Regulatory Policy Instruments: Discussion

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My focus in the triple discussion

I will focus my discussion on the following two main questions:

- From the perspective of a policy maker who is entrusted with designing and enforcing new macroprudential policy instruments, would the three papers provide useful input and support?
- Can the the policy conclusions that are suggested by the models be translated into workable policy recommendations?

Answering these questions is a process of translation that obviously has to look to some degree also at the models as such: Do they use coherent concepts, do the assumptions make sense, do they provide an appropriate perspective on the problem?

Which macroprudential Issues do the three papers contribute to?

- Paper 1: Will regulatory restrictions of LTVs work? The paper suggests a skeptical view based on an empirical study of one special case: Collateralized business lending in Japan.
- Paper 2: Studies some potential effects of liquidity and equity requirements for banks by a simulation study of a theoretical model.
- Paper 3: Studies "optimal" capitalization rules for banks from a network perspective using some form of risk management like model applied to the banking system as a whole.

With the focus of my discussion in mind I will discuss the three papers in the order of their closeness (or distance) from workable macroprudential policies, starting with paper 1 continuing with paper 3 and finally end with paper 2.

LTV regulation and macroprudential policy

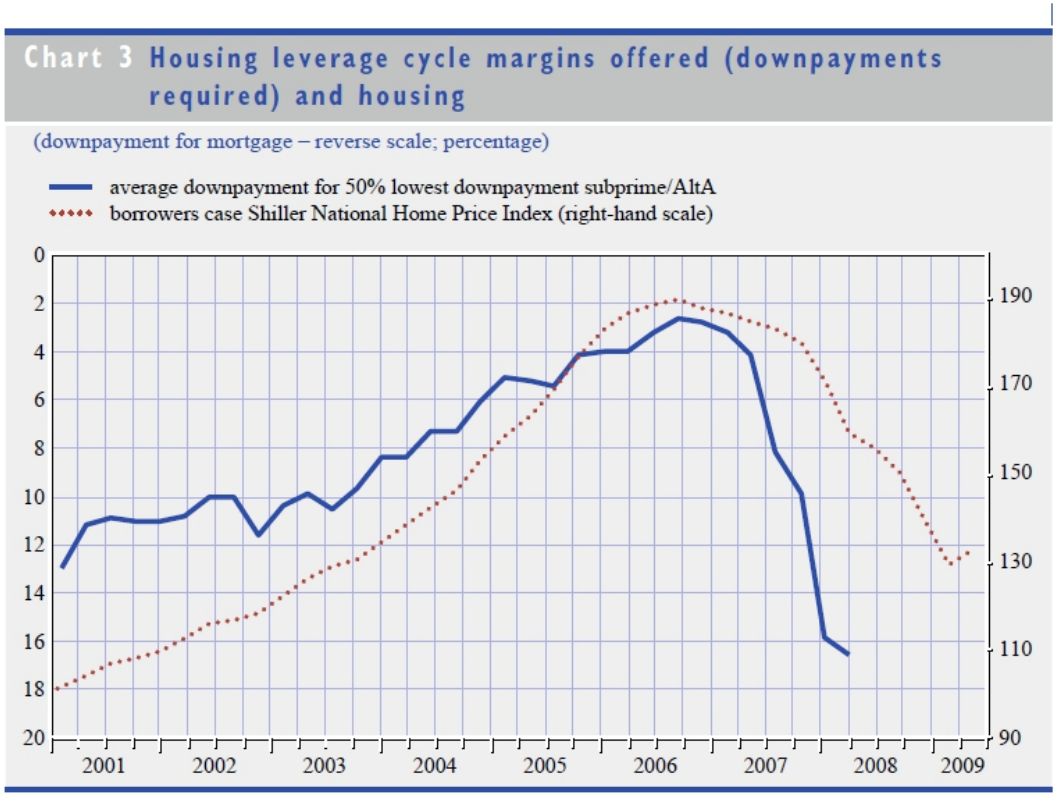
Some finance jargon: If the value of an asset is 100 Euro and you can borrow 80 to purchase this asset using it as collateral for the loan and pay 20 from your own funds then finance jargon says

- The loan to value ratio is 80%.
- The margin is 20%
- The leverage is 5

These numbers all express the same information and one can be translated into the other. They all occur in any form of collateralized lending.

Why are these numbers an issue in macroprudential policy discussions?

