

Discussion of  
“Inflation and Price Dispersion: New Cross-Sectoral and  
International Evidence” by Santiago E. Alvarez-Blaser

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Bank of Canada

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The views expressed herein are mine and are not necessarily those of the Bank of Canada

# Welfare cost of inflation and price dispersion

- Inflation erodes real consumption
  - ◇ Inflation of consumption basket in United States peaked at 9% in June 2022
- Substantial dispersion of prices in the basket (Kaplan and Menzio, 2015)
  - ◇ Across categories: non-durables vs durables vs services
  - ◇ Across retailers: premium vs value stores, brick-and-mortar vs online
  - ◇ Within retailers: cheap vs expensive brands, regular vs discounted
- Key statistic: covariance of price dispersion and inflation
  - ◇ Outcome of firms and households decisions
  - ◇ Helps understand the nature of welfare cost of inflation
  - ◇ E.g., sticky prices imply price dispersion rises with inflation

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## Paper addresses two key challenges

- **Data challenge:** lack of detailed data on price dispersion
  - ◇ Households substitution is within categories, not across
  - ◇ Large dispersion for highly substitutable products within categories
- **This paper:** scraped data for restaurants/supermarkets
  - ◇ 16 countries, range of inflation rates (**short sample**)
  - ◇ Large number of highly substitutable products
  - ◇ Across and within restaurants/supermarkets
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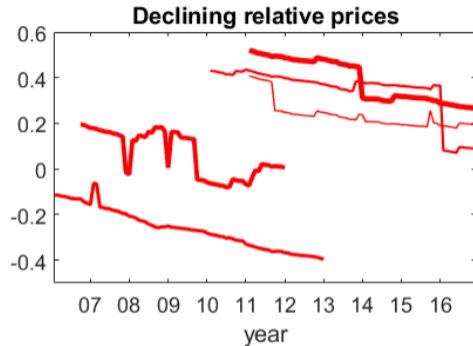
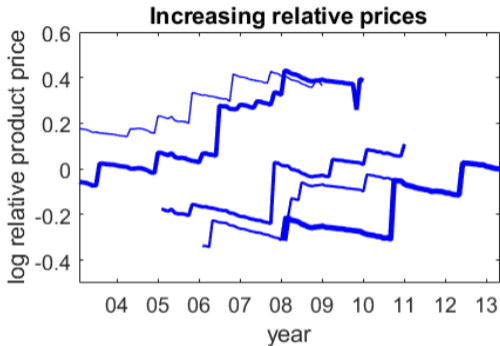
- **Theory challenge:** hard to identify/quantify the source of inefficiency
  - ◇ Market failures: goods market, input markets
  - ◇ Constraints: information, cost of searching/shopping, cost of price adjustments
- This paper: focus on price rigidity
  - ◇ Uses approach in Adam, Alexandrov, Weber (2024)
  - ◇ Finds inefficiency increases with inflation

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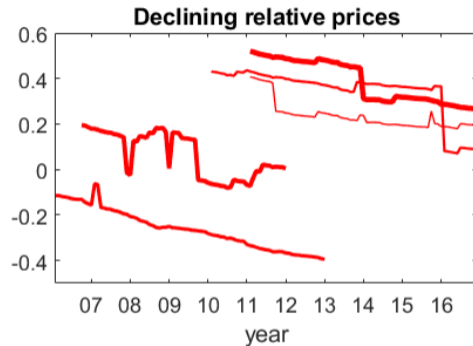
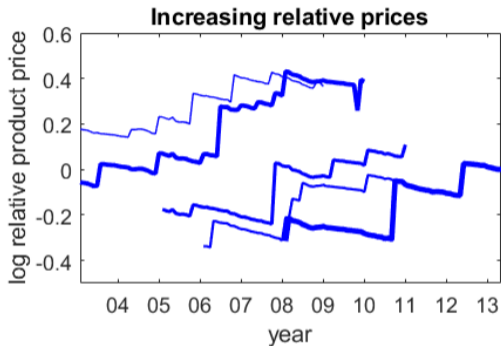


