# 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, $A$ :
    $$A = \text{net worth } (N) + \text{deposits } (d).$$

    - They would run away if their leverage ever exceeded a critical level, say $L^*$.
    $$\text{leverage, } L \equiv \frac{A}{N} = \frac{d + N}{N}.$$

- $\Theta$ 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, $L^*$.

- So, banks never consider a level of borrowing that violates $L^*$.

  - 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.
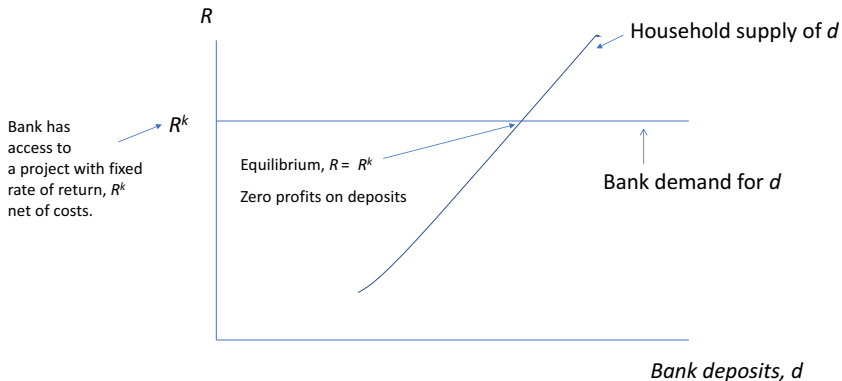
    - Theory of failure of UIP.

# 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.
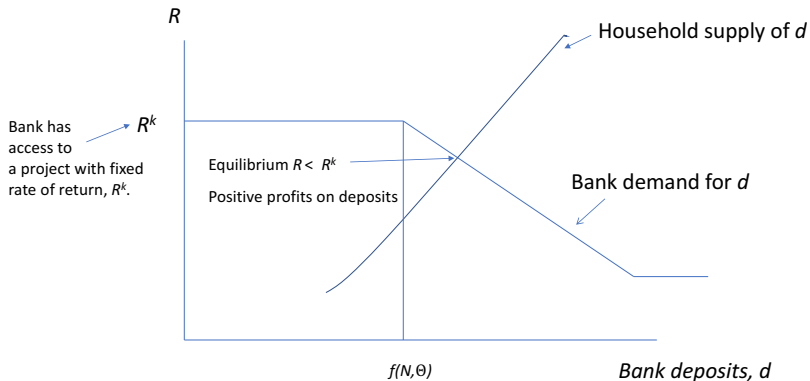    - Assets generate a fixed return, $R^k$.

# Competitive Banking System with No Financial Friction



$R$

Household supply of $d$

$R^k$

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

Equilibrium, $R = R^k$

Zero profits on deposits

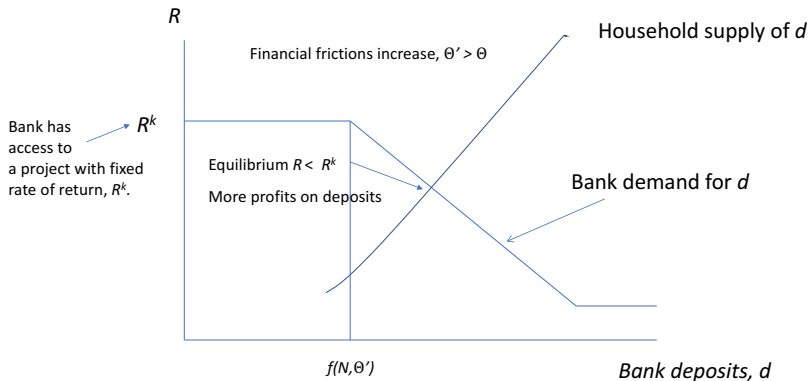Bank demand for $d$

*Bank deposits, d*

# Financial Friction

- 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



$R$

Household supply of $d$

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

$R^k$

Equilibrium $R < R^k$

Positive profits on deposits

Bank demand for $d$

$f(N,\Theta)$

Bank deposits, $d$

# Competitive Banking System with Financial Friction



$R$

Financial frictions increase, Θ′ > Θ

Household supply of $d$

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

$R^k$

Equilibrium $R$ < $R^k$

More profits on deposits

Bank demand for $d$

$f(N,Θ′)$

*Bank deposits, 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).