

Foreign Exchange Derivatives and Bank Lending in China



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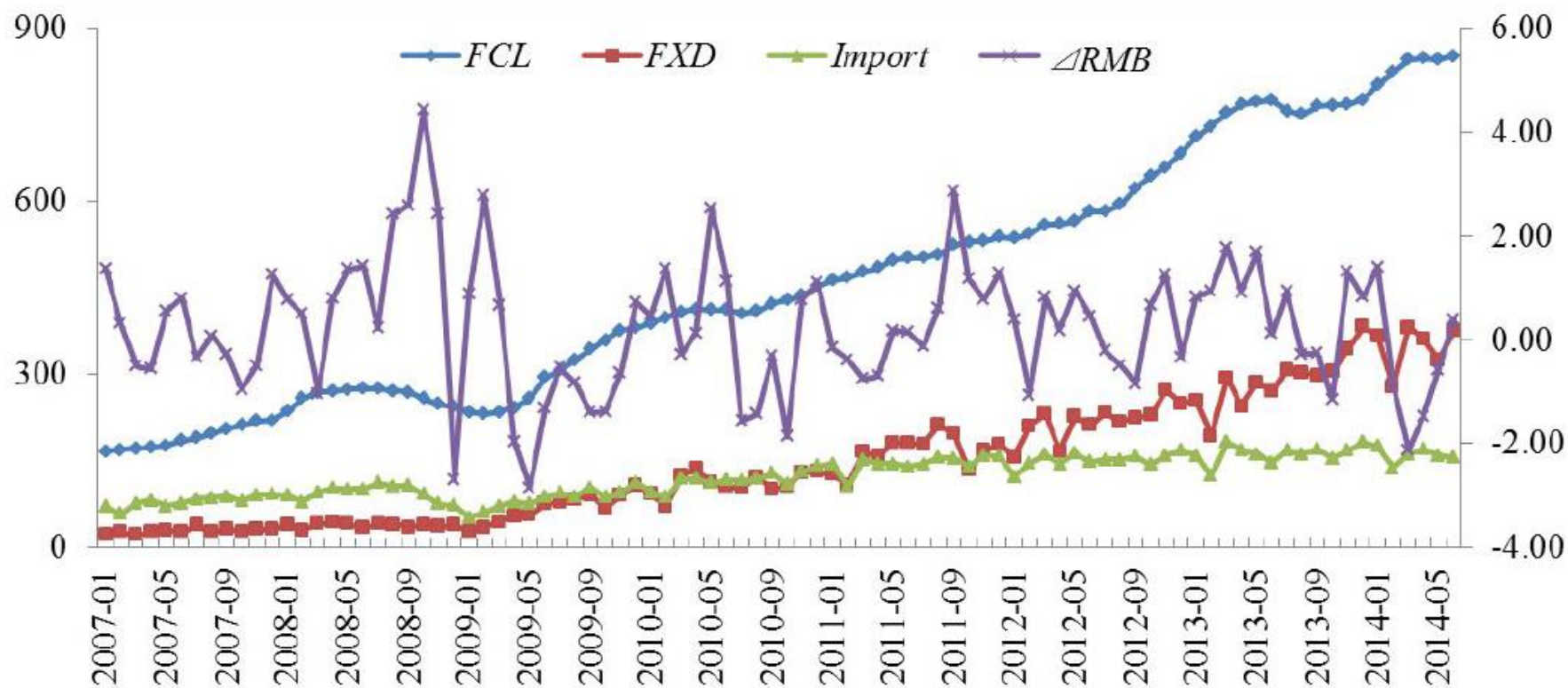
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Questions



- What is the effect of FX hedging instruments on supply of FX loans by Chinese banks?

Figure 2: Time Series of Variables (Not Transformed into Natural Logarithms)



Note: The left axis measures foreign currency loan volume, foreign exchange derivatives transaction volume and import volume (in billions of USD), and the right axis measures the changes in the nominal RMB effective exchange rate index.

Data source: CEIC, CFETS, Bank for International Settlements.

Outline



- **Motivation**
- **Theoretical model**
 - Are Chinese firms more willing to lend in fx if hedging possibilities exist?
- **Empirical**
 - Does FX derivative growth cause FX credit growth?

