Discussion of:

*Liquidity Trap and Excessive Leverage*

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The issue

- Much recent discussion of macroprudential policies
  - aim to limit debt/leverage/risk during good times
  - and thereby minimize “problems” during a crisis

- The underlying rationale for proposals is not always completely clear
  - sometimes related to bailouts (socialization of losses)
  - or fire sales (a type of pecuniary externality)
  - sometimes related to “aggregate demand”
    - when I decrease my spending in a crisis, it lowers your income …

- Can these arguments be justified in reasonable economic models?
  - what are the implicit assumptions behind each one?
What the paper does

- Presents a model with three key ingredients
  - production and consumption
  - a pattern of debt constraints that generates “deleveraging”
  - a lower bound on the real interest rate
- Shows that when the lower bound is binding in some period, the equilibrium is constrained inefficient
  - identifies the source of inefficiency as an externality in aggregate demand
  - interestingly, uncertainty (shocks) are not necessary
- Shows how (macroprudential) debt limits can be Pareto improving
  - and are superior to using monetary policy to “lean against the wind”
Interesting paper

Part of a growing literature focusing on ex ante policy
  - Farhi & Werning (2014), Korinek (2014), and others

Model seems fairly simple, intuitive
  - but there are some subtle things going on

My plan

- Try to illustrate (part of) the key mechanism in a simpler (?) model
- Offer some comments/questions
A two-period model

- **Preferences:** \( u(c_1^i, n_1^i) + \beta_i u(c_2^i, n_2^i) \) for \( i = B, L \)

- **Technologies:** \( \sum_i c_t^i \leq A \sum_i n_t^i \)

- **Budget constraints:**
  \[
  c_1^i \leq w_1 n_1^i + d^i \\
  c_2^i \leq w_2 n_2^i - (1 + r)d^i
  \]
An efficient allocation
Debt limit: causes “deleveraging”

\[ d_i \leq \bar{d} \implies c_1^B \leq \bar{c} \]
Deleveraging with flexible prices

Still have productive efficiency

Interest rate falls so that \( L \) consumes more at \( t = 1 \)

Resulting allocation is Pareto inferior … but constrained efficient
Deleveraging with a lower bound

Now suppose the interest rate cannot fall. Then $L$ does not want to consume more at $t = 1$ and $B$ cannot consume more.

"shortfall" in demand for $c_1$.

$\Rightarrow$ total demand for $c_1$ is less than $c_1^*$. 
Deleveraging with a lower bound

Production must fall below $c_1^*$ …

… so labor input and labor income fall as well…

… which shifts budget lines inward and further decreases agents’ demand

Lose productive efficiency!
The point

- With no lower bound on $r$, the impact of deleveraging is limited
  - consumption is misallocated (MRS are not equated)
  - but that is unavoidable (because of the debt limit)
  - productive efficiency is not disturbed (under some assumptions)

- With the lower bound, the situation becomes worse
  - distortion spreads to production; has knock-on effects

- Suppose $B$ can take action to affect the severity of deleveraging
  - with flexible $r$, affects the allocation of consumption at $t = 1$ through its effect on the interest rate
  - with lower bound, affects total consumption, at $t = 1$
    - source of the role for limiting ex ante actions (i.e., $t = 0$ debt limits)
Main result

- Paper shows that imposing a $t = 0$ debt limit (limiting $B$’s actions) can implement constrained efficient allocations

Comments

- Interesting paper
  - model does a nice job of isolating a particular phenomenon

Q: What do we want to take away from it?

- Other policy options;
  - think about the constraints in “constrained efficiency”
- Patterns in desired debt limits
  - over time, across households
Other policy options

- Not completely clear how debt limits on households would be implemented in practice
  - need to restrict all sources of borrowing

- Are there other ways to implement the desired outcome?

- Would a time-varying consumption tax work?
  - directly changes the relative price of $c_1$ and $c_2$
  - raises some commitment issues (sales tax hike in Japan), but …
  - seems like it can do better than the debt-limit policy

- Constrained efficiency result depends very much on what is allowed
  - are debt limits more feasible than other policies?
Desired debt limits over time...

- Paper emphasizes the importance of smoothing debt over time
  - if limit will be tight tomorrow, want debt to be lower today
    - to lessen deleveraging tomorrow, which lowers consumption, demand

- How would this play out in a more dynamic, stochastic setting?

- If the deleveraging episode is two periods away, should we:
  - gradually tighten the prudential debt limit?
  - move directly to the desired limit today? Or just wait until tomorrow?

- How should debt-limit policy tend move over the business cycle?
  - would a single, time-invariant limit be effective?
  - seems likely to depend on foreign economic conditions (exports)
... and in the cross-section

- In an environment with many types of heterogeneity ...
  - wealth, skill levels, employment status (and history)

- ... what would the optimal pattern of debt limits look like?

- Would a single maximum debt-to-asset ratio work?

- Or would we want different ratios for different household types?
  - suppose someone has a relatively high probability of becoming employed in bad aggregate states…

Summary

- Nice paper; makes a clear point

- A lot of interesting issues here for further thought