

Discussion of “Financial Friction and Monetary Union”

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Overview of the paper

- **Question:** why have peripheral euro-area countries not experienced lower inflation than core euro-area countries during the crisis, despite higher unemployment and lower competitiveness?
- **Main contribution** of the paper: build a model to
 - explain how financial frictions can solve this puzzle
 - study the role of unconventional fiscal policy in this context
- The **key mechanism** in the model arises from the interaction between
 - nominal rigidities (price-adjustment cost and perfect price rigidity)
 - a financial friction (equity-issuance cost)
- **Main results:** in a monetary union,
 - firms in countries with stronger financial frictions raise their prices to reduce liquidity risk at the expense of lower market share
 - a unilateral fiscal devaluation can be Pareto-improving

Private agents

- **Two countries** populated by households and monopolistic firms
- **Domestic monopolistic firms**
 - are owned by domestic households
 - sell their products to domestic and foreign households
 - face price-adjustment costs à la Rotemberg (1982)
- **Foreign monopolistic firms** are modeled symmetrically
- Domestic and foreign **households**
 - are immobile across countries
 - have deep habits, i.e. external habits at the good level (Ravn, Schmitt-Grohé, and Uribe, 2006)

Financial friction I

- At each date t , each firm i sets its prices
 - **after** observing the aggregate shocks
 - **before** observing its idiosyncratic productivity shock $a_{i,t}^{-1}$
- Once $a_{i,t}^{-1}$ is realized, the firm is assumed to hire as much labor as needed to **meet demand at these prices**
- The higher $a_{i,t}$, the higher the wage bill $w_t h_{i,t}$, the lower dividends $d_{i,t}$
- If $a_{i,t}$ is large enough, dividends are negative ($d_{i,t} < 0$), i.e. the firm issues equity
- **Non-linearity (discontinuity):**
 - paying positive dividends is **costless**
 - paying negative dividends, i.e. issuing equity, is **costly** (constant marg. cost φ)

Financial friction II

- The **dividends** paid by this firm are

$$d_{i,t} = p_{i,h,t} p_{h,t} c_{i,h,t} + q_t p_{i,h,t}^* p_{h,t}^* c_{i,h,t}^* - w_t h_{i,t} + \varphi \min\{0, d_{i,t}\} \\ - \frac{\gamma}{2} \left(\frac{p_{i,h,t}}{p_{i,h,t-1}} \pi_{h,t} - \bar{\pi} \right)^2 c_t - \frac{\gamma^*}{2} q_t \left(\frac{p_{i,h,t}^*}{p_{i,h,t-1}^*} \pi_{h,t}^* - \bar{\pi}^* \right)^2 c_t^*$$

- **No distribution dynamics** in equilibrium:
 - only labor and dividends depend on idiosyncratic shocks
 - they depend only on current idiosyncratic shocks
- This is because
 - idiosyncratic shocks are serially uncorrelated
 - Rotemberg-type costs imply identical prices and sales across firms
 - prices and sales are the only state variables

Implications for price setting

- **The lower the prices** chosen by a firm at date t ,
 - the larger the demand it faces at date t
 - hence **the higher the risk** that it may have to issue equity at date t
- Moreover, **the lower the prices** chosen by a firm at date t ,
 - the larger the demand it expects to face at date $t + 1$, due to price-adjustment costs and households' deep habits
 - hence **the higher the risk** that it may have to issue equity at date $t + 1$
- Therefore, **firms with higher equity-issuance costs set higher prices**
 - to reduce the risk of having to issue equity
 - at the expense of lower market shares
- Thus, equity-issuance-cost shocks work like **supply shocks**, and may contribute to explain why inflation was not lower in peripheral euro-area countries during the crisis

Alternative regimes and policy implications

- 1 **Flexible exchange rates: Pareto-improving**, as a currency devaluation restores competitiveness
- 2 **Fiscal union**, i.e. complete risk sharing: **not Pareto-improving**, as countries are asymmetric
- 3 Unilateral **fiscal devaluation**, i.e. fiscal-policy mix replicating the effects of currency devaluation (Adão, Correia, and Teles, 2009): **Pareto-improving** because of a “pecuniary externality” (to be specified)

