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SHOPPING, DEMAND COMPOSITION, AND EQUILIBRIUM PRICES
The Idea

Significant dispersion in posted retail prices for identical products (20% of avg. price at the barcode level).

In the goods market, heterogeneous households...
... do not pay the same price for identical products (search for prices).
... do not buy the same basket of products (non-homotheticities).

- retailer: optimal markup (posted price) changes with demand composition
- equilibrium: posted price distributions depend on the distribution of households

This paper:
1. How does household heterogeneity affect posted retail prices?
2. What are the consequences for inequality?
3. What are the implications for the response of prices to aggregate shocks?

Theory

Equilibrium theory of expenditure inequality and price dispersion:
- idiosyncratic income risk and endogenous asset distribution
- non-homothetic preferences \(
\rightarrow \) differences in consumption baskets
- search frictions: HHs draw at random from posted price distribution
- retailers post prices and trade off higher margin vs. higher sales \(
\rightarrow \) multiple endogenous price distributions

Main mechanism: retailers target demand weighted search effort

- composition of demand determines average price elasticities
- lower avg. posted prices if product bought by high-search HHs
- skewness of price distributions increases only in search effort
- driven by share of low vs. high prices tracking retailers' tradeoff \(
\rightarrow \) testable condition for main mechanism

Data

Nielsen Consumer Panel:
- barcode-level quantity & price of HHs' grocery transactions
- information on HHs: income, location, age, size, ...
- information on products (barcode): type, brand, size, ...

Test the mechanism:
- skewness of price distributions by barcode-region-quarter
- proxy for search effort with demand share of high-/low- search HHs
- control for product type and region-quarter FE

Retailers’ Optimal Price Posting Reduces Inequality

Decomposition of expenditures:
- price differences within same product
- price differences across close substitutes

\rightarrow \) price differences within product \& close substitutes explain \( \sim 10\% \) of inequality in grocery spending

Contribution of price search to inequality:
- direct effect of price search: pay less for same product
- equilibrium effect: lower average price if others search
- part of difference in avg. price across varieties
- disentangle from "cost of quality" (marginal cost)

\rightarrow \) search frictions account for 50\% of price differences (25\% direct / 25\% equilibrium effect)

Response of Prices Changes with the Incidence of Aggregate Shocks

Empirical evidence on cyclicity of retail prices/markups:
- acyclical to unemployment: Anderson et al. (2020), Colibin et al. (2015)
- procyclical to house prices: Stroebel and Vavra (2019)

This paper: incidence of demand shocks matters for cyclicity
- simulate incidence of earnings and wealth losses during Great Recession
- wealth losses concentrated among rich households
- earnings losses (unemployment) concentrated among poor households
- search frictions generate 0.6pp fall in retail prices on impact
- response accounted for (almost) entirely by wealth losses

\rightarrow \) differential response driven by changing demand composition:
- earnings losses realize relative demand to high-income (low search) HHs
- reallocation of demand offsets higher search effort by low income HHs
- for wealth losses both effects increase demand weighted search effort