Financial Crises and Lending of Last Resort in Open Economies

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The contribution

- Present a model of twin crisis (financial and currency crisis) driven by self fulfilling pessimistic expectations, with portfolio choice (endogenous dollarization)

Outline of discussion

- Highlighting the different parts of the mechanisms
- What's new (and cool): not just a model of self-fulfilling crisis, it is a model of self-fulfilling risk!
- (Monetary) Policy implications
- Some (favourable) empirical evidence

Part 1. Self-fulfilling financial crisis

- Consider firm/bank owning capital qk, owing debt b, which borrows b' to buy qk' for production of a tradable good
- When q (relat. price of capital) falls
  - Substitution: more demand for k' (more b')
  - Income: since firm owns capital, firm is poorer, less demand for k'

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- Kiyotaki-Moore style financial crisis: Expected fall in q depresses economic activity, which validates fall in q

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  Hence when when $P_N \downarrow$ -> $P_T \uparrow$, which implies (Given the LOP, $P_T = sP_T^*$) that s must be going up
- Nominal Depreciation in crisis
- As economy tanks price $P_N \downarrow$ creating deflationary pressure. CB fights deflation by injecting money so that nominal exchange rate depreciates, and $P_T = sP_T^*$ increases.

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- As economy tanks price $P_N \downarrow$ creating deflationary pressure. CB fights deflation by injecting money so that nominal exchange rate depreciates, and $P_T = sP_T^*$ increases.
- Caveat: Not so sure that the currency depreciation we see in financial crises solely driven by price stability concern

Part 3. Liability dollarization

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- What happens when q and economic activity fall, and nominal exchange rate depreciates?
  - If firms borrow in peso, value of debt is reduced, firms less constrained, k' stable
  - If firms borrow in dollar, value of debt increased, firms more financially constrained, k' falls
- Under liability dollarization (original sin) price drops have bigger effect on economic activity: self-fulfilling financial crisis more likely
- Exchange rate depreciation make constraint more binding in crisis (large literature in balance sheet effects, original sin)

Part 4. Endogenous dollarization

- Why would then firm borrow in dollars?
- Dollar rate exogenous
- Peso rate determined by supply of saving by domestic households (some segmentation is needed)
- When financial crises possible, firms like to borrow in peso (good hedge against fall in q), but households do not like to save in peso, because pesos savings depreciates in bad times (bad hedge). So interest on peso assets increase.
- If households sufficiently risk averse then interest rate on peso asset so high, that firms will borrow in dollars, exposing themselves to the risk of a financial crisis
- Note that here risk shifting from more to less risk averse (usually efficient) leads to inefficiency, because low risk averse agents (firms) drive production

A brief detour

- Key feature of environment is that correlation between domestic bond returns and economic activity affects risk premium demanded by local investors on these bonds
- Two recent works (Hur,Kondo and Perri, 2016, and Du, Pfluger and Schreger 2017) show how counter-cyclical inflation reduces real bond returns in bad times, increase risk premia on bonds and induce borrowers to shift toward foreign-currency denominated bonds

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- Suppose agents expect to be at risk of a financial crisis. Domestic bonds poor saving vehicle for domestic households. Interest on those is high, firms borrow in dollars, validating the risk of financial crisis.

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- Suppose agents expect to be at risk of a financial crisis. Domestic bonds poor saving vehicle for domestic households. Interest on those is high, firms borrow in dollars, validating the risk of financial crisis.
- Suppose instead agents do not expect a financial crisis. Households happy to save in pesos, firms borrow in pesos because interest is low, no financial crisis is possible
- Similar idea (but here more concrete) in Bacchetta, Tille and Van-Wincoop (2012)
- Different from standard multiple equilibrium: household expect risk, this induce them to demand high rate on domestic bonds, which induce firms to shift to borrowing in foreign bonds, which creates the possibility of self-fulfilling crises, validating the initial expectations

Can reserve accumulation help?

