mid-2006.
  - By itself it would not have been a big deal.
  - But, there was a 'perfect storm'.


FRED
S&P/Case-Shiller 20-City Composite Home Price Index©
Trigger: house prices stopped rising in May 2006
Index Jan 2000=100
220
200
180
160
140
120
100
2000
2002
2004
2006
2008
2010
2012
2014
2016
Source: S&P Dow Jones Indices LLC
fred.stlouisfed.org
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Housing Price Correction Triggered a Rollover Crisis

- (Almost) definition of a bank:
  - Long term assets are financed by short term liabilities ('maturity mismatch').
  - Must continually roll over liabilities.
- Starting mid-summer, 2007 a rollover crisis began in the US shadow banking system.

The Housing Price Trigger and the Rollover Crisis

- Before 2007, shadow banks looked great:

Pre-housing Market Correction	
Assets	Liabilities
120 $\overbrace{(105)}^{\text{in case of crisis}}$	Loans and deposits: 100
	Banker net worth 20 $\overbrace{(5)}^{\text{in case of crisis}}$

Banks were solvent whether or not there was a crisis. So, no crisis possible (Gertler-Kiyotaki, AER 2015).

- After housing price correction, rollover crisis possible:

Post-housing Market Correction	
Assets	Liabilities
110 (95)	Loans and deposits: 100
	Banker net worth 10 (-5)

The Rollover Crisis and the Great Recession

- Housing price 'correction' hits a financial system vulnerable to a run.
- With collapse of mortgage market, 'correction' in housing prices turns into a *plunge*.
- People feel poor and cut back spending.
- Economy starts to collapse as businesses cut back investment in part because of tightening balance sheets and in part because of decline of sales.
- Low interest rates can't stabilize economy because of Zero Lower Bound.
- A perfect storm!

Nonlinearity of Conventional Narrative

- Appealing feature of crisis models: get big and sudden events with small shocks.
  - Sudden collapse of major financial institutions in late 2008.
  - Sudden collapse of asset backed securities market.
  - Sharp rise in interest rate spreads.
  - Dramatic drop in output and investment in late 2008.

- Crisis models under rapid development (Gertler-Kiyotaki, Gertler-Kiyotaki-Prestipino).
  - Logic imported from sovereign debt literature (Cole-Kehoe), though bear similarity to bank run literature (Diamond-Dybvig).

Comment

- The papers in this session primarily concerned with commercial banks and no crisis.
  - But, recent history suggests this may not be where the big macro-prudential risks lie.
  - Under the 'conventional narrative', commercial banks were the 'good' part of the system, and helped to stabilize it.
  - This is not entirely true, the crisis revealed gaps in risk management in commercial banks (decline in downpayments, excess risk taking by too-big-to-fail financial firms, etc.).

- Size of Shadow Banking system
  - Despite everything, reputedly still very large.
  - Financial Stability Board reckons that shadow banking may be 10-25% of world financial system (Economist Magazine, May 10, 2014).

Kiley and Sim, Optimal Monetary and Macroprudential Policies: Gains and Pitfalls in a Model of Financial Intermediation

- Model banks in the way that BGG model entrepreneurs.
  - Asset side of bank balance sheet is banks' risky 'project'.
  - Bank acquires asset by combination of standard debt contract and bank equity.
- Is costly state verification (CSV) the right friction for banks?
  - With standard debt contract, volume of intermediation is inefficiently low.
  - But, the reason to consider leverage restrictions on banks is the conjecture that banks borrow *too much*.
  - Is this the right model for thinking about the desirability of leverage restrictions?
- Mendicino, et al, also use CSV, but nevertheless have an important reason for leverage restrictions because of the moral hazard consequences of government liability insurance.

Kiley and Sim, cnt'd

- Fluctuations in policy (leverage and monetary) has virtually no effect on welfare:

Disposition of Rule	Welfare loss
Ramsey on monetary and leverage policy	0
Simple empirical rule for monetary and leverage policy	-0.4%

- To put this into context,
  - Suppose you consume one Starbucks per day of the year: 365 cups/year.
  - Losing 0.4% of annual consumption means you lose 1.5 cups per year! Surely, you wouldn't notice that!
- But, I suspect that if you put a leverage restriction in a model which has financial crises, the welfare gains could be very much bigger if you reduce the incidence of financial crisis.

Kiley and Sim, cnt'd

- Timing assumption.
  - Banks make period t borrowing and lending decisions before period t idiosyncratic uncertainty is resolved.
- Resolve idiosyncratic uncertainty among banks by issuing equity.
  - is that equivalent to (more natural) assumption of interbank loan market?
  - Evidence from Adrian and Shin that equity not an important source of funding for banks.

