Discussion of

Globalization, Market Structure and Inflation Dynamics

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Introduction

• Exciting paper!

• Fact: Inflation has become less responsive to output gaps
  — interpreted as a flattening of the Phillips curve

• Can globalization flatten the Phillips curve?

• To answer this question, the paper brings together three literatures:
  1. New Keynesian monetary model with sticky prices
  2. Oligopolistic competition and incomplete pass-through
  3. Heterogenous-firm trade model and globalization shock

• The answer is yes, if:
  — large firms exhibit great strategic complementarities and have lower pass-through of the cost shocks
  — globalization favors large firms (vs. competition!)
What are we talking about?

- New Keynesian Phillips Curve (NKPC):

  \[ \pi_t = \beta E_t \pi_{t+1} + \kappa \cdot x_t + \varepsilon_t \]

  - inflation \( \pi_t = p_t - p_{t-1} \)
  - output gap \( x_t = \gamma (mc_t - p_t) \)
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- inflation \( \pi_t = p_t - p_{t-1} \)
- output gap \( x_t = \gamma (mc_t - p_t) \)
- slope of the NKPC:

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\kappa = \frac{\lambda}{1 + \Gamma},
\]

where

- \( \lambda = \frac{(1-\theta)(1-\beta \theta)}{\theta} \) decreases in price stickiness \( \theta \)
- \( \Gamma \geq 0 \) is real rigidity
  (\( \sim \) strategic complementarities, round-about production, local input markets)
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- Can globalization increase \( \Gamma \) and reduce \( \kappa \)?
Flattening of the Phillips Curve

• ...or is there a Phillips curve?

Flattening of the Phillips Curve

• ... or is there a Phillips curve?


• Flat Phillips curve or missing inflation/deflation?
Mechanism I: Flex Price

- General flex-price model (Amiti, Itskhoki and Konings, 2016):
  
  \[ p_i = \frac{1}{1 + \Gamma_i} \cdot mc_i + \frac{\Gamma_i}{1 + \Gamma_i} \cdot p \]

  - Pass-through elasticity
  - Strategic complementarity

  Often, \( \Gamma_i = \Gamma(s_i) \), an increasing function of market share
  In particular, it is the case in Atkeson and Burstein (2008), but also in many monopolistic competition models
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- Aggregate inflation in a flex-price environment:
  \[ \pi = \frac{1}{S + \Gamma} + \frac{S^*}{1 + \Gamma^*} \left( \frac{S}{1 + \Gamma} \Delta mc + \frac{S^*}{1 + \Gamma^*} \Delta mc^* \right) \]

  — \( S \) and \( S^* = 1 - S \) are home and foreign expenditure shares
  — \( \Gamma \) and \( \Gamma^* \) are average real rigidities of home and foreign firms respectively
Mechanism II: Sticky Price

- Calvo price setting:
  \[ \bar{p}_{it} = (1 - \beta \theta) \sum_{\ell=0}^{\infty} (\beta \theta)^\ell \mathbb{E}_t \bar{p}_{i,t+\ell}, \]
  \[ p_t = \theta p_{t-1} + (1 - \theta) \int \bar{p}_{it} \, di \]

- Solution:
  \[ \pi_t = \beta \mathbb{E}_t \pi_{t+1} + \lambda \left[ \frac{S}{1 + \Gamma} (mc_t - p_t) + \frac{S^*}{1 + \Gamma^*} (mc^*_t - p_t) \right] \]
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\]

• Globalization shock:
  — \( S \downarrow \) and \( S^* \uparrow \), and \( \Gamma \downarrow \)
  — With heterogeneous firms, it is possible than \( \Gamma^* \uparrow \)
  — Then, it is possible that \( \kappa \downarrow \) (relevant for \( mc_t = mc_t^* \uparrow \downarrow \) shocks)
Mechanism II: Sticky Price

- Calvo price setting:
  \[ \bar{p}_{it} = (1 - \beta \theta) \sum_{\ell=0}^{\infty} (\beta \theta)^{\ell} \mathbb{E}_t \tilde{p}_{i,t+\ell}, \]
  \[ p_t = \theta p_{t-1} + (1 - \theta) \int \bar{p}_{it} di \]

- Solution:
  \[ \pi_t = \beta \mathbb{E}_t \pi_{t+1} + \lambda \left[ \frac{S}{1 + \Gamma} (w_t - a_t) + \frac{S^*}{1 + \Gamma^*} (w^*_t - a^*_t + q_t) \right] \]

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- Over-id tests for additional empirical discipline:
  1. Differential response to \( a_t \) and \( a^*_t \)
  2. Response to RER \( q_t \)
Technical challenge

• Sticky prices with large firms:
  — Menu costs: multiplicity of equilibria (whether to adjust) (Neiman, 2010; 2011)
  — Calvo: large state space (who adjusted when)

• Two solutions in the literature:
  1. Sbordone (2010): drop large firms, adopt non-CES demand
  2. Benigno and Faia (2010): large firms with Rotemberg pricing

• This paper:
  — Beningno and Faia (2010) + heterogenous firms

• Alternative modeling approach (Mukhin, in progress):
  1. Calvo pricing with large firms → market power
  2. Each firm is a collection of a mass of products, each subject to iid Calvo arrival, so LLN applies within a firm → tractability
Pro-competitive effects of globalization?

• Large closely-related literature in trade

• Recent surge in interest:
  — EMX (2015) and ACDR (2016)

• Pro-competitive effect suggests $\Gamma \downarrow$ stronger than $\Gamma^* \uparrow$?
  — fall in domestic markups and increase in importer markups

• The running null is that pro-competitive effect is a wash?
  — fall in domestic markups is nearly fully offset by increase in importer markups
Other implications

- Cyclicality of markups

- Sungki Hong (2016)
  1. Both small and large firms have countercyclical markups
  2. Small firms are substantially more countercyclical
Conclusion

- Fascinating topic!
  - expect more work in this area

- Very useful framework:
  - multiple additional applications