Discussion
Credit Crises, Precautionary Savings, and the Liquidity Trap
by Veronica Guerrieri and Guido Lorenzoni

Weerachart T. Kilenthong

RIPED, UTCC
Main Idea

- This is a very nice paper.
- It takes a standard exogenous incomplete markets model, Bewley model, to study the effects of credit crunch on interest rate and output.
- It also incorporates illiquid durable goods which can be used as collateral for loans.
- They calibrate the model and simulate interest dynamic (overshooting) and output responses.
I will focus on the model with durable/collateral.

Preferences

\[
E \left[ \sum_{t=0}^{\infty} \beta^t U(c_{it}, k_{it}, n_{it}) \right]
\]  

(1)

Budget constraints

\[
q_t b^+_{t+1} + \hat{q}_t b^-_{t+1} + g(k_{it+1}, k_{it}) + c_{it} + \tilde{\tau}_{it} \leq b_{it} + y_{it}
\]  

(2)

where the illiquidity of collateral/durable good is captured by the following adjustment cost function

\[
g(k_{it+1}, k_{it}) = k_{it+1} - k_{it} + \delta k_{it}, \text{ if } k_{it+1} \geq k_{it}
\]

(3)

\[
= (1 - \zeta)(k_{it+1} - k_{it}) + \delta k_{it}, \text{ otherwise}
\]  

(4)
Credit/Collateral constraints

\[ b_{it+1} \geq -\phi_k k_{it+1} \]  \hspace{1cm} (5)

Market clearing condition for bond/loan

\[ \int b\psi_t (b, k, \theta) = B \]  \hspace{1cm} (6)
Calibration: this paper calibrate the total supply of bond $B = 1.60$ and to match the ratio of liquid assets to GDP (1.78).

Question: the total liquid assets is the total positive holding of bond (both private and government), how come we can pick the same $B$ as in the baseline to match this?

The paper chooses $\phi_k = 0.8$. This leads to 54% debt-to-GDP which is a lot lower than the data.

Question: in this case the paper did not match the distribution of “bond”. How can we fix this? Is this part of the reason why we get positive output response (since not enough indebted households)?
Credit crunch: a permanent reduction in $\phi_k$ from 0.8 to 0.56. This is to match a 10 percentage point drop in the aggregate debt to GDP in the model.

Question: Is it reasonable to target this 10% now when the calibration cannot match debt-to GDP anyway?

Question: what is a good way to model credit crunch?

1. drop in $\phi_k$? the problem is this is endogenous and should depend on wealth distribution and other stuffs.
2. increase in spread? again it is endogenous.
This paper cannot capture price dynamic of durable/collateral. This is quite important for the crisis, I believe. How can we remedy that? Should we have distinguish between old and new capital (e.g., Coa (2011))? Should we seriously think about this model as a model of crisis? Perhaps we need to add intermediaries?
Comments/Questions

- How can a better and more detailed FFA data help?
- A detailed FFA data should help calibrate/estimate models of crisis with active intermediaries.