Discussion of:

# *Liquidity Trap and Excessive Leverage*

by Anton Korinek and Alp Simsek

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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: $\qquad u\left(c_1^i, n_1^i\right) + \beta_i u(c_2^i, n_2^i)$  for $i = B, L$
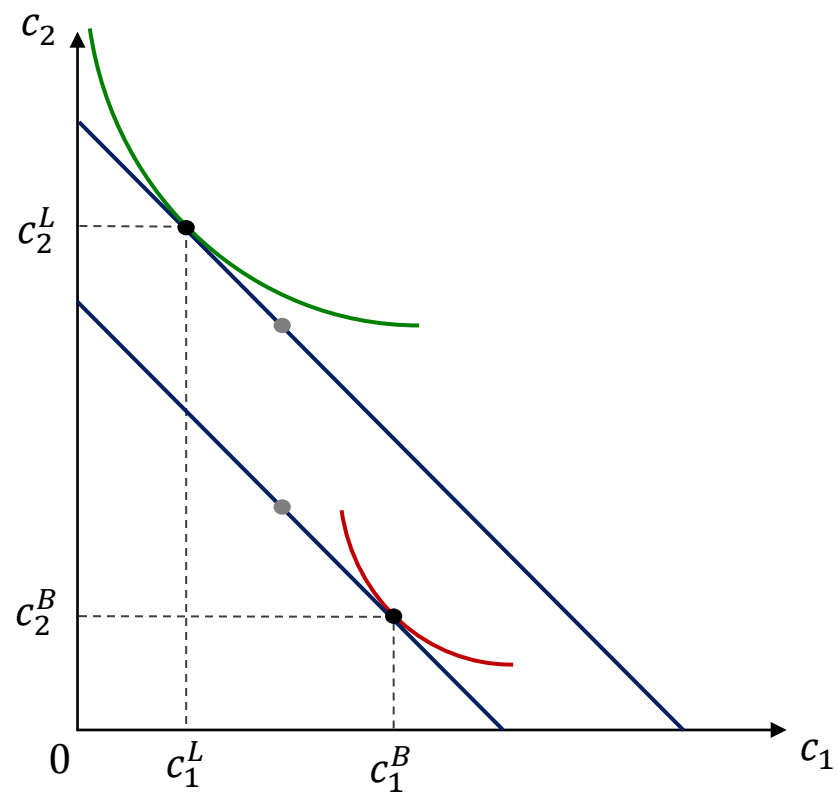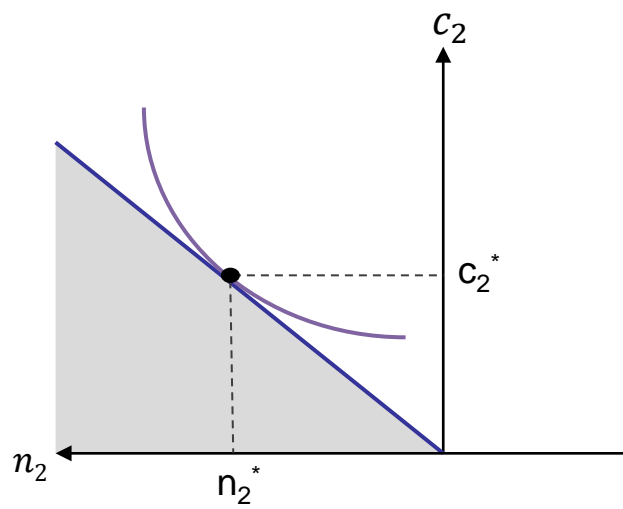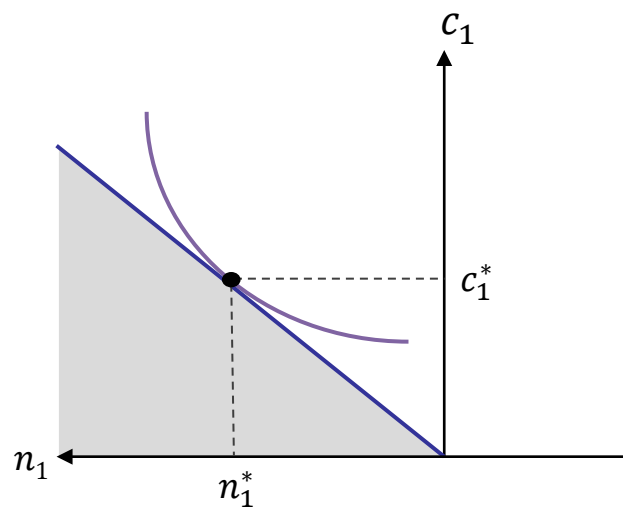
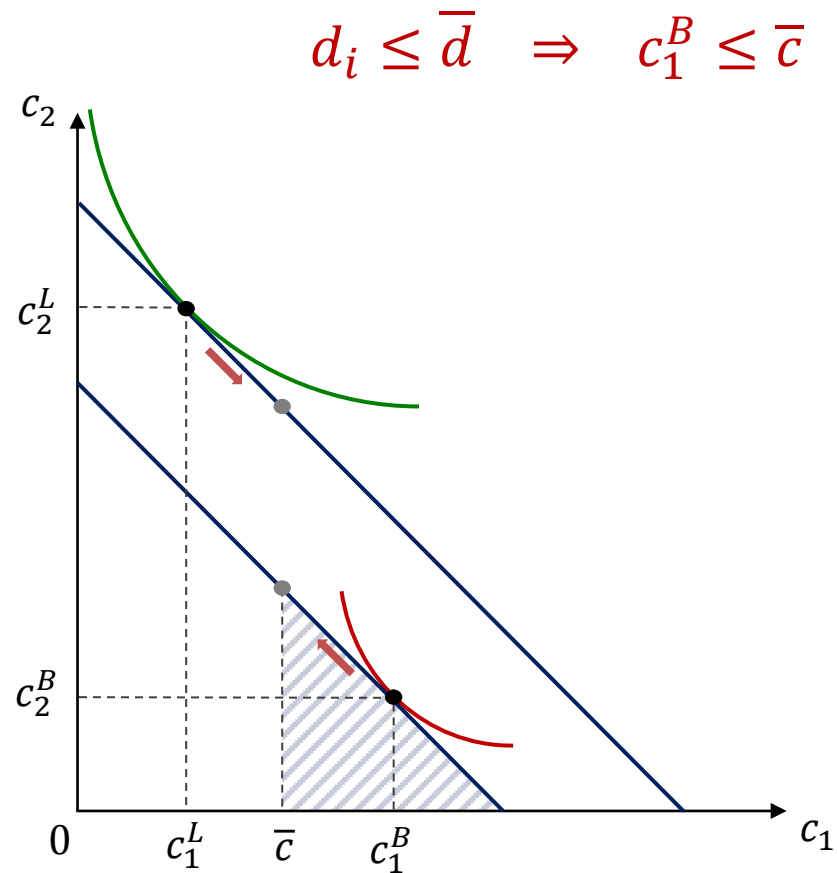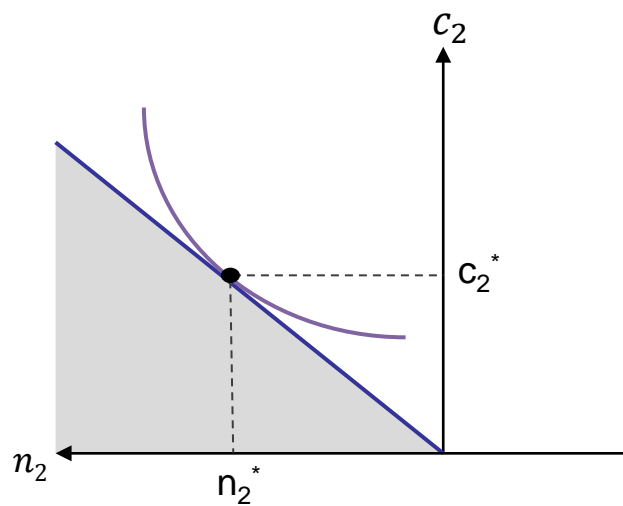▸ Technologies: $\qquad \sum_i c_t^i \leq A \sum_i n_t^i$
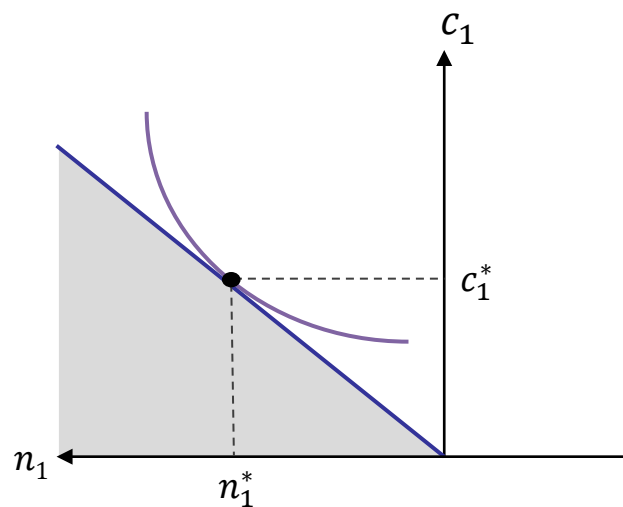
▸ Budget constraints:
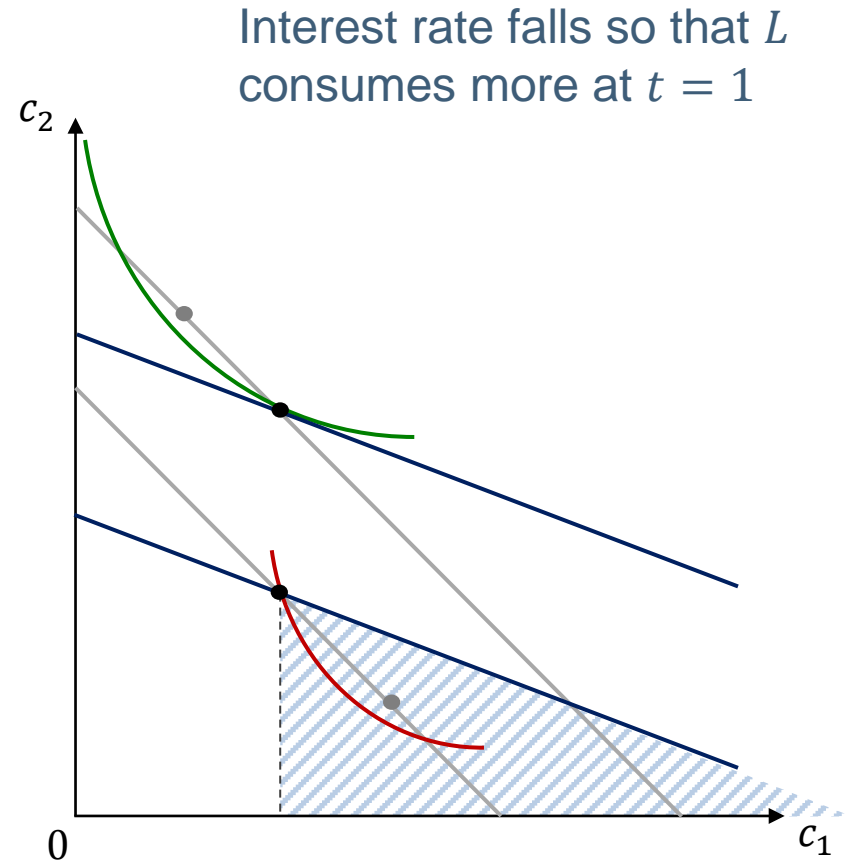
$$c_1^i \leq w_1 n_1^i + d^i$$

