“Foreign Shocks as Granular Fluctuations”
di Giovanni, Levchenko, Mejean

Discussion by Ariel Burstein

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Summary

- How are foreign shocks transmitted to the domestic economy?
- Empirical fact: in response to increase in foreign GDP, value aded rises by more in larger firms
  - how does response vary with openness, given size?
- Tractable quantitative model to evaluate role of firm heterogeneity for aggregate impact of foreign shocks

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- Tractable quantitative model to evaluate role of firm heterogeneity for aggregate impact of foreign shocks
- My discussion:
  - what does granular residual capture?
  - why does firm heterogeneity dampen aggregate response of measured TFP?
  - additional dampening from variable markups and heterogeneous firms

Granular residual

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- Gaubert-Itskhoki (2020) granular residual
  - wght. small sample mean - wght. population mean

Foreign productivity shocks and measured TFP

- Δ real GDP $= \Delta$ labor supply $+ \Delta$ measured TFP
  - suggestion: report separately
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- Suppose single sector, single imported intermediate input (generalization in Baqaee-Farhi 2020)

$$d\text{TFP} = \omega^m (\mu - 1)(dm - d\omega^m)$$

  - ω^m =share of imported intermediate inputs in GDP
  - μ constant markup
  - $dm > 0$, $dTFP > 0$

Heterogeneity and measured TFP

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- What is the interaction between heterogeneity and
  - Δ factor supply?
  - welfare?

Dampening due to incomplete pass-through

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- If $\alpha_f \searrow$ size, dp smaller than under constant mkups iff $s_f > \bar{s}_f$

Dampening due to incomplete pass-through

- Variance of sectoral price assuming iid shocks with variance σ^2

- Constant markups (Gabaix 2011)

$$Var\,[dp] = \sigma^2 \sum_f (s_f)^2 = \sigma^2 HHI$$

- Variable markups (Burstein-Carvalho-Grassi 2020)

$$Var\,[dp] = \sigma^2 \sum_f \left(\frac{\alpha_f s_f}{\sum_{f'} \alpha_{f'} s_{f'}} \right)^2$$

- If $\alpha_f \searrow$ in s_f, variance is lower under variable markups

- Intuition: pass-through rates are lower for larger firms, effectively reducing weight of large firms in the price index