Productivity and Trade Dynamics in Sudden Stops

Benguria, Matsumoto & Saffie (2021)

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The views expressed in this presentation are those of the authors and do not necessarily reflect the position of the Federal Reserve Board or the Federal Reserve System.

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- **How?** Propose framework to study sudden stops in which trade and productivity dynamics shape evolution of aggregate economy
  - innovation through firm dynamics (Ates & Saffie, 2020)
  - product-level export dynamics
  - endogenous sudden stops (Mendoza, 2010)

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  Novel result: Innovation by exporters plays a relevant role in ss recovery.

Key equations and mechanisms

- **Demand for tradable intermediates:** $y_t(i) = \dfrac{Y_t}{p_t(i)\left(1+\phi\frac{\mu_t}{\lambda_t}\right)}$

- **Profits:**

$$\pi_t^j = \frac{1}{1+\phi\mu_t/\lambda_t}\frac{\sigma^j}{1+\sigma^j}Y_t \quad \text{for} \quad j \in \{D, X\}$$

$$\pi_t^* = \left(1 - \frac{1+\xi}{1+\sigma^X}\frac{\left(R_t^L\right)^\alpha\left(W_t^L\right)^{1-\alpha}}{\left(R_t^*\right)^\alpha\left(W_t^*\right)^{1-\alpha}}\right)Y_t^*$$

- **Innovation decisions:**

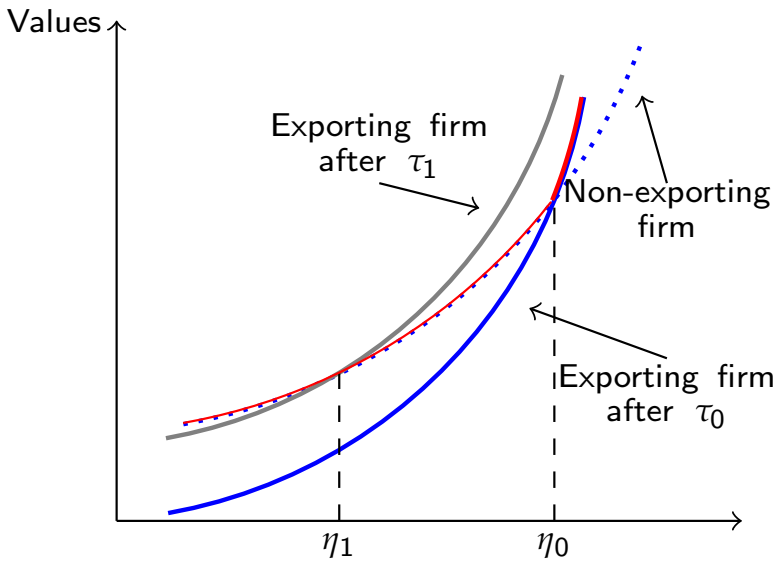
$$\eta^D\frac{1}{\rho}\left(\frac{Z_t^D}{A_t}\right)^{1/\rho-1}\frac{1}{A_t}\mathbb{E}_t\left[\Lambda_{t,t+1}V_{t+1}(1,0)\right] = 0 \quad \Rightarrow 1+\sigma^D$$

$$(1-d_t)\eta^X\frac{1}{\rho}\left(\frac{Z_t^X}{A_t}\right)^{1/\rho-1}\frac{1}{A_t}\mathbb{E}_t\left[\Lambda_{t,t+1}V_{t+1}(0,1)\right] = 0 \quad \Rightarrow 1+\sigma^X$$

Comment 1/4: Trade Dynamics

→ Trade dynamics are introduced through entirely novel mechanism. Cool! ⇒ Differences and similarities to existing mechanisms...

- Trade literature's emphasis on firm selection as driver of increase in measured TFP → Melitz (2003), Alessandria & Choi (2007), Castillo-Martinez (2020)



→ Role of trade elasticity, measured vs fund. TFP, firm size of X vs D, etc.

- Clarify role of the exchange rate
- Evidence on multi-product firms → Chatterjee, Dix-Carneiro & Vichyayond (2013)

Main Comment 2/4: The Role of Fisherian Debt Deflation

→ Endogenous sudden stops driven by collateral constraint ⇒ Implications for main message of the paper?

$$u'(c_t) = \beta R \mathbb{E}_t \left[u'(c_{t+1}) \right] + \mu_t$$

$$Q_t = \beta \mathbb{E}_t \left[\frac{u'(c_{t+1}) \left(Q_{t+1} + R^L_{t+1} \right) + \mu_{t+1} \kappa Q_{t+1}}{u'(c_t)} \right]$$

- Paper emphasizes effect through working capital (even though it is more general) → What if interest rate shock drives ss? (Ates & Saffie, 2020)
  - Detail: collateral based on asset holdings at beginning of period t

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→ Interaction between precautionary behavior and innovation?

- Relevance of coefficient of relative risk aversion (EIS in CRRA)

→ Will have Implications for short versus long run trade elasticities!

Main Comment 3/4: Exploiting Micro Data and Trade Dynamics

$\rightarrow$ Emphasis on matching aggregate moments, a few micro moments, and use micro data for validation

$\Rightarrow$ **Incredible new data, start with novel stylized facts!**

- Why not exploit micro data more?
  - Multi-product firms
  - Firm margin vs product margin
  - Firm size
- Can more parameters be disciplined using the micro data?
  - Paper focuses on product entry, revenue and profits
  - Discipline features of ss and let model speak about recovery

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- Mostly food for thought...

Main Comment 4/4: Market Failures and Policy

$\rightarrow$ Fisherian debt deflation driven by clear pecuniary externality, but innovation driven by other failure... $\Rightarrow$ Think and provide some insights on role of policy.

- Solving for optimal policy difficult (maybe for other paper...)
- But interesting effects of a macroprudential tax on borrowing on innovation and growth (Ma, 2020)?

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Very nice paper! Big model with lots of new insights.

"Issue": choosing the punchline optimally!