Greater Than the Sum of Its Parts:

Aggregate vs. Aggregated Inflation Expectations

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Discussion by Margaret M. Jacobson (Federal Reserve Board) November 10-11 - 25th Annual De Nederlandsche Bank Research Conference

The views presented are those of the discussant and do not reflect those of the Federal Reserve Board, the Federal Reserve System or their staff.

- This survey investigates the consistency of households' inflation expectations  $\Rightarrow$  expectations are a key determinant of inflation in New Keynesian models
- Models typically assume full information rational expectations (FIRE)
- Departing from FIRE can alter model results/policies, surveys guide departure
- This paper: quantify how behavioral inconsistencies affect estimates of IES
  ⇒ rep. agents: intertemporal substitution main channel for policy to affect hhs
  ⇒ reflect actual behavior by adjust existing parameters rather than adding more

## FIRE test: do expectations consistently aggregate across categories?

- 1. Elicit aggregate inflation expectations for respondent *i*:  $\mathbb{E}_t^i$  [ $\pi_{t+1}$ ]
- 2. Elicit respondent *i*'s expectations for category k:  $\mathbb{E}_t^i [\pi_{k,t+1}]$
- 3. For aggregation weights  $\{\omega_k^i\}_{k=1}^{11}$ , test:

$$\underbrace{\mathbb{E}_{t}^{i}\left[\pi_{t+1}\right]}_{\text{aggregate}} = \underbrace{\sum_{K} \omega_{k}^{i} \mathbb{E}_{t}^{i}\left[\pi_{k,t+h}\right]}_{\text{aggregated}}$$

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- Salience: consumers grocery shop and pump gas most often
  - D'Acunto et al. (2021b), Binder (2016, 2021), Binder & Makridis (2022), Campos et al. (2022), Berge (2018)



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- Official: lower gasoline weight  $\Rightarrow$  more inconsistency?

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- Correlation with high-freq. indicators: do retail prices and expectations co-move?
  - $\Rightarrow$  PriceStats daily CPI: webscraped prices from retailers, best grocery approx.
  - $\Rightarrow$  Both the daily CPI & expectations rise months before official index



• Correlation with publicly available high-frequency indicators: breakeven inflation or specific sectors



Source: Dietrich et al. (2022), U.S. Treasury

#### Comment 3: education by age cohort

- Michigan Survey inflation expectations are surprisingly high throughout the 2000's
  - this paper: demographic heterogeneity in aggregation inconsistency can inform
- Aggregation inconsistency decreases with wage & education
  - no interaction terms even though younger individuals are more likely to be educated



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- Survey follows SCF/HIEP for question phrasing best practices
  - respondents tend to choose "stays the same," best to not include it
  - wording matters: "inflation" instead of "prices"

- Daily household inflation expectations survey of about 20,000 observations
- Paper explores if households' inflation expectations consistently aggregate
  ⇒ key assumption of full information rational expectations (FIRE)
- Results do not support FIRE: behavioral expectations least inconsistent
- Estimate IES from spending plans: allows models to reflect actual household behavior by adjusting parameter rather than adding free parameters