

# **Financial Heterogeneity and Monetary Union**

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November 2015

- Nice and polished paper. International extension of earlier work.
- Puzzle: why the real exchange rate has not correctly adjusted during the twin crises in Euro area to eliminate imbalances?
- Why firms in the periphery were slow in cutting prices and firms in the core reluctant to increase their prices (despite good demand and employment situation)? Prices increased in the periphery but not in the core.
- Answer: with liquidity constraints, firms pricing decisions face trade off: current cash flow vs. future market share maximization. Liquidity constrained firms have higher prices and higher markups.
- Mechanism is reinforced under fixed exchange rates (currency union) since RER for the periphery appreciates. The opposite occurs with flexible rates. Fiscal union or fiscal devaluations may help to solve the problem.

## My comments

- Is the story appealing for Euro area?
- Is the empirical analysis motivating the theory credible?
- What could be behind the (reduced form) financial frictions used in the paper?

## Is the story appealing?

- Kalyvitis, Katsimi, Pappa, Restrepo (2015): Did the Euro boost trade? Evidence from Greek firms
- Look at a large sample of Greek exporters.
  - Value of exports ( $P*Q$ ) and quantities exported ( $Q$ ) fell with adoption of the Euro.
  - Firms that had high pre-Euro markups suffered most.
  - General increase in markups but weak evidence that export prices increased post-Euro.

- Negative effect on quantities and value driven by firms with low pre-Euro productivity. High-TFP firms have increased both quantities and prices.
- Financial frictions (liquidity, leverage and cash ratio) do not matter once level of TFP taken into account. Low-TFP firms, both with high and low frictions, responsible for fall in value and quantities.
- Evidence is partially consistent with the story. Other part: export firms with low-TFP and high markup simply disappeared. Similar to what happened in Spain, Portugal, etc. (Marimon and Zilibotti (1996)).

## Is the empirical evidence motivating the theory credible?

Empirical model (i=country):

$$\begin{aligned}\pi_{it} &= \beta_i E_t \pi_{it+1} + \lambda_i mc_{it} + \epsilon_{it} \\ mc_{it} &= A_i(L) mc_{it-1} + u_{it} \\ \hat{\pi}_{it} &= \hat{\lambda}_i \sum_k \hat{\beta}^k E_t mc_{it+k} \\ \pi_{it} - \hat{\pi}_{it} &= \gamma_0 + \gamma_i CDS_{it} + \nu_{it}\end{aligned}\tag{1}$$

- MC exogenous?
- Two step estimation approach. Overestimation of the precision of  $\gamma_0, \gamma_1$ .

To get right standard errors: do system GMM or one-step approach

$$\pi_{it} - \lambda_i e' (I - \beta A_i) z_{it} = \gamma_0 + \gamma_i CDS_{it} + \nu_{it}$$

where  $z_{it} = [mc_{it}, mc_{it-1}, \dots]$ ,  $e$  a vector of ones. Jointly estimate  $\theta = (\lambda_i, \beta, A_i, \gamma_0, \gamma_i, \sigma_\nu)$ .

- Country CDS spreads as measure of financial frictions? Same problem with realized volatility of daily difference of CDS spreads. Use differences in lending rates or differences in lending-deposit rates (see later).

## Model Ingredients

- i) Deep habit in consumption goods.
  - ii) Fixed cost of production  $\phi_i$ : (think of country specific costs of servicing long term debts). Negative profits possible.
  - iii) Informational friction: pricing (and output) decisions made after the realization of aggregate shocks but prior to the realization of a firm specific shock. Labor decisions taken after the realization of both shocks.
- i) incentivates firms to invest in market shares (low markup strategy). Low markup and ii)-iii) may create liquidity problems.



iv) Local equity finance to cover cost of production in case of liquidity problems. New share sold at a discount (due to asymmetric info?). Dilution cost  $\psi_i$ .

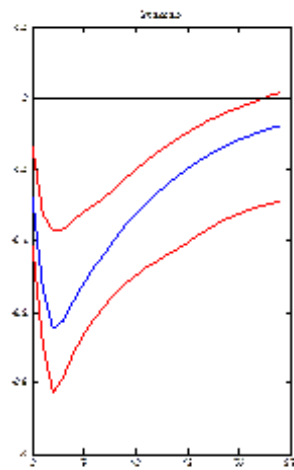
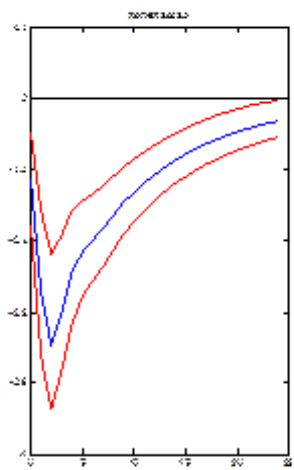
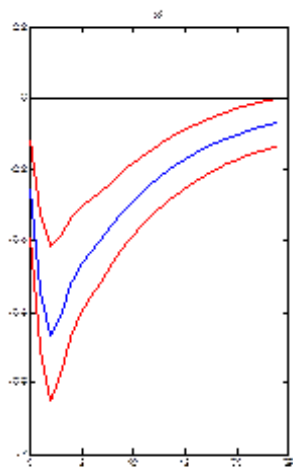
v) Local currency pricing by firms.