# Idea in Adam, Alexandrov, Weber (2024)



- $\underbrace{\ln p_{it}}_{\text{Relative price}} = \underbrace{\ln p_i^* + t(-\ln \Pi_i^*)}_{\text{Flex relative price } P_{it}^*/P_t} + \underbrace{\varepsilon_{it}^*}_{\text{Inefficiency}} + \underbrace{gap_{it}}_{\text{Inefficiency}}$
- Fitting a time trend gives  $\ln \Pi_i^*$  and  $\text{residual}_{it} = \varepsilon_{it}^* + gap_{it}$

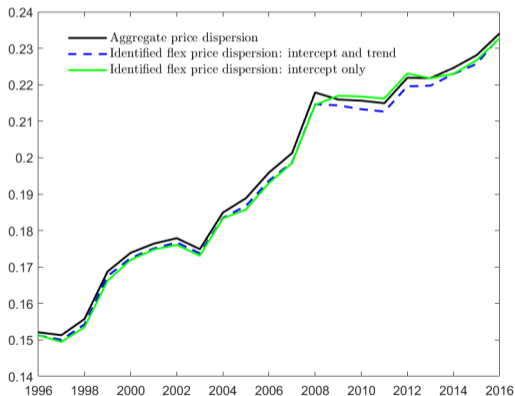
## Idea in Adam, Alexandrov, Weber (2024)



- Assume  $\varepsilon_{it}^*$  are **stationary** and  $\text{Var}(\varepsilon_{it}^*)$  is **orthogonal** to inflation
- Testable prediction:  $\text{Var}(gap_{it}) = \text{const} + c_i(\ln \Pi - \ln \Pi_i^*)^2$

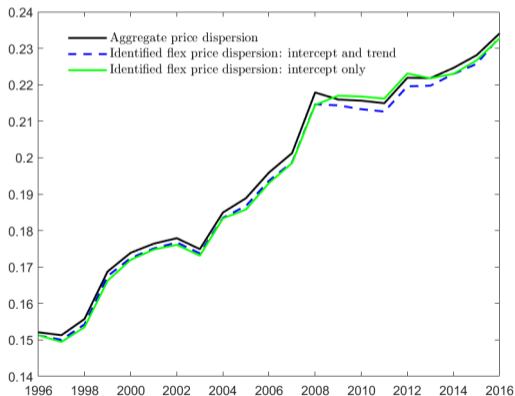
## Comment 1: How much of dispersion is due to price rigidity?

- Agg price dispersion:  $Var(\ln p_{it}) = Var(\ln p_i^* + t(-\ln \Pi_i^*)) + Var(\varepsilon_{it}^* + gap_{it})$
- AAW find price rigidity accounts **< 1%** of agg price dispersion
- Dispersion in  $\ln p_i^*$  captures product quality/innovation, or markups



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## Comment 2: Other sources of inefficiency?

- If paper corroborates AAW, price rigidity **not important for welfare cost**
- Would be useful to exploit richness of the data to think of other inefficiencies
  - ◇ **Inefficiencies in  $\ln p_i^*$** : fashion/novelty markups (Bils, QJE 2009)
  - ◇ Assess how local competitors adjust prices (**strategic pricing complementarities**)
  - ◇ Sara-Zaror (2021):  $\Upsilon$ -shaped relationship informative about **search constraints**
  - ◇ Go deeper into why the standard menu cost model is **at odds with results**

## Comment 3: Does within-category dispersion influence the results?

- AAW and most theories based on dispersion **across firms**
  - ◇ Like AAW, empirical studies find price dispersion **rises** with inflation
- *Within-category* dispersion is as large and important for households
- **Cavallo-Kryvtsov (2024)** study within-category price dispersion in 2018–2024