$$c_2^i \leq w_2 n_2^i - (1+r)d^i$$

# An efficient allocation

# Debt limit: causes "deleveraging"



$$d_i \leq \overline{d} \quad \Rightarrow \quad c_1^B \leq \overline{c}$$

# Deleveraging with flexible prices



$c_1$

$c_1^*$

$n_1$   $n_1^*$

Still have productive efficiency

$c_2$

$c_2^*$

$n_2$   $n_2^*$

Interest rate falls so that $L$ consumes more at $t = 1$

$c_2$

0   $c_1$
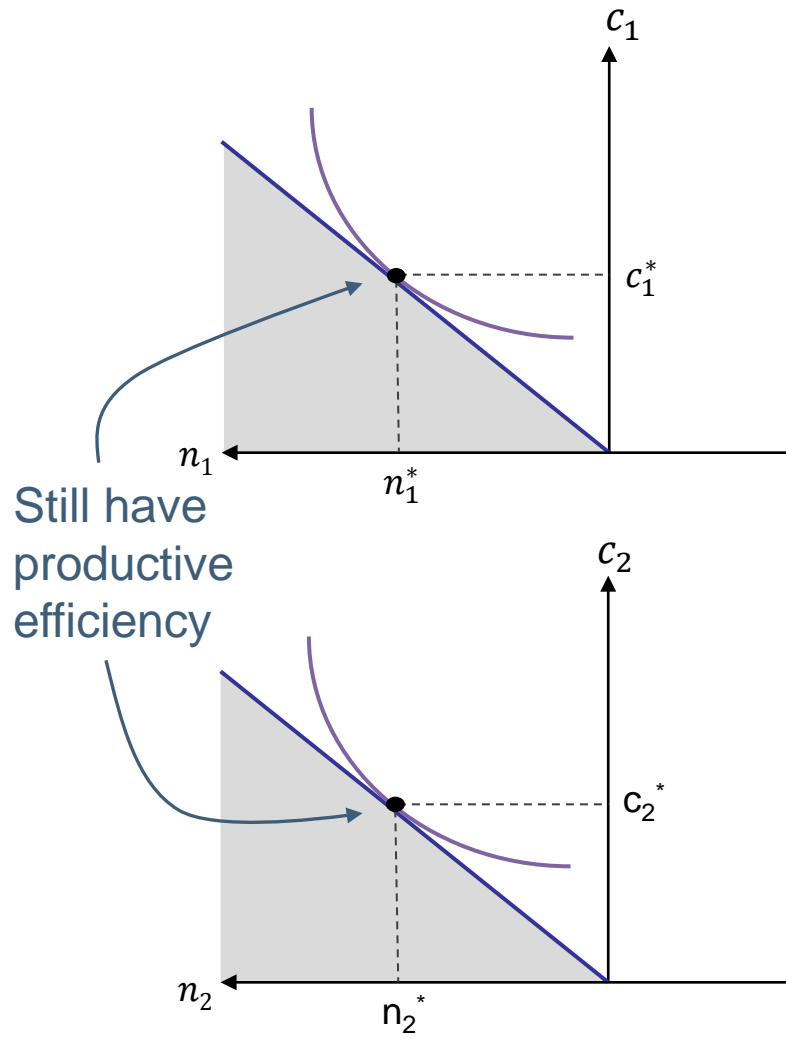
Resulting allocation is Pareto inferior … but constrained efficient