- If government accumulates reserves (at a cost) which can be used to buy capital, and thus maintain the q high, it can stave off crises (at a cost)
- Key empirical reference is Gourinchas and Obstfeld (2012), showing that reserve accumulation reduces likelihood of a crisis
- Alternative model is Hur-Kondo (2016), which use a Diamond-Dybvig environment to explain same fact

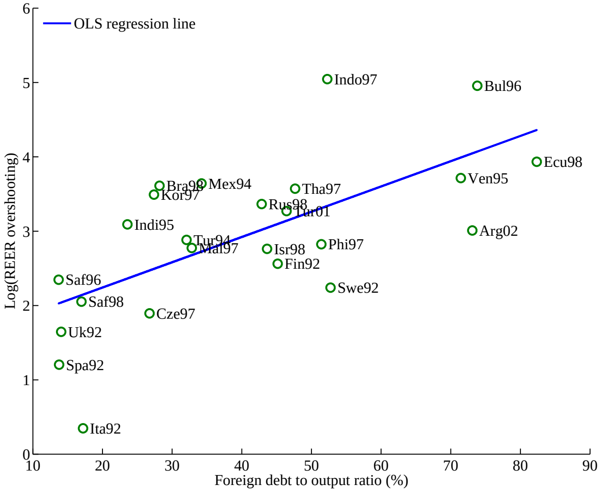
Monetary policy

- Here monetary policy pursues price stability
- Price stability desirable without liability dollarization (and no risk of crisis)
  - It insures households against shocks to foreign prices, low risk premium and firms borrow cheaply
- When liabilities dollarized (and risk of financial crisis) not so clear.
- Consider exchange rate stability:
  - Makes dollar assets less attractive to households, as they do not payout more in bad times (so more peso lending and lower interest rate)
  - Would make firm net worth less sensitive to crisis
  - Consistent with exchange rate target adopted by small open economies

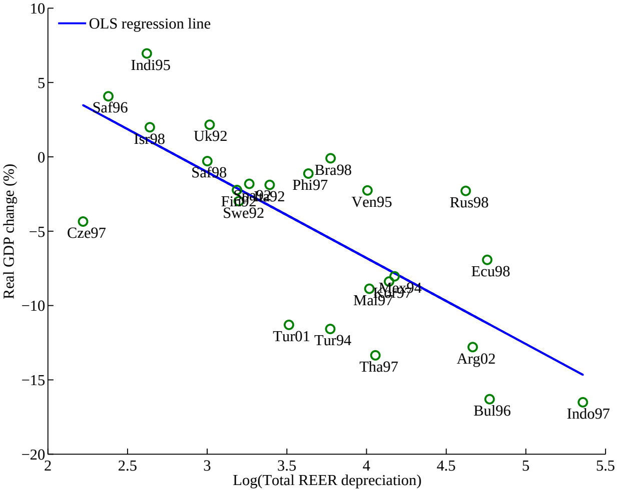
Some evidence on effect of liability dollarization in crises

- In Cavallo, Kisselev, Perri and Roubini (2012) we explored the impact of liability dollarization, conditional on a crisis
- Countries entering a crisis with more foreign currency debt, experience:
  - Larger depreciations,
  - Larger output drop
  - Larger current account reversals
- Broad support for the thesis in this paper that liability dollarization is a crucial determinant of the risk of financial and currency crises.

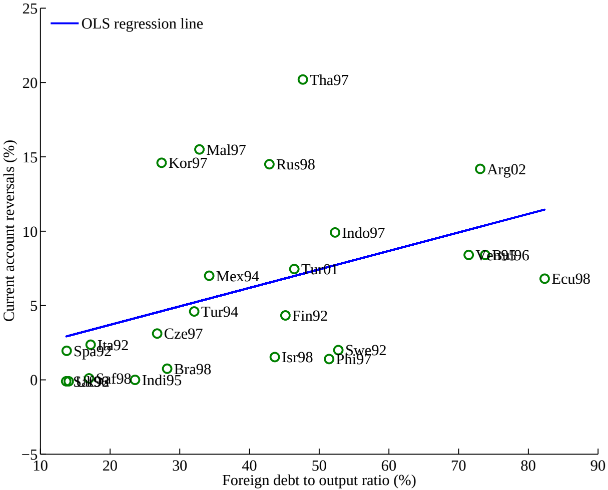
Dollarization and Depreciation



Depreciation and output



Dollarization and current account reversals



Conclusion

- Excellent paper that clarifies the interactions between financial and currency crisis, and offers appealing explanation for why liability dollarization is pervasive, despite its destabilizing nature
- Views the international financial system as inherently unstable, with regulation/intervention needed to avoid inefficient outcomes