Theory



- **Is it a realistic structure?**
 - One period model of 2 banks
 - Prices exogenous, foreign and domestic banks competing to give FX loans to Chinese companies (homogenous products)
 - Are foreign and Chinese banks competing for same customers? Do they have special products, niches, etc.?
 - Do foreign banks have a cost advantage in supplying loans in fx?
 - Very stylistic IO competitive structure...does it fit the basic statistical outline? Data?
- **Basic prediction more easily derived: “...positive effect of forwards position used by bank A on the total foreign currency loan volume in the credit market.”**
 - i.e. ability of a bank to hedge risk implies they’ll supply more loans

Empirics: VAR approach



- “...the only prior knowledge required is a list of variables which can be hypothesized to affect each other intertemporally...” (p. 14)
 - NOT!
- Model:
 - FCL, FXD endogenous; RMB, Imports exogenous
 - ✦ Are RMB and imports exogenous?
 - ✦ Only imports as the real driver? Exports or financing for FDI?
 - Levels VAR?

linkages



- **Why levels?**
 - Unit root tests indicate stationary IF trend included...
 - ✦ no trend in VAR and could be different trends
 - Is error term stationary in VAR?
 - Likely the terms are cointegrated
- **Consider VECM**
 - Simple Granger causality tests show two-way causality
 - ✦ And we should expect joint-causality

Interesting results



- Main result is impulse response functions from shocks to either loans or derivatives
 - Note “generalized impulse response function”
 - ✦ Doesn’t depend on “ordering” of variables since the shocks are composite shocks, reflecting correlations among errors
 - ✦ Not a “pure” shock