A picture from Geanakoplos 2010:



The results of this paper:

An empirical study of collateralized business lending in Japan suggests that the things might be more intricate. In particular:

- A cap on LTVs in Japanese business lending would not have been effective during the bubble period.
- LTVs moved countercyclical
- High LTV borrowers performed at least as well or even better than low LTV borrowers.

Which mechanism could be behind the contrast between LTVs in US subprime mortgages and Japanese business lending?

- The key difference seems to be that in the mortgage case borrowing occurs to buy the same asset that is used as collateral whereas in the case studied here loans were collateralized by real estate but financed something else.
- In the former case it is impossible to separate what the authors call the "pricing channel" from what they call the "risk taking channel" in the latter case these two effects could in theory be separated.
- Without this separation the empirical findings would be highly counterintuitive and in direct contradiction to the theory of collateralized lending as for instance Geanakoplos and Zame 2014.

What is the macropru lesson from this paper?

- It is difficult to talk about LTV caps in general or without regard on the specific lending situation.
- The Japanese case studied here seems to be special in the sense that there is no strong direct feedback between leverage and asset pricing because the loans do not buy the assets used as collateral.
- Typically, however, in mortgage lending, in repo business in many derivative transactions this is the case.
- Therefore the evidence presented in this paper reminds us to be cautious regarding the institutional details of different lending situations but as such does not make a strong case against thinking about LTV caps as a macroprudential regulatory tool.

Network based measures of capital requirements

- The general idea of this paper is to propose a method for assigning capital requirements not bank by bank based on individual balance sheet measures but rather based on an analysis of their global network of interbank exposures. A second idea is to prioritize bailouts, if they have to be made.
- The core of the model is a network model of bank balance sheets with a rationing mechanism for future states of the system where particular promises can not be fulfilled. This model is calibrated by a very rich dataset.
- Losses occur in this model by exogenous shocks to the assets that can propagate through the network of exposures. To generate costs to the system that go beyond the exogenous shock bankruptcy costs occur along each chain of a possible domino effect.

The policy proposal

- For a given target amount of capital for the banking system as a whole use the output of the model calculation to determine at each point in time capital requirements for the institutions to minimize costs that arise from accumulating bankruptcy costs along chains of insolvencies.
- Use the model to calibrate contributions to a bailout fund and calculate a priority list for bailouts such that the costs arising from cumulative bank failures are minimized.

Would I implement a new capital regulation based on ideas in this paper?

I would not consider that for the following reasons:

- The model is extremely information intensive and relies on many steps of modeling. It is difficult if not impossible to validate the quantitative reliability of the model
- Using the model would require at each point in time (quarterly, annually, monthly?) to calculate capital requirements for all banks implement and monitor them. This has to be calculated for a given amount of capital in the system. Who determines this amount? Who monitors and implements these "optimal" capitalizations?
- This looks very much like a model of central planning and would most likely end up in a bureaucratic nightmare if implemented.

The main policy result of the paper

- Develop a theoretical model of a banking system with a network structure.
- Take network measures of "systemic risk" and study policy simulations in their effect on these measures.
- Higher cash holdings of banks decrease systemic risk according to these measures.
- Higher capital decreases systemic risk but not beyond 10 % of risk weighted assets.

The policy recommendations

- The case for a stabilizing role of higher capital is in line with many other models. It is not clear whether the network model is a necessary ingredient to make this point. For making the particular numbers credible the model is much too stylized.
- A similar point could be made about the liquidity results.
- Some aspects or assumptions made in the model are quite unclear.

Example 1: Endogenous Networks?

- The paper claims that an interbank network results from optimal decisions and equilibrium behavior.
- In fact it results from an arbitrary ex post distribution of equilibrium quantities.
- The network is an ad hoc appendix to an equilibrium problem that has nothing to do with an interbank network.

Example 2: Is there interaction between the market for non-liquid assets and the interbank market?

- Banks have to find an optimal portfolio of cash, non-liquid assets, interbank lending and borrowing and trade off these alternatives against each other.
- The analysis in the paper proceeds as if the interbank market and the market for the non-liquid asset can be cleared sequentially and independently from each other. This would however work only if these markets do not interact. But this interaction is the key element that makes this model potentially interesting.

Which paper would I take from here to a second round of policy development?

- Paper 1: This is an important paper. In a second round I would like to look deeper into the mechanisms that yield results that sound at first sight counterintuitive.
- Paper 3: I think it could be an interesting monitoring tool but I would not pursue the capital allocation procedure suggested as the main application of the model.
- Paper 2: I think this paper still needs some further work to make it really usefull for policy development and recommendations.