Borrowing Dwarfs Equity as a Source of Bank Funding

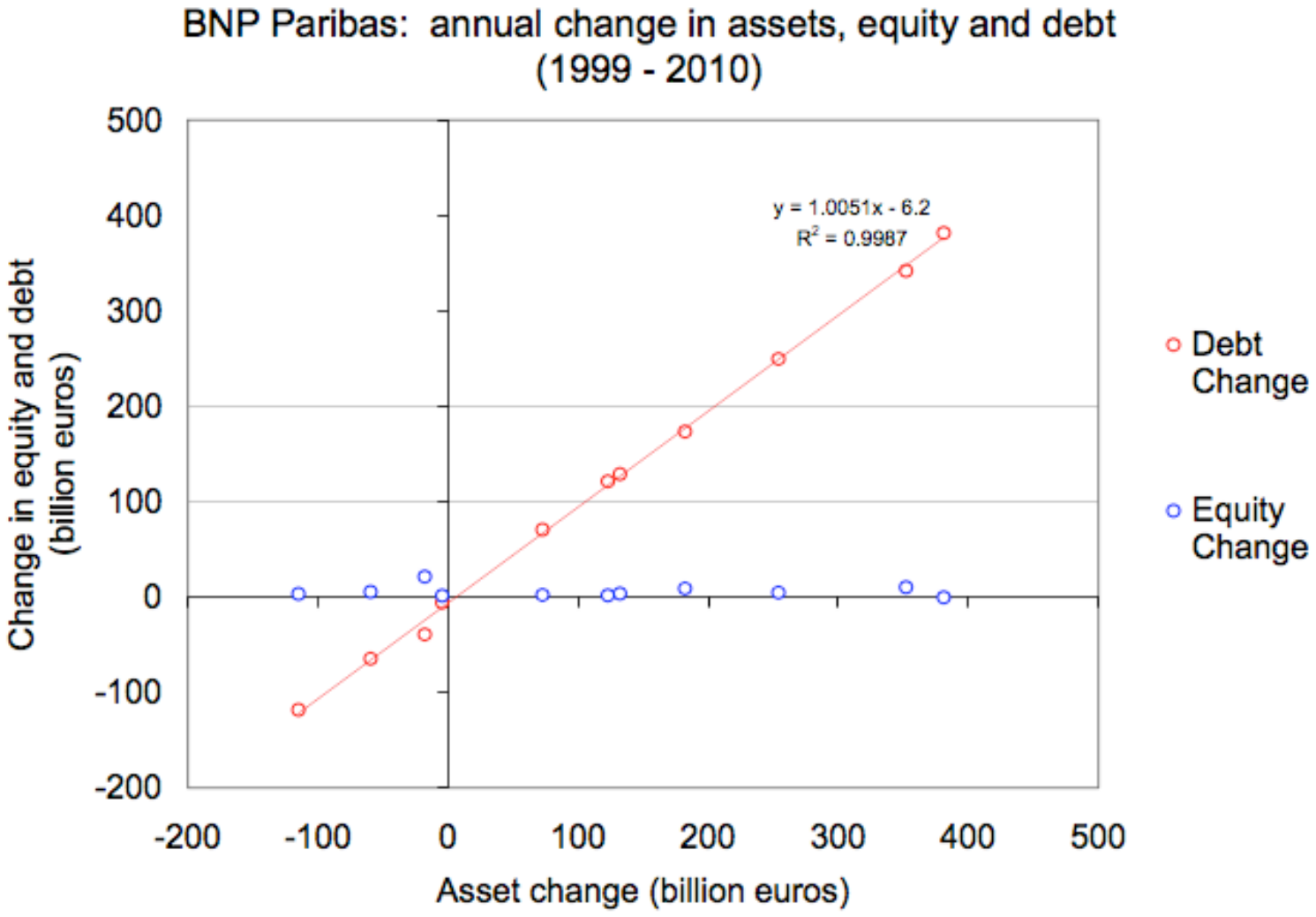

Figure 3. BNP Paribas: annual change in assets, equity and debt (1999-2010) (Source: Bankscope)

Mendicino et al, "Bank Capital in the Short and in the Long Run"

- Result:
  - To raise capital requiremets, you should do it slowly and run a loose monetary policy along the transition.
- What's behind these transitional dynamics?
- Possible intution:
  - Short run: stronger capital requirements imposed by decreasing assets, and loose monetary policy undoes the depressive effect on output.
  - Long run: stonger capital requirements brought about by more equity, while having a small effect on assets.
    - ★ Tighter capial requirements force banks to cut back their borrowing, moving them in the direction of monopsony.
    - ★ Profits rise as interest costs fall (there is an upward supply of funding).
    - ★ Over time, equity grows and the agency costs associated with deposits are reduced.
    - ★ Seems to take too seriously the stark distinction between equity and debt in the model.
    - ★ Also, does the model predict that bankers should be actively lobbying for tigher leverage restrictions?

Conclusion

- Should we be using models in which rollover crises are possible, to think how we want to do bank regulation?