Optimal Monetary Policy during a Cost-of-Living Crisis

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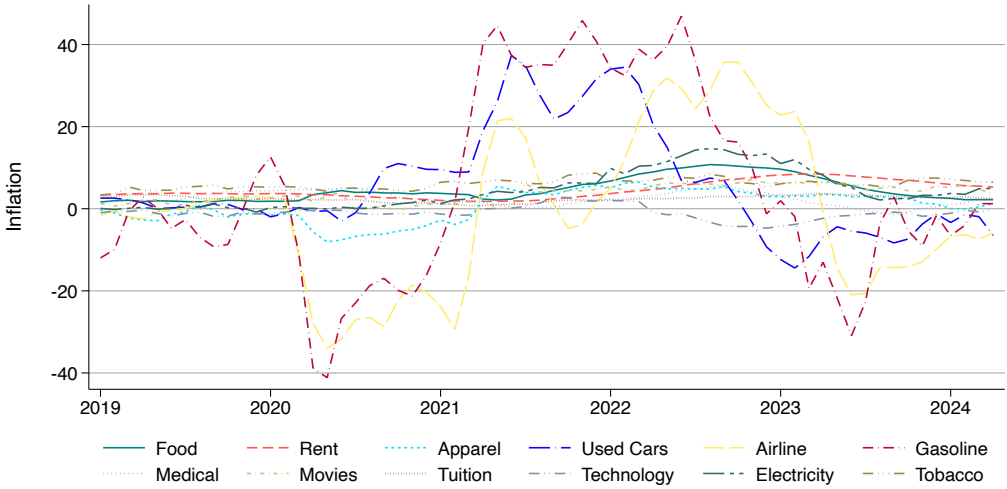
Motivation


Inflation
40
20
0
-20
-40
2019
2020
2021
2022
2023
2024
Food
Rent
Apparel
Used Cars
Airline
Gasoline
Medical
Movies
Tuition
Technology
Electricity
Tobacco

Motivation

- Recent years have seen large and volatile price changes across different consumption baskets
- Textbook models typically:
  - Abstract away from sector-specific prices
  - Assume identical consumption bundles across households
- This paper: how should monetary policy respond to “cost-of-living” crises?
- Answers this question by developing a model which features:
  1. Multiple sectors
  2. Household heterogeneity
  3. Non-homothetic preferences

Model Ingredients

- Households consume and supply labor. Sources of heterogeneity:
  - Incomplete markets and wealth (mortality risk; one period bonds only; HTM HHs)
  - Labor income (HHs differ in labor productivity)
  - Preferences over consumption (HHs preferences differ over non-homothetic bundles)

$$\implies x_t = E_t x_{t+1} - \varsigma^{-1}\left(i_t - \tilde{\pi}_{t+1} - r_t^*\right)$$

- Firms produce using intermediate goods and labor. Sources of inefficiencies:
  - Markups (monopolistically competitive producers)
  - Nominal rigidities (Calvo pricing frictions)

$$\implies \pi_{t,k} = \beta E_t \pi_{k,t+1} + \kappa_k x_t + \lambda_k u_{t,k}$$

Euler Equation(s)

- HH-specific Euler equation, which depend on idiosyncratic real rates

$$r_t(i) = i_t - \sum_{k=1}^{K} \frac{\partial e_k(i)}{\partial e(i)} \pi_{k,t+1}$$

- Aggregate Euler equation depends on $\tilde{\pi}_t$, the "marginal" CPI

$$\tilde{\pi}_t = \sum_{k=1}^{K} \left(\int \frac{e(i)}{E} \frac{\partial e_k(i)}{\partial e(i)} \, \mathrm{d}i \right) \pi_{k,t}$$

- HHs make marginal consumption/savings decisions on the basis of personal inflation rates
  - More reactive to inflation changes in marginal goods ("luxury" goods)

Phillips Curve(s)

- Sector-specific Phillips curves
- Heterogeneity and non-homotheticity implies endogenous "NKPC wedges"

$$u_{t,k} = \mathcal{NH}_t + \mathcal{M}_{k,t} - \mathcal{P}_{k,t}$$

- Non-homotheticity wedge arises from labor market distortions
  - Changes in relative prices induce changes in labor supply
- Endogenous markup wedge arises from time-variation in demand elasticities
  - Due to aggregate changes in expenditures as well as distributional changes across HHs
- Relative price wedge arises from multi-sector asymmetries
  - Eg, sector-specific productivity shocks or Calvo frictions

Monetary Policy Transmission

- Policy rate i_t enters all HH Euler equations identically (abstracting from HTM HHs)
- But real rates differ across HHs, so a change in the policy rate induces differential consumption-savings decisions
- Beyond affecting output gap, policy can (potentially) target NKPC wedges by
  - Changing the wealth distribution
  - Changing relative prices
- However, in general monetary policy cannot achieve first-best
- Failures of divine coincidence due to endogenous markups driven by time-variation in demand elasticities
- Quantitative optimal policy:
  - Policy is more accommodative of "necessity" shocks
  - Redistribution motive implies more front-loaded accomodation

Comments

0. Fantastic paper. Extremely rich transmission of endogenous NKPC wedges
1. Source of shocks
2. Fiscal policy
3. Asset markets

1. Source of Shocks

- The paper focuses on aggregate and sector productivity shocks
- Public debate regarding current inflationary pressure seems to focus on:
  - Supply-side frictions
  - Demand-side pressure
- The model seems well-suited to study the differences between different “types” of inflationary regimes

2. Fiscal Policy

- Is conventional monetary policy the right tool for the job?
- Very blunt tool; as the paper shows, in many cases short rate policy cannot affect wedges at all
- Fiscal policy seems better suited?
  - Tax/subsidies at sector level (either directly through firms, or through HH expenditure)
  - Income-based taxation directly targets inequality
- Note: results already require a quite sophisticated set of fiscal tools used to eliminate steady-state distortionary markups

3. Asset Markets

- What is the role of market incompleteness?
- With a richer set of tools, can monetary policy partially complete markets?
- The paper stresses the non-homotheticity-implied differential real rates. Is this the most relevant source of variation for monetary policy?
  - Kamdar and Ray (2024) market segmentation and imperfect risk-sharing
  - Firm/sector borrowing also seems like an important policy lever
  - HANK "real income channel"
- Seems to suggests additional roles of unconventional policy?

Concluding Remarks

- Really nice paper!
- Read it; you will learn a lot about what you've implicitly been assuming with your textbook CES models!
- Rich dynamics of endogenous PC wedges are a great addition to NK literature
- When studying the optimal MP response to the current cost-of-living crisis, there may be other more pressing channels/tools