Comments: Caballero & Krishnamurthy

Financial System Risk and Flight to Quality

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Federal Reserve Board
Very nice paper

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- Ripe for *nonstandard* methods
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- Ripe for *nonstandard* methods
  - Involves “liquidity” . . .
    - . . . which is complex and ill-defined
  - Crisis are low pr. events . . .
    - . . . and people do badly with these
Got right answer
Find ways to guarantee liquidity provision when it is most needed
This discussion

- Treatment of *liquidity* and low pr. events
- Simple analogous model
Issues: Is this liquidity?

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- Basic structure:
  - ♦ Agents overweight certain events
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  - ♦ Solution: get more stuff
- Unique aspects of liq. may make the pol. advice more compelling
Illustration: Friedman in disguise?

- Friedman rule:
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  - Liq. produced at zero marg. cost
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- This paper
  - No cost of producing/storing extra liq.
  - No marginal value of liq. in non-crisis
  - First best if $Z \geq \bar{Z}$
Suggestion

Add discussion of liq. and where it comes from
Issues: Low pr. events

- Paper argues robust decisionmaking realistic
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  - Plausible
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  - People do mess up low pr. events
- But details may matter
Examples

- VAR may be opposite of robust—ignores utility in tail
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- Do agents overprepare for disaster?
- Model world needs little prudential reg.
Suggestions

- Discuss low pr. event literature
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- Nice framework for exploring distorted pr. more generally
Simple model

- Two agents on island...
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- With 10,000 chickens . . .
Simple model

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- and \( Z \) units of Tamiflu
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- Flu-state utility is

\[
\ln(c)
\]

\( c \) is quantity of Tamiflu
2-stage budgeting, exog.

- Non-flu-state spending fixed exog.
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- Non-flu-state spending fixed exog.
- Spend $w_0$ on flu states
Agent A’s flu-states

- Cond. on getting flu, only issue is $1^{st}$ or $2^{nd}$
Agent A’s flu-states

- Cond. on getting flu, only issue is 1st or 2nd
- Define $\text{pr}(A \text{ first}|A \text{ gets flu}) = \pi_1$
Agent A’s flu-states

- Cond. on getting flu, only issue is 1\textsuperscript{st} or 2\textsuperscript{nd}
- Define \( \text{pr}(A \text{ first}|A \text{ gets flu}) = \pi_1 \)
- Define \( \pi_2 = 1 - \pi_1 \)
A’s flu problem

\[
\max \pi_1 \ln(x) + \pi_2 \ln(y) \\
\text{s.t. } w_0 \geq px + qy
\]
A’s flu problem

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Benchmark. Cobb-Douglas \( \Rightarrow \) \( \pi \)s are budget shares:

\[ \frac{px}{qy} = \frac{\pi_1}{\pi_2} \]
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- Benchmark. Cobb-Douglas \( \Rightarrow \) \( \pi \)s are budget shares:
  \[ \frac{px}{qy} = \frac{\pi_1}{\pi_2} \]

- If supply side implies \( p = q \):
  \[ \frac{x}{y} = \frac{\pi_1}{\pi_2} \]
Robustness with $p = q$

- A knows only: $\pi_1 \in [\underline{\pi}_1, \bar{\pi}_1]$
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- Nasty nature will max. the pr. of state with smaller consump.
Robustness with $p = q$

- A knows only: $\pi_1 \in [\underline{\pi}_1, \bar{\pi}_1]$
- Suppose A’s chooses $(x, y)$
- Nasty nature will max. the pr. of state with smaller consump.
- 2 cases, either $1/2 \in [\underline{\pi}_1, \bar{\pi}_1]$, or not
Case 1: $\frac{1}{2} < \pi_1$

- Getting flu $1^{st}$ robustly most likely, so $x > y$. 
Case 1: \( \frac{1}{2} < \pi_1 \)

- Getting flu 1\(^{st}\) robustly most likely, so \( x > y \).
- Nature chooses \( \pi_1 = \pi_1 \), to min. pr. of state 1.
Case 1: $\frac{1}{2} < \pi_1$

- Getting flu 1st robustly most likely, so $x > y$.
- Nature chooses $\pi_1 = \bar{\pi}_1$, to min. pr. of state 1.
- Thus: $\frac{x}{y} = \frac{\pi_1}{1-\pi_1}$
Case 2: \( \frac{1}{2} \in [\underline{\pi}_1, \overline{\pi}_1] \)

- Neither 1\textsuperscript{st} or 2\textsuperscript{nd} robustly most likely
Case 2: \( \frac{1}{2} \in [\pi_1, \bar{\pi}_1] \)

- Neither 1\(^{st}\) or 2\(^{nd}\) robustly most likely
- Choose \( x = y \): fully robust
Comments

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Suggestion: simplify the model
Main lessons

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