The big question addressed in this paper:

Can collateral (credit) constraints amplify business cycle and asset price fluctuations?

Answer: YES.
Outline

- Model.
- Main results.
- Related literature and open questions.
Model

Physical environment and agents:

- Pure exchange, \( \infty \) horizon economy.
- Cash-flow identical Lucas trees.
- Epstein-Zin agents heterogeneous in preferences, endowment streams and initial asset holdings.
Asset markets:

- Shares in Lucas trees (cannot go short).

- ‘Riskless’ bonds:
  - heterogeneous in collateral requirements (endogenous),
  - heterogeneous in default probability (endogenous),
  - default cost \( \lambda \),
  - no punishment for default.
Equilibrium Comparison

- Benchmark: single bond w/o default.

- Endo collateral requirements: WLOG consider $S - 1$ bonds.

- Exo capital-to-value (margin) ratios $\Rightarrow$ (different) endogenous collateral requirements.
Quantitative Analysis

- 2 (types of) agents:
  - 10% of less risk-averse agents,
  - 90% of more risk-averse agents.
  - Why these numbers? What are they calibrated to match?

- 8% of per period endowment divided through dividends.

- I.i.d. disaster states à la Barro and Jin (2009).
Single Tree Model Results

- Fairly large asset return volatility even in the standard incomplete markets model, coming from disasters?

- Added asset return volatility with collateral constraints.

- Single vs. multiple bonds and costly default seem to play minor role.

- (State dependent) margin regulation decreases volatility significantly.
Two Equal Cash Flow Tree Results

- 2 trees of equal size, 4%.

- Tree 1 can (≈ housing), tree 2 cannot (≈ stocks) be used as collateral, proceed w/o default.

- Quantitatively significant collateral premium.

- Overall lower return volatility, in particular for tree 1.

- Margin regulation of tree 2 affects return volatility of both trees, decreases for tree 1.
Persistent income processes?

Data comparison? S&P500 versus housing versus aggregate stock market?

Interesting and possibly policy relevant.
  - BGKS ask: How to decrease volatility?
  - Q1: Why is that good? Welfare comparison?
  - Q2: Other policy options? Provide more collateral?

What if the amount of collateral was not fixed (endowment vs. production economies)?


What does ‘work’?

- Nezafat, Slavik (2010): financial shocks, collateralizability shocks; works for asset prices and investment, not for output.

But this is not your ballpark!
Your model is a pure exchange economy (no production).

You cannot really analyze *business cycle* fluctuations.

Question: would your results carry over?

Mechanisms that ‘work’ in pure exchange, but not in production economies.

- Habit persistence (Campbell and Cochrane, 1999, vs. Lettau and Uhlig, 2000)
Disasters?

Gourio (2011): financial frictions (limited enforcement and default) propagate changes in disaster risk probability, but:

- Disasters very severe: TFP and stock of K↓ by 50% (similar to BGKS).
- Need disasters to *happen* to get asset price volatility.

Questions:

- What happens in your model in sample paths w/o disasters?
- What happens in your model w/o disasters?
- How would your results change with production?

Gourio’s results suggest you should get some action as well.
Summary

- Nice paper addressing an important question and offering interesting answers.

Most important conclusions:
- Large asset return volatility arising from financial frictions and disasters.
- Margin policies can decrease volatility.

Suggestions:
- Tighter link to the data.
- More explicit policy analysis.
- Add production?


Default Cost Specification

- Let \( f_j(s^t) \) be the payout (1 if no default).

- With default, \( f_j(s^t) < 1 \) is the collateral value and default costs (borne by the lender) and net payout are:

\[
 l_j(s^t) = \lambda \left[ 1 - f_j(s^t) \right] \\
 r_j(s^t) = \max\{0, f_j(s^t) - l_j(s^t)\}
\]

- BGKS say: Convenient because continuous.
Default Cost Specification

Questions:

- Why default costs decreasing in $f_j(s^t)$?
- Who bears the costs when $f_j(s^t) - l_j(s^t) < 0$?
- Why default costs borne by the lender?
- What are the costs supposed to represent/measure?
- Interestingly: don’t seem to matter quantitatively.
Default costs decreasing in $f_j(s^t)$:
Who bears the costs when $f_j(s^t) - l_j(s^t) < 0$: 

![Graph showing net payout vs. gross payout for different values of lambda.](image)

Legend:
- Blue: $f - l$, lambda = 0
- Red: $f - l$, lambda = 0.01
- Green: $f - l$, lambda = 0.05
- Purple: $f - l$, lambda = 0.1
- Teal: $f - l$, lambda = 0.2
- Orange: $f - l$, lambda = 0.25
The ‘true’, paid default costs: