Discussion of Drehmann, Juselius and Korinek: Going with the Flows: the Transmission of Credit Booms

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Summary of the Paper

↑ Credit  ↑ Economic Activity

↑ Credit  ↑ Future Debt Service

↑ Future Debt Service  ↓ Future Economic Activity
What type of model and what type of “credit shocks” are consistent with the empirical findings?
Framing the Results in Context of a Model

A model of small open economy borrowing from ROW
(based on Guerrieri and Iacoviello, JME 2017)

$$\max \sum_{t=0}^{\infty} \beta^t (u(c_t) + u(h_t))$$

$$c_t + q_t h_t = y_t + b_t - s_t + q_t h_{t-1} (1 - \delta_h)$$

$$d_t = b_t + (1 - \delta) d_{t-1}$$

$$b_t \leq mq_t h_t + zy_t$$

$$s_t = (\delta + R_{t-1} - 1) d_{t-1}$$

Assume $q$ follows AR(1) exogenous process in order to close the model.
Fix $R_t = \overline{R}$ and $y_t = 1$
**Small $\beta$: The Constraint Binds**

Assume small $\beta$, infinite adj cost on $h$, $\delta_h = 0$ and $y_t = 1$

Model simplifies a bit

$$\max \sum_{t=0}^{\infty} \beta^t (u(c_t) + u(h_t))$$

$$c_t = y_t + b_t - s_t$$

$$d_t = b_t + (1 - \delta) d_{t-1}$$

$$b_t = mq_t \bar{h} + z$$

$$s_t = (\delta + R_{t-1} - 1) d_{t-1}$$

Asset price shocks look like the credit shocks in paper
Short-term debt and binding constraint

1. House Price ($q$)

2. Consumption

3. New Debt ($b$)

4. Debt Service ($s$)

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Discussion of DJK

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LONG-TERM DEBT AND BINDING CONSTRAINT

1. House Price (q)

2. Consumption

3. New Debt (b)

4. Debt Service (s)
**Large $\beta$: the constraint may not bind in booms**

Assume now $\beta$ close enough to $1/R$, consider again an expansionary credit shock

$$\max \sum_{t=0}^{\infty} \beta^t (u(c_t) + u(h_t))$$

$$c_t = y_t + b_t - s_t$$

$$d_t = b_t + (1 - \delta) d_{t-1}$$

$$b_t < mq_t \bar{h} + z \text{ and } u'(c_t) = \beta RE_t u'(c_{t+1})$$

$$s_t = (\delta + R_{t-1} - 1) d_{t-1}$$

Asset price shocks generate different dynamics.
Short-term debt and non-binding constraint

1. House Price (q)
   - Linear
   - Nonlinear
   - Percent

2. Consumption
   - Percent
   - Time

3. New Debt (b)
   - Percent of Y
   - Time

4. Debt Service (s)
   - Percent of Y
   - Time
1. House Price (q)

2. Consumption

3. New Debt (b)

4. Debt Service (s)
Consider now credit dynamics following an income shock

Income shock may affect budget and borrowing constraint simultaneously

\[ c_t = y_t + b_t - s_t \]

\[ b_t \leq m\bar{q}h + zy_t \]
Non-binding Constraint and Income Shock

1. Income
   - Linear
   - Nonlinear

2. Consumption

3. New Debt (b)

4. Debt Service (s)
**Conclusions**

This is a great paper. It has simple but profound insights.

The joint dynamics of debt, debt service, income and consumption may help distinguishing between competing theories of credit and the business cycles.

How debt, income and consumption comove depends on the shocks and the underlying model.