Categories | Dairy, Eggs & Cheese | Eggs



**\$1<sup>18</sup>** 19.7 ¢/count

Value Large White Eggs, 6 Count



**\$3<sup>96</sup>** 33.0 ¢/ea

Organic Cage-Free Large Brown Eggs, 12 Count



**\$6<sup>12</sup>** 51.0 ¢/ea

Pasture Raised Grade A Large Brown Eggs, 12 Count



**\$2<sup>98</sup>** ~~\$3.38~~ 30.6 ¢/oz

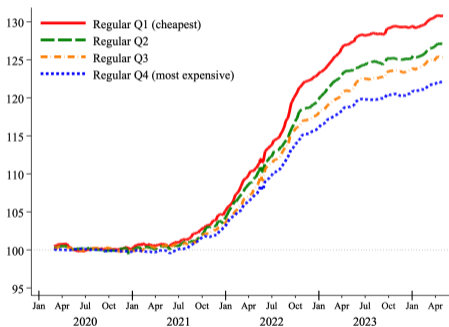
Farms Hard-Boiled Eggs, 9.75 oz

## Can consumers “escape” inflation by switching to cheaper varieties?

- Within URL-unit categories: rank products by avg unit reg price in 2019
- For each quartile construct a fixed-weight regular price index

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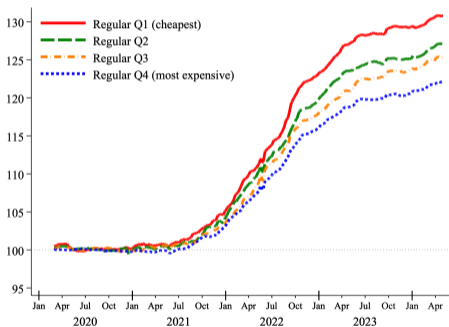


Regular price index, by quartile (United States)

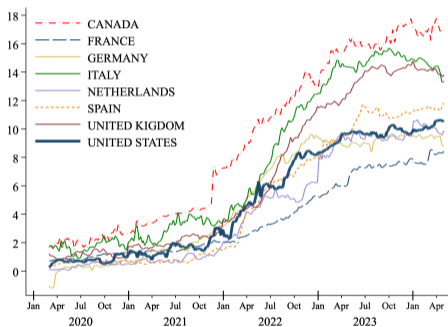


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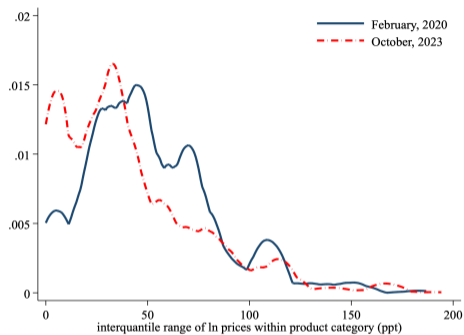


Regular price index, by quartile (United States)



Cheapflation: Q1-Q4 inflation since Jan 2020

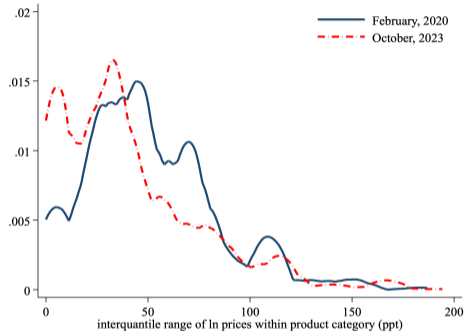
# Within-category unit price dispersion



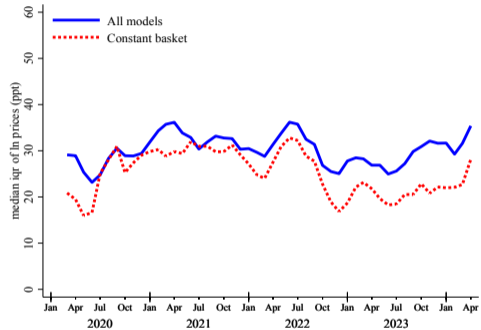
Unit price IQR across categories

United States, posted prices

# Within-category unit price dispersion is flat or decreasing



Unit price IQR across categories



Median IQR

United States, posted prices

# Conclusions

- Very interesting paper, novel and exciting dataset!
- Dig deeper into inefficiencies that are more important than price rigidity
- Incorporate analysis of within-category price dispersion