Discussion:
Search frictions in goods markets and CPI Inflation

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Paper Summary

- This paper constructs NK DSGE Model with
  - Monopolistically-competitive producers with price adjustment costs (Rotemberg and Woodford, 1982)
  - Two types of retailers: online and brick-and-mortar
  - Search and matching friction in the product market (Michaillat and Saez, 2015)
  - Endogenous firm entry/product variety a la Bilbiie et al (2008)
- Results:
  - Shifts in consumer preferences towards online retailers result in lower inflation
  - Modification in NK Phillips curve to reflect changes in consumption pattern
  - Highlight roles of online retail sale in lowering inflation during COVID
- Contribution: exploring how the shift in consumer preference towards online retailers impact passthrough to inflation and monetary policy

On the model setup

- Some inconsistency
  - The paper assumes that retailers buy all varieties (N_t).
  - However, the matching function implies a certain probability that a product is not sold to retailer ($1 - \mathcal{P}_{j,t} = 1 - \frac{Y_{j,t}}{N_t}$)
  - Should producers take into account this probability when making production decisions? Are there idle firms?

Calibration of the parameters governing search efficiency

- Difference in search efficiency (ζ_j) determines relative prices between online and offline products:

$$\frac{\rho_{O,t}}{\rho_{B,t}} = \frac{(1 - \frac{1}{\mathcal{Q}_{B,t}\zeta_B})}{(1 - \frac{1}{\mathcal{Q}_{O,t}\zeta_O})}$$

- Authors should discuss the calibration/estimation of these parameters in detail.
- This paper relies on the ratio of marketing costs to online sales. Do we also have observed data on relative prices of online goods?
- Should ζ_j be time-varying, and induce changes in relative online good prices over time?

Growth of online retail trade: demand or supply driven?

- In this paper, a shock to online retail sale share resembles consumer preference shock, which is a demand shock in nature
  - The arbitrage effects imply a positive correlation between online sales and online market tightness, and hence markup on online product prices, at least in the short run.
- Can growth in online sales be supply-driven? due to, for example, growth in online platforms or marketplace.
- Suggestion:
  - Data on online market tightness or markup can help identify shocks
  - Or, model firm choice of product distribution

On the empirical evidence

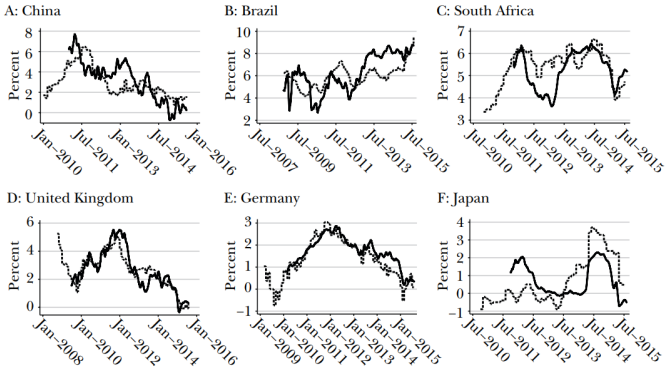
- Existing empirical evidence on relative prices between online versus offline products is rather inconclusive.
  - Cavallo and Rigobon (2016) - online and offline inflation are close, with smaller difference in developed countries like the UK and Germany
  - Cavallo (2017) - online and offline price levels are identical about 72 percent of the time (91 percent in UK)
  - Goolsbee and Klenow (2018) - US online inflation was about 1 percentage point lower than in the CPI for the same categories from 2014–2017.
  - Jo et al. (2022) - for Japan, e-commerce lowered relative inflation rates for goods sold intensively online.
- See also Manopimoke et al (2018), "Decoding the Low Inflation Conundrum with Online and Offline Price Data"
- Any evidence/data on online versus offline prices to support the model?

On the empirical evidence

Figure: Cavallo and Rigobon (2016)

Figure 4

Online versus Consumer Price Index (CPI) Annual Inflation Rates



Other potential extensions

- How has monetary policy transmission changed, given rising online retail trade?
  - ⇒ Could it be that prices adjust more flexibly in response to MP shocks?
- Examine other properties of online prices versus offline prices
  - ⇒ This paper mainly focuses on the difference in price levels
  - ⇒ Empirical literature also finds other discrepancies related to the frequency of prices changes and the sensitivity to shocks (Cavallo, 2018; Gorodnichenko and Talavera, 2014; Gorodnichenko et al., 2018)
  - ⇒ Perhaps assume different degrees of price stickiness (lower costs of nominal price adjustment facing online retailers)

Other comments

- Confounding effects in the local projection exercise, despite using COVID-19 death as instrument

  ⇒ Death → lockdown → decline in activity → falling prices

- Include aggregate demand shocks, given the focus on the COVID-19 episode
- Limitations of traditional CPI in capturing 'direct' relative price effects of online transactions, if any.

  ⇒ The matched-model approach may induce biases, causing the discrepancy between CPI and true costs of living
  ⇒ Rely more on online price dataset

- Transient effects of MP shocks. Is it due to too low persistence of interest rate? Use (shadow) policy rate data in the estimation