# Deleveraging with a lower bound



$c_1$

$c_1^*$

$n_1$

$n_1^*$

$c_2$

$c_2^*$

$n_2$

$n_2^*$
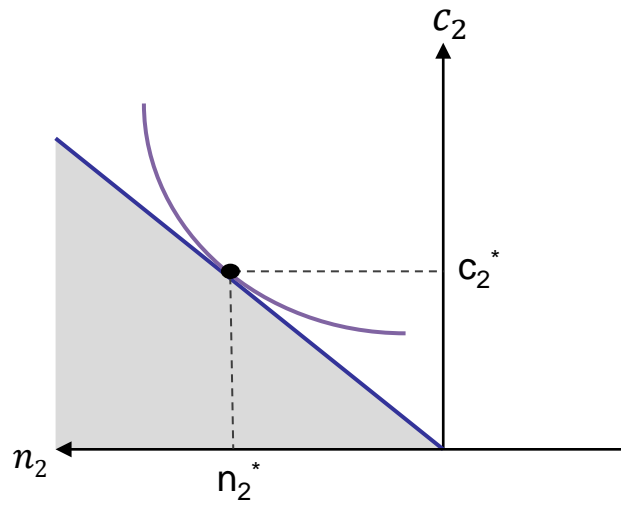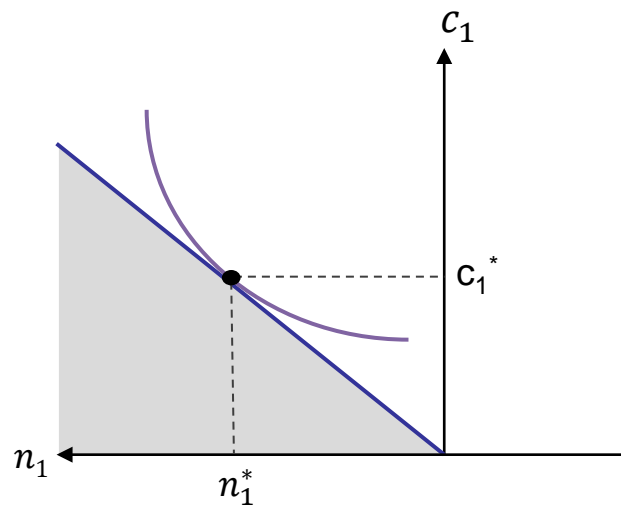
Now suppose the interest rate cannot fall
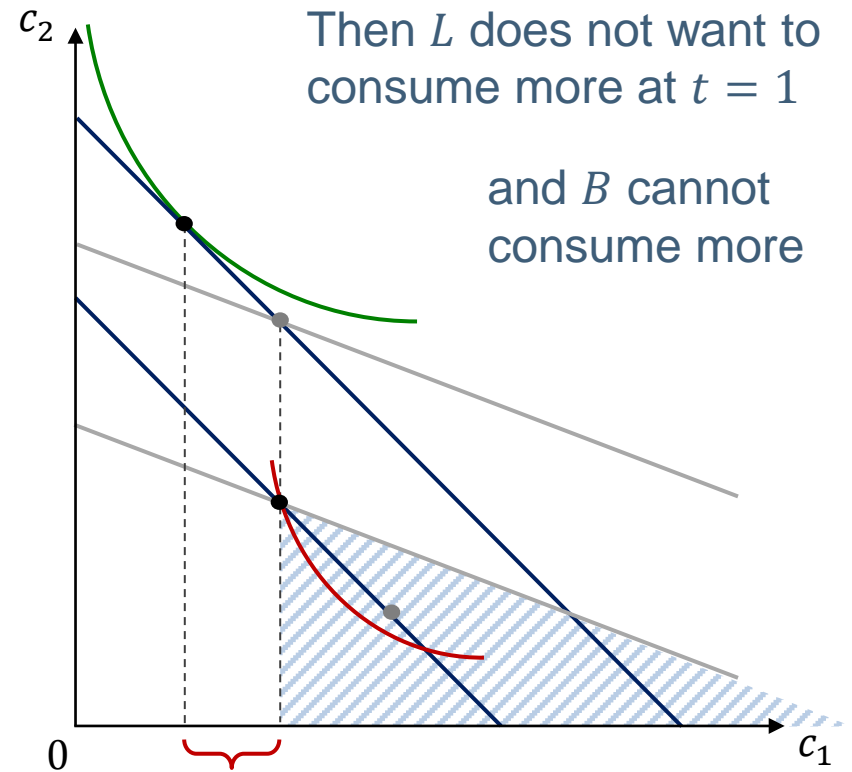
Then $L$ does not want to consume more at $t = 1$