Figure 4: Response of $\ln FCL_t$ to $\ln FXD_t$

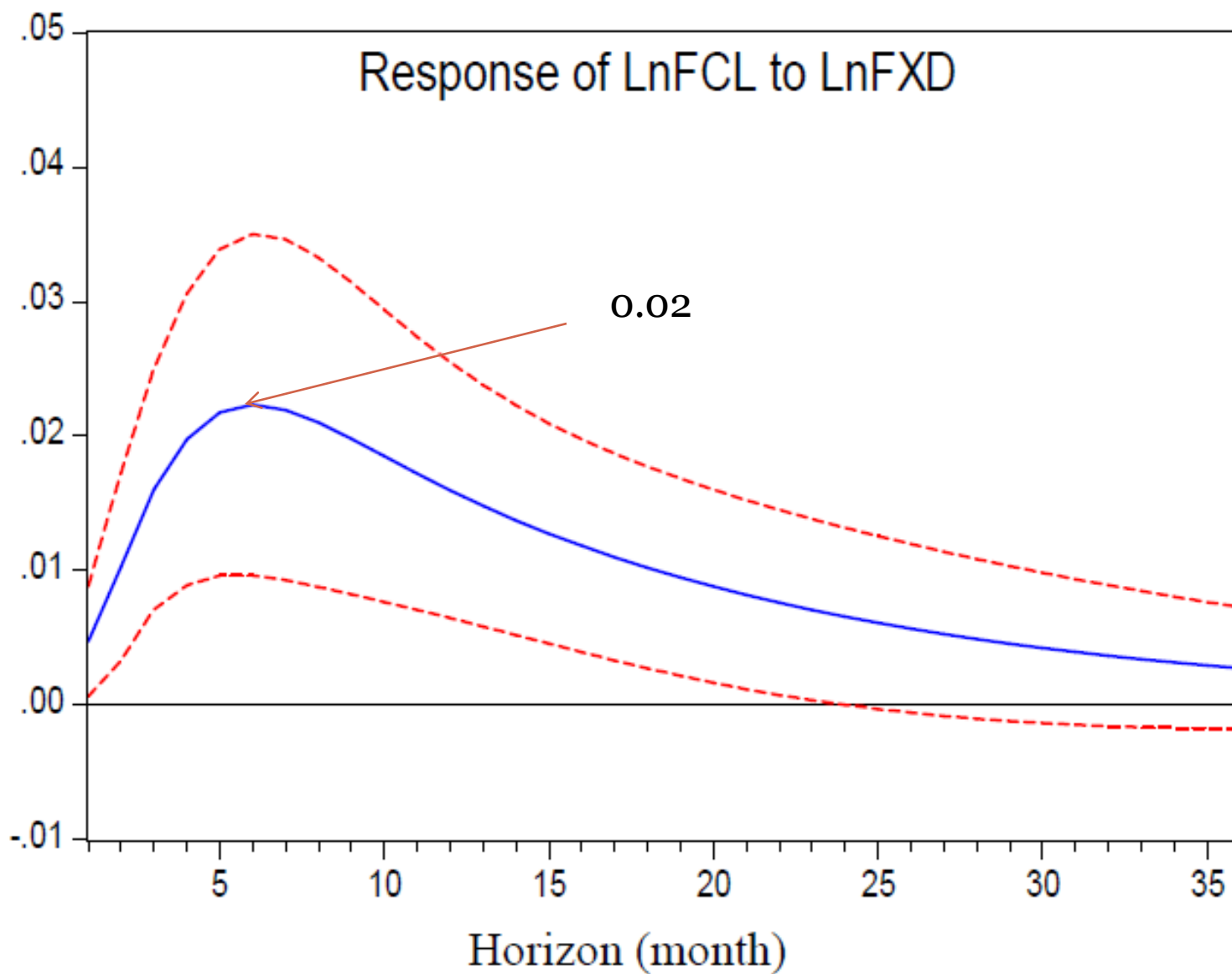
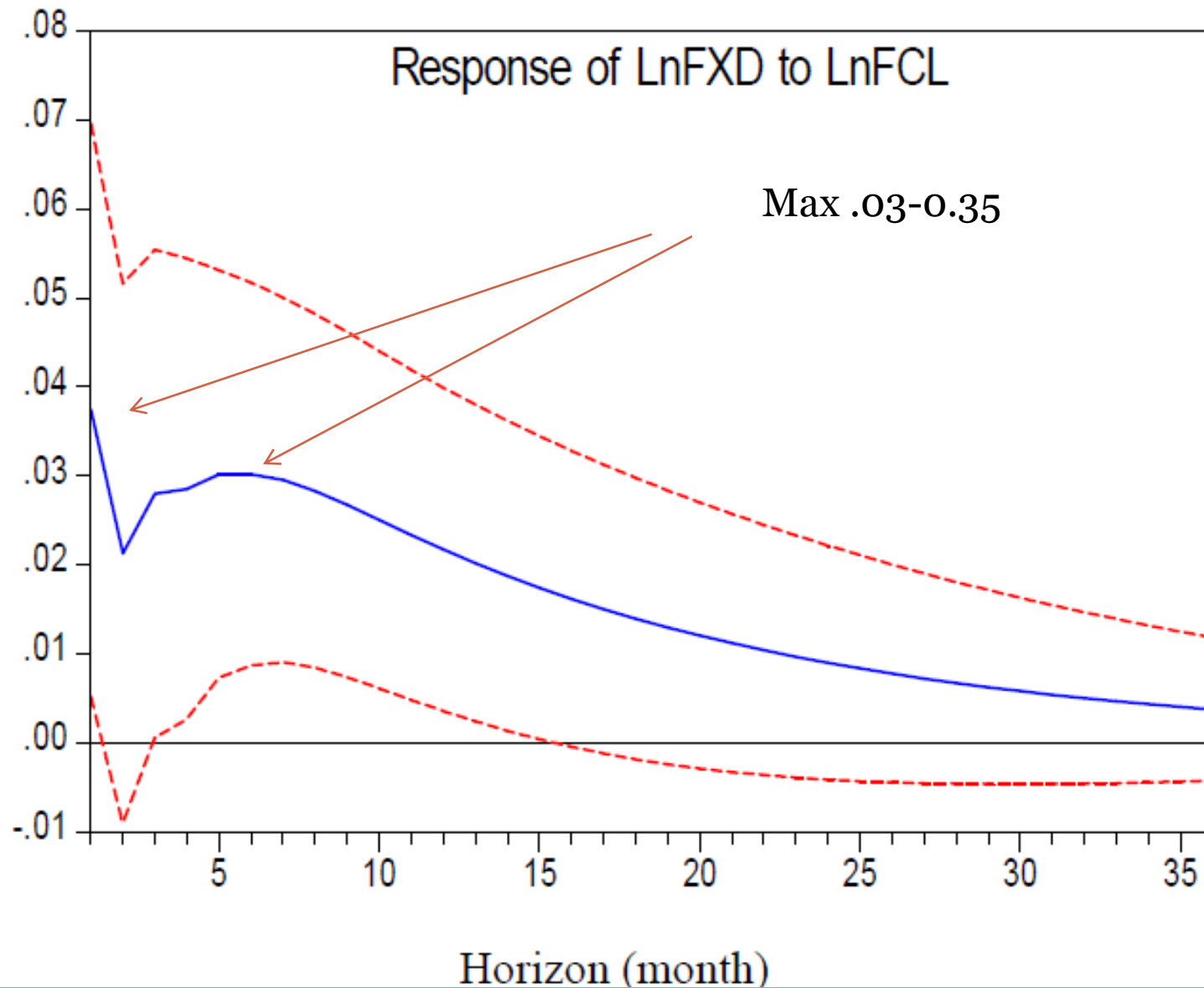


Figure 5: Response of $\ln FXD_t$ to $\ln FCL_t$



Joint Causality



- Clearly joint causality theoretically and in practical application
 - Need for hedging associated with fx loans gave rise to supply of fx derivatives
- Consistent with Wen's empirics and theory
- Interesting start, many more questions!