Comments on
Revisiting Overborrowing and its Policy Implications
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The paper

- Evaluates scope for (ex-ante) macro-prudential policy and (ex-post) public intervention during episodes of sudden stop.

- SOE model with:
  - two-sector production
  - incomplete international financial markets
  - occasionally binding collateral constraint
  - credit externality

- Quantifies inefficient borrowing by comparing the competitive equilibrium (CE) with the constrained-efficient allocation (SP).
My discussion

- Summarize key features of the model
  - Amplification and sudden stops
  - Inefficient borrowing

- Comments
  - Productivity vs financial shocks
  - Collateral constraint
  - Policy implications
Amplification and sudden stops

- Recall that in CE:

\[ \mu_t = U_{CT}(t) \]

\[ \mu_t = \lambda_t + \beta (1 + i) E_t \mu_{t+1} \]

\[ P_N^t = P^N \left( \frac{C_T^t}{H_N^t} \right) \]

- Suppose \( \downarrow A_T^t \Rightarrow \) tighter constraint \( \Rightarrow \) \( \uparrow \mu_t, \downarrow C_T^t, \downarrow P_N^t \).

Sectoral reallocation: \( \uparrow H_T^t, \downarrow H_N^t \Rightarrow \downarrow C_N^t \).
If goods complements, \( C_T^t \downarrow \) further, amplifying initial effect.

- Sudden stops (when constraint binds) possible.
Inefficient borrowing: credit externality

Marginal utility of savings is higher (borrowing lower) in SP than CE.

- **CE:**

\[
\mu_t = \lambda_t + \beta (1 + i) E_t \mu_{t+1} \\
\mu_t = U_{CT} (t)
\]

- **SP:**

\[
\mu_{1,t}^{sp} = \lambda_t^{sp} + \beta (1 + i) E_t \mu_{1,t+1}^{sp} \\
\mu_{1,t}^{sp} = U_{CT} (t) + \lambda_t^{sp} \frac{1 - \phi}{\phi} \left( \frac{\partial P_t^N}{\partial C_t^T} \right) \geq \mu_t
\]

- $\mu_{1,t}^{sp} > \mu_t$ generates higher $C_t^T$ and **overborrowing** in CE.
Inefficient borrowing: labor supply

When the constraint does not bind

\[ U_C(t) H_t^{δ-1} = \mu_{1,t}^{sp} MPL_T^T \geq \mu_t MPL_T^T. \]

- If \( \downarrow A_t^T \Rightarrow \uparrow \mu_t, \uparrow H_t, \uparrow H_t^T, \uparrow H_t^N, \uparrow C_t^N \). If goods are complements, \( \uparrow C_t^T \). If \( \uparrow C_t^T > \uparrow Y_t^T \), \( \uparrow \) borrowing.

- Because \( \mu_{1,t}^{sp} > \mu_t \), effect is higher in SP than in CE.

- **Underborrowing** in CE.
Inefficient borrowing: labor reallocation

- If $A_t^T \Rightarrow P_t^N$. Sectoral reallocation implies $H_t^T$, $H_t^N \Rightarrow C_t^N$. If goods are complement, $C_t^T$ and borrowing.

- Because $\mu_{sp}^{1,t} > \mu_t$, effects are larger in SP $\Rightarrow \downarrow \downarrow$ borrowing.

- Overborrowing in CE.
Main results

- In the calibrated model, there is underborrowing both in normal times and when the constraint binds.

- Differences in average borrowing are small, but the probability of a crisis is much smaller in SP (0.007\%) than in CE (1.6\%).

- Overall welfare gain of inducing efficient borrowing is small, but it is high during sudden stops.
Sudden stop is driven by a negative technology shock.

Is this key to generate large movement in $P_t^N$ and amplification of the initial shock?

$$P_t^N = \frac{(1 - \omega)^{\frac{1}{\kappa}} (C_t^N)^{-\frac{1}{\kappa}}}{\omega^{\frac{1}{\kappa}} (C^T)^{-\frac{1}{\kappa}}}$$

First effect: $\downarrow A_t^T \Rightarrow$ for given $P_t^N$, $\downarrow H_t^T$, $\uparrow H_t^N$. $\Rightarrow \uparrow C_t^N \downarrow P_t^N$.

Second effect: $\downarrow A_t^T \Rightarrow \uparrow \mu_t$, $\downarrow C_t^T \Rightarrow \downarrow P_t^N$.

Both effects lower $P_t^N$ and tend to amplify the shock.
Comment 1: Shocks

- What about a financial shock (e.g. a fall in the ability to seize borrowers’ income)?
  Only the second effect arises: \( \frac{1-\phi}{\phi} \Rightarrow \mu_t, \downarrow C_t^T \Rightarrow \downarrow P_t^N \).

- Too small to produce sudden stop?

- Would be useful to show that the model can account for the recent crisis, if aim is to evaluate macro-prudential policy.
Comment 2: Collateral constraint

- Collateral constraint: debt limit that arises when lenders cannot enforce repayments and debtors can run away.

- Standard formulation with value of assets

\[(1 + i) B_{t+1} \geq -\kappa q_{t+1} K_t, \quad \kappa \leq 1.\]
Comment 2: Collateral constraint

Here, current income is treated as collateral

\[ B_{t+1} \geq - \frac{1 - \phi}{\phi} \left[ \pi_t + W_t H_t \right]. \]

How to think about it? If \( \frac{1 - \phi}{\phi} < 1 \), consumption cannot be higher than when paying with income and making zero debt.

In the numerical analysis, \( \omega, \kappa \) and \( \phi \) are set to match data targets. Resulting value is \( \phi = .46 \), implying that \( \frac{1 - \phi}{\phi} > 1 \)!
Comment 2: Collateral constraint

- Would the results survive to a collateral constraint specified in terms of future income?

\[ (1 + i) B_{t+1} \geq - \bar{\kappa} E_t [\pi_{t+1} + W_{t+1} H_{t+1}] \cdot \]

- A large but temporary shock hitting today would not tighten the constraint much. This shock could have smaller amplification, and the probability of a sudden stop be lower.

- Saving decisions would affect the discount factor through changes in \( C_t \).
Comment 3: Policy implications

- Not fully discussed in the current draft.

- Numerical results:
  - In CE: $H$, $Y$ and $C$ increase during sudden stops and reach levels higher than in normal times!
  - In periods of crisis, SP reduces $C$, $H$ and $Y$ relative to CE!

- Working capital in the collateral constraint might help.
Comment 3: Policy implications

- In this model, lenders always get back the funds. Scope for macro-prudential policy is to induce agents to take the constrained-efficient level of debt.

- In policy debate, scope for macro-prudential policies is to limit systemic risk and its spillovers to the macroeconomy.

- Need to evaluate macro-prudential policies in models with default risk, where interlinkages among lenders can amplify the effect of such risk.
Conclusions

- Very interesting paper. Still preliminary.
- Need to check robustness of the results to
  - specification of the collateral constraint: income vs asset, current vs future value, working capital assumption
  - source of the shock: TFP or financial
- We cannot dismiss macro-prudential policy on the basis of a model where lenders always get back their funds. Need to consider models of aggregate risk and contagion.