and $B$ cannot consume more

$c_2$

$0$

$c_1$

"shortfall" in demand for $c_1$

$\Rightarrow$ total demand for $c_1$ is less than $c_1^*$

# Deleveraging with a lower bound



$c_1$

$c_1^*$

$c_1$

$n_1$

$n_1^*$   $n_1$
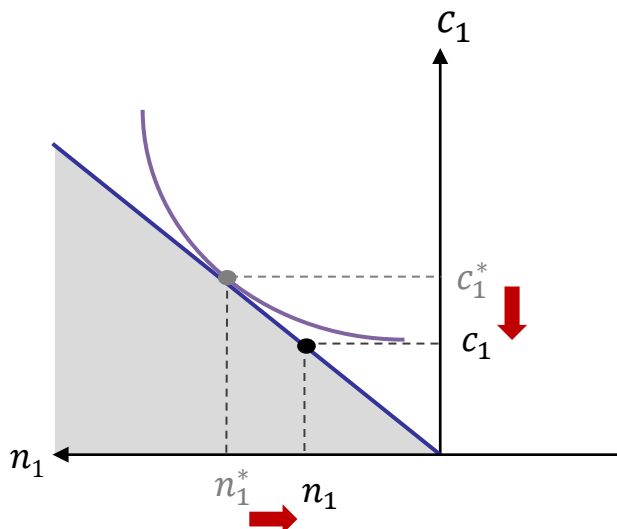
Lose productive efficiency!

$c_2$

$c_2^*$

$n_2$

$n_2^*$
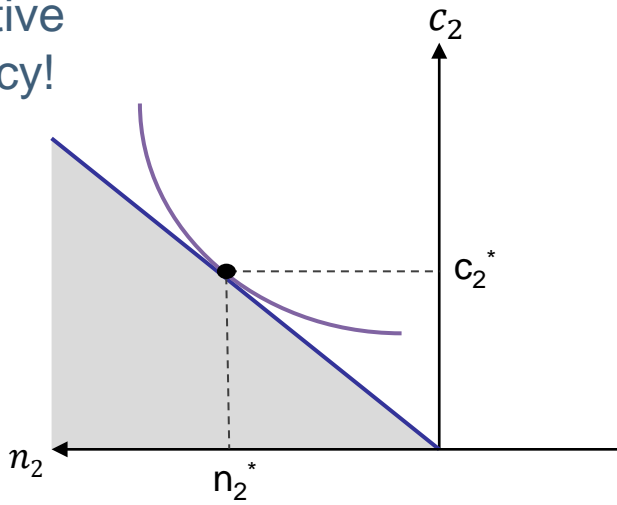
Production must fall below $c_1^*$ …
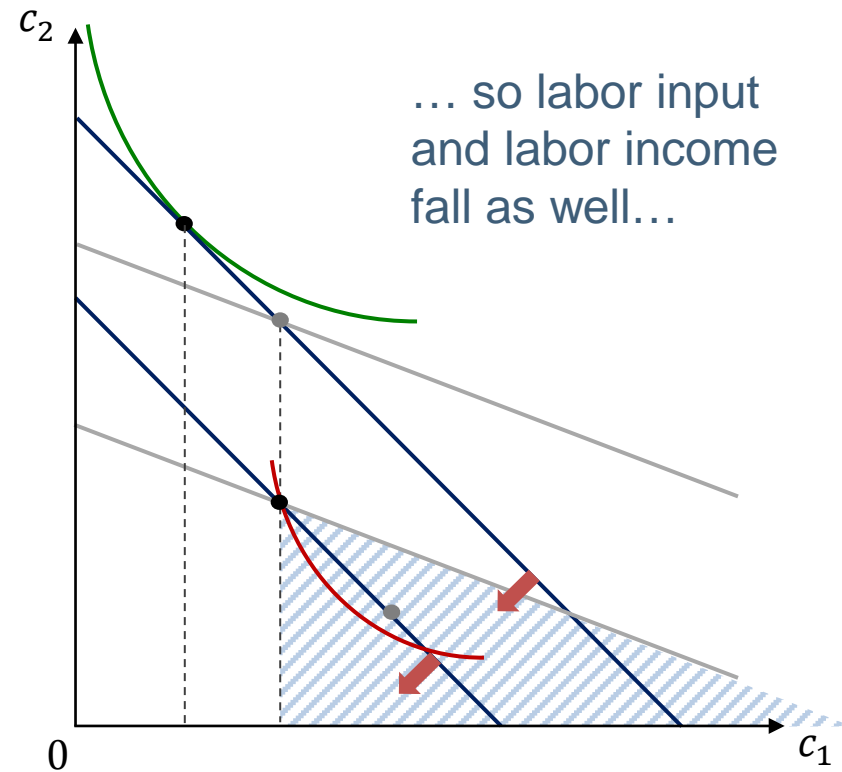
… so labor input and labor income fall as well…

$c_2$

0

$c_1$

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

# 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