Comment on Aoki, Benigno and Kiyotaki, “Monetary and Financial Policies in Emerging Markets”

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Model

- Small open economy faces downward-sloped demand curve for its exports.

- Production: standard New Keynesian Dixit-Stiglitz setup.

Banks:
- Own and rent out capital services
- Finance purchase of capital by borrowing:
  - in dollars, exclusively from foreigners
  - in domestic currency, exclusively from domestic residents.
- Live outside protective umbrella of a central bank (Shadow Banks).

Households:
- make deposits in banks
- supply labor
- buy and rent capital, but they are less efficient than Shadow Banks at managing it
  - this is the part of the banking system that is under the central bank protection.
Financial Frictions

- Agency problems inside banks:
  - Banks have the opportunity to run away with a fraction, $\Theta$, of the assets, $A$:
    \[ A = \text{net worth (}N\text{)} + \text{deposits (}d\text{)}. \]
  - They would run away if their leverage ever exceeded a critical level, say $L^\star$.
    \[ \text{leverage, } L \equiv \frac{A}{N} = \frac{d + N}{N}. \]
  - $\Theta$ is bigger when they borrow dollars.
  - Assume it’s easier to run away with foreigners’ money.
Financial Frictions: Participation Constraint

- Creditors know everything a bank plans to do in the current period.
  - They would make zero deposits in a bank which plans to exceed the critical level of leverage, $L^\ast$.

- So, banks never consider a level of borrowing that violates $L^\ast$.
  - Participation constraint.

- In equilibrium,
  - banks regulate themselves.
  - creditors view banks as perfectly safe.
What ABK Do

- Consider stabilizing effects of taxes on net worth, capital and foreign deposits.
- Provide a theory of why in emerging market countries, dollar rates are lower on average than domestic currency rates.
  - Theory of failure of UIP.
My Comments/Questions

- Some general questions about the financial frictions.
- A question about the model’s theory of the violation of UIP.
- Some broader questions.
Greatly Simplified ABK Loan Market with No Financial Frictions

- Closed, two period economy.
- Households in first period: An upward-sloping supply of funds.
- Banks:
  - Issue as many deposits as they want, regardless of how much net worth, \( N \), they have.
  - Assets generate a fixed return, \( R^k \).
Competitive Banking System with No Financial Friction

Bank has access to a project with fixed rate of return, $R^k$ net of costs.

Equilibrium, $R = R^k$

Zero profits on deposits

Household supply of $d$

Bank demand for $d$
Bankers can run away with a fraction of bank assets.

For $R < R^k$ bank no longer can issue unlimited deposits.

As $R$ falls, leverage restriction relaxes because bank makes more profits staying in business.
Competitive Banking System with Financial Friction

Bank has access to a project with fixed rate of return, $R^k$.

Equilibrium $R < R^k$
Positive profits on deposits

Household supply of $d$
Bank demand for $d$
Competitive Banking System with Financial Friction

Bank has access to a project with fixed rate of return, $R^k$.

Equilibrium $R < R^k$

More profits on deposits

Financial frictions increase, $\Theta' > \Theta$

Household supply of $d$

Bank demand for $d$
Are these the right frictions from the point of view of data?

- In the data:
  - Consider times when financial frictions become tighter (i.e., $\Theta$ increases and/or bank equity, $N$, falls):
    - Does the return on bank deposits rise, like in the model?
    - Does the interest rate premium on bank deposits remain at zero, like in the model? (no).

- If we take the model seriously, and imagine that banks make pure profits
  - How do we explain the absence of entry?
  - Through eyes of the model, outsiders with net worth have an incentive to enter.
    - Earn $R^k$ on their net worth, and make pure profits on deposits.
Theory of UIP Failure

- In the model, easier for banks to run away with dollar deposits than with domestic deposits.

  - So, participation constraint especially binding on foreign currency borrowing.

  - Borrowing in local currency drives up local currency interest rate, $R$, relative to foreign, $R^*$ (adjusted for expected exchange depreciation):

    \[ R - R^* > 0 \]

    Failure of UIP.

- ABK banks cannot exploit failure of UIP because participation constraint particularly binding on dollar borrowing.
Theory of UIP Failure

A problem with ABK theory of UIP failure.

**JMP of Husnu Dalgic, Northwestern job market candidate:**

- In many emerging market, households denominate their deposits in dollars, for hedging reasons.
  - Exchange rates depreciate in recessions so dollar deposits provide income insurance.
  - ABK assumption that it is easier for banks run away from dollar debts seems implausible.
- Same hedging factors make firms want to borrow in local currency.
- Local currency markets relatively short on domestic currency, hence
  \[ R - R^* > 0 \]

- In principle, foreigners should enter and supply local currency loans (‘original sin’)
  - Neither ABK or Husnu Dalgic address this.
Dalgic Theory of UIP Failure

- In effect, failure of UIP reflects an (welfare-enhancing) insurance arrangement between households, who want insurance against income risk and owners of firms who provide it, for a price:

  \[ R - R^* > 0. \]

- The price that households pay for the insurance:

  \[ R - R^* > 0. \]

- Dalgic’s JMP defends his view using data and theory.

- If the Dalgic analysis is accepted, then any analysis of policies that affect dollar borrowing by firms needs to take into account the implications of these welfare-enhancing insurance arrangements.
Broader Questions

- In welfare analysis, ABK is not sufficiently explicit about what private market failure their policies are designed to correct.
  - Are they ways of exploiting the downward-sloping demand for the country’s export good?
  - Are they ways to transfer more net worth to banks, to mitigate the financial frictions?
  - Do they correct an inadequacy of the self-regulation (participation constraint) done by banks themselves?

- In ABK’s calibration, capital held by ‘banks’ is 0.75 of all capital.
  - Is the shadow banking system too big, relative to the data? Does that matter?
  - Remember: existence of deposit insurance eliminates the financial friction (at the cost of introducing moral hazard).