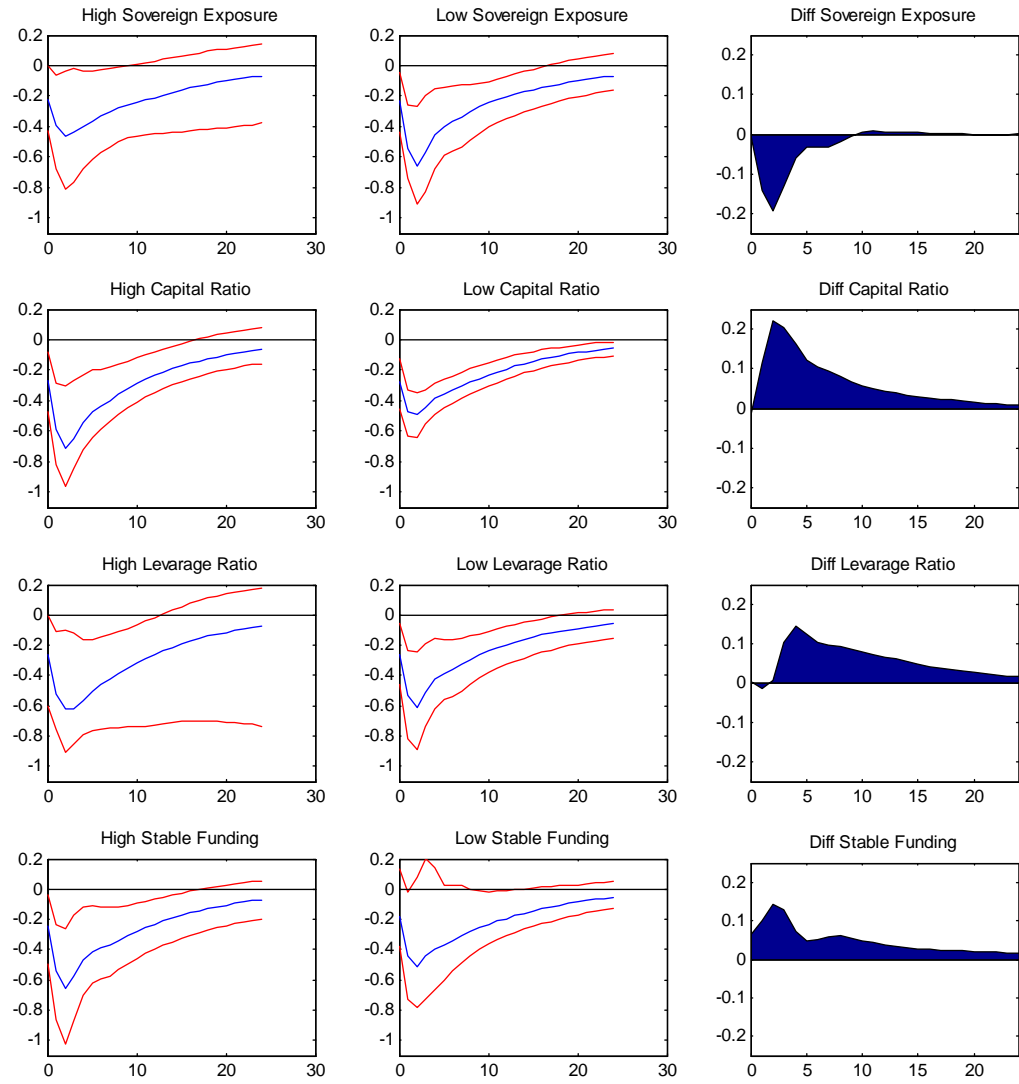
- Firms in countries with high dilution cost and high fixed costs, incentivated to keep prices (markups) high. Firms in countries with low dilution cost and low fixed costs can expand market shares when liquidity problems hit other country.

- Bond/equity finance not very appealing for Euro area. Mostly bank financed.
- $\phi_i, \psi_i$ : country specific degree of financial frictions.
- Is the country perspective appropriate?
- What is behind different degrees of financial heterogeneities?

Altavilla, Canova and Ciccarelli (2015): Interest pass-through and heterogeneous lending.

- Study the pass-through of conventional and unconventional MP measures on lending and lending-deposit spreads in 2007-2015 using bank level dataset.
- Conditional on global, country business cycle indicators (and other controls):
  - Pass through of conventional MP is similar in core vs. periphery.
  - Bank characteristics responsible for heterogeneous pass-through.





## Conclusions

- Need more convincing empirical evidence that the mechanism present in the model is operative. Structurally estimate the model. Compare fit/forecasting ability to a model where price-war incentive missing.
- Need better microfoundations for the financial frictions. Zombie-firms?
- Need to look at the banking sector as originator of crucial financial frictions.