Overall assessment

- **Very interesting paper** that
 - addresses an important issue
 - identifies a new mechanism
 - quantifies the effects
 - derives policy implications
 - provides supporting empirical evidence

- In what follows, I make **comments** on and **suggestions** about
 - the price-adjustment cost
 - the financial friction
 - the comparison between exchange-rate regimes
 - the welfare effects

Price-adjustment cost

- Firms face a **price-adjustment cost** à la Rotemberg (1982):

$$\frac{\gamma}{2} \left(\frac{P_{i,h,t}}{P_{i,h,t-1}} - \bar{\pi} \right)^2 c_t + \frac{\gamma^*}{2} \frac{S_t P_t^*}{P_t} \left(\frac{P_{i,h,t}^*}{P_{i,h,t-1}^*} - \bar{\pi}^* \right)^2 c_t^*$$

- In closed-economy models, it is standard to specify these costs as proportional to aggregate output
- This generates an **externality between firms** (as each firm does not internalize the effect of its price decision on the price-adjustment cost of other firms)
- In this open-economy setup, the externality is not only between domestic firms, but also **between domestic and foreign firms**
- It would be interesting to
 - provide an interpretation of this cost specification involving c_t and c_t^*
 - discuss how this externality may interact with the core mechanism
 - see what happens when c_t and c_t^* are replaced by $c_{h,t}$ and $c_{h,t}^*$ (if relevant)

Financial friction I

- The key results are obtained under the assumption of **no internal funds**, i.e. **no precautionary savings** by firms
- Relaxing this assumption would probably **weaken the effects** of the financial friction on prices
- It would also require to solve for **non-trivial distribution dynamics**
- This should probably deserve some discussion

Financial friction II

- Each firm is assumed to **adjust supply to demand** at its predetermined prices, i.e. each firm faces the “demand constraint”

$$\left(\frac{A_t}{a_{i,t}} h_{i,t} \right)^\alpha - \phi \geq c_{i,h,t} + c_{i,h,t}^*$$

- In the absence of financial friction ($\phi = 0$), **it is optimal** for monopolistic firms with predetermined prices to adjust supply to demand (Blanchard and Kiyotaki, 1987)
- In the presence of financial friction ($\phi > 0$), **it would not be optimal** if
 - ① it required issuing equity ($d_{i,t} < 0$)
 - ② the marginal equity-issuance cost (ϕ) were higher than the present value of the corresponding marginal profits (taking into account deep-habit effects)

Financial friction III

- Under these two conditions, if allowed to, the firm would choose to supply less than the demand it faces, and there would be **rationing**
- Moreover, one would need to solve for **non-trivial distribution dynamics**
- This should probably deserve some discussion
- Could it be that, due to deep habits, the second condition is met only for irrelevantly high values of φ ?

Monetary union vs. flexible exchange rates I

- The **welfare comparison** between monetary union (MU) and flexible exchange rates (FER) depends on the specific monetary-policy rules considered
- Under FER, these rules are identical across countries, even though countries are structurally different
- Why not consider **optimal monetary policy**?
- If the central banks cooperate with each other under FER, there is **no trade-off**: any allocation under MU is achievable under FER, so FER are preferable to MU whatever the weights on national welfares in the common objective function

Monetary union vs. flexible exchange rates II

- So why not consider the **Nash equilibrium** in which each central bank maximizes national welfare under FER?
- This would generate a trade-off, due to the **terms-of-trade externality** under FER (Corsetti and Pesenti, 2001; Benigno and Benigno, 2003)
- This **trade-off** could be interesting, since the stronger the financial friction,
 - the stronger the negative welfare effect of MU
 - the stronger the terms-of-trade externality under FER (presumably)

Welfare effects

- The model includes **many sources of inefficiency** (excl. steady-state distortions):
 - price-adjustment cost (in response to aggregate shocks)
 - perfect price rigidity (in response to idiosyncratic shocks)
 - equity-issuance cost
 - catching-up-with-the-Joneses externality
 - price-adjustment-cost externality
 - portfolio-rebalancing cost
 - wage-adjustment cost

not to mention the pecuniary externality and the terms-of-trade externality

- **Not all of them are necessary** for the qualitative or even quantitative effects of interest (e.g., external habits could be replaced by internal habits)
- It could be interesting to see what happens when the non-necessary ones are removed, in order to better understand the **core welfare effects**