“The Role of International Financial Integration in Monetary Policy Transmission”

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Overview

- Quantitative model with incomplete financial markets
- International transmission of monetary policy when financial intermediaries hold bonds of different maturities and face exchange rate risk
- Exploration of transmission channels under different conditions

The set up

- Two-country New Keynesian model
- International trade
- Financial intermediaries hold long-term bonds, home and foreign currency
- Varying degree of openness through trade and financial integration (cost of portfolio adjustment)

Monetary expansion in country A

Impact on Country A

- FX depreciation and lower nominal interest rate
- Expenditure switch away from B's good; output in A increases
- Lower interest rate relaxes financial constraint so investment and output increase

Spillover to Country B

- Expenditure switch to A's good, output in B falls
- Country A increases demand for all goods, so output in B increases
- Valuation of A-bonds falls, tightening the financial constraint; output in B decreases

Baseline case: On net, monetary expansion in A is negatively transmitted to B. Transmission is bigger for QE expansions (direct impact on financial constraint) and the more the two economies are connected through trade and financial assets.

Empirical motivation

- Paper shows that cross-border bond issuances tend to be more long-term than short-term
- Countries vary in their holdings of foreign debt, and vary in the ratio of short- to long-term debt.
- We know that both the currency and maturity composition of debt is endogenous, and can vary a lot across countries and over time
- Key mechanism is that financial intermediaries are exposed to foreign currency and interest rate risk & changes in FX and I affect real investment
- Suggestion:
  - Paper could do more to document the <u>holdings</u> of <u>financial institutions</u>
  - Could learn more from heterogeneity and time variation than the "on average" across country focus

Large empirical literature on monetary policy transmission

My reading:

- Generally evidence points to a positive transmission of US monetary policy abroad (ie effects go in the same direction in US and ROW)
- Impact of QE tends to be stronger
- Impact abroad depends somewhat on the country (AE vs EME)
- Financial channel seems to be important, but unclear that it is working through banks
  - Role of firm leverage
  - Cross-border investment

Questions about solution method

- Financial intermediaries face a portfolio choice problem in their holdings of home and foreign bonds
  - Model solved using linear methods (fluctuations around a steady state portfolio)
  - If banks optimize, need a second-order solution method to capture risk
    - Covariance risk between home and foreign bonds
    - Exposure to maturity risk different maturities
    - Covariance between FX risk and bond returns

- Model is solved when financial constraint is binding
  - A more realistic (though harder to solve!) approach would be occasionally binding constraints
  - Paper needs to be clear whether it is about financial crises, or the usual transmission through changes in prices and interest rates

Gertler and Karadi:

The current [sub-prime] crisis has featured a sharp deterioration in the balance sheets of many key financial intermediaries. ….[t]he deterioration in the financial positions of these institutions has had the effect of disrupting the flow of funds between lenders and borrowers [resulting in] a sharp rise in various key credit spreads as well as a significant tightening of lending standards. This … raised the cost of borrowing and thus enhanced the downturn.

…. **The contraction of the real economy has reduced asset values throughout, further weakening intermediary balance sheets, and so on. It is in this kind of climate, that the central bank has embarked on its direct lending programs.**

Banks caught by surprise by a big shock to the balance sheets.
Is this the normal condition in which financial intermediaries operate?

Europe's banks unlikely to get hit by bond portfolio losses - Moody's

Reuters
March 13, 2023

European banks are unlikely to find themselves compelled to liquidate their bond holdings at a loss like their U.S. peer Silicon Valley Bank (SIVBV.UL)....Though rising interest rates have hit the value of banks' bond portfolios, their market value will tend to converge with their nominal value as they approach maturity, under an effect known as 'pull-to-par'.

"Based on their sound liquidity and funding profiles, cash holdings and stable deposit bases, we consider large European banks are generally well placed to avoid the need to sell their bonds at a loss," Moody's said in a comment.

Summary

- Strengthen empirical motivation – holdings of long-term foreign-currency denominated bonds by financial intermediaries
  - Exploit heterogeneity?

- Choose the frame for the paper:
  - Focus on how monetary policy is transmitted most of the time OR
  - Focus on how monetary policy is transmitted during credit crunches

- Once you decide the frame
  - Does the model, given reasonable parameters, generate results that look like data?