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Beyond Groceries: Forecast Confidence and the Gender Gap in Inflation Expectations

EUROPEAN CENTRAL BANK

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Beyond Groceries: Financial Confidence and the Gender Gap in Inflation Expectations

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Why do women have higher inflation expectations?

Groceries:

Exposure

Women in traditional household roles are more exposed to food prices (Jonung,1981; D'Acunto et al., 2021)

Beyond Groceries:

Confidence

Women have lower confidence in their financial skills (Bucher-Koenen et al., 2024) and thus report more rounded, less precise forecasts (Binder, 2017; Reiche and Meyler, 2022)

Confidence x Exposure

Only those with low financial confidence rely on grocery signals.

Why does it matter?

Micro: Women's high inflation expectations drive up to 30% of their lower willingness to spend on major items and 60% on luxuries

Macro: Approx 50% of the population but ≥ 70% of consumer spending in advanced economies (Silverstein and Sayre, 2009)

Price Signals and Forecaster Confidence in a Bayesian Framework

A representative agent is asked to forecast inflation θ.

She has a prior:
$$\log \theta \sim \mathcal{N}\left(\mu_0, \frac{1}{\tau_0}\right)$$

Confidence $\quad \dfrac{d\mathbb{E}(\theta|x)}{d\tau_0} < 0 \iff \mu_0 - \log x < \dfrac{1}{2\tau_x}$

Receives an unbiased signal: $\log x = \log \theta + \epsilon,$
$$\text{where } \epsilon \sim \mathcal{N}\left(0, \frac{1}{\tau_x}\right)$$

Exposure $\quad \dfrac{d\mathbb{E}(\theta|x)}{d\tau_x} < 0 \iff \log x - \mu_0 < \dfrac{1}{2\tau_0}$

Her Bayesian posterior: $\log \theta|x \sim \mathcal{N}\left(\hat{\mu}, \frac{1}{\hat{\tau}}\right)$

For a given log x, whenever $\mu_0 \in [\log x - \frac{1}{2\tau_0}, \log x + \frac{1}{2\tau_x}]$ the agent's inflation expectation are increasing in both, higher signal volatility and prior imprecision. Otherwise, the agent's inflation expectation are increasing in either higher signal volatility or prior imprecision.

Grocery Shopping and Financial Confidence in the Data

<u>Main Dataset</u>

BOP-HH 2020 - 2022

<u>External Validity</u>

SCE 2013 - 2023

MSC 1978 - 2022

Exposure: Grocery Shopping

In your household, who is primarily responsible for

- everyday purchases (groceries)?

- decisions on savings and financial assets?

Confidence: Rounding

Indicates low confidence in precise forecasting (Krifka, 2007).
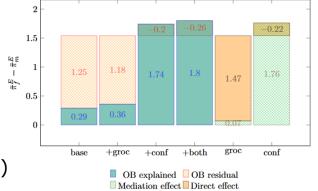
Predict using rounding in other forecasts:

$\text{Confidence}_i = 1 - \text{prob}\widehat{\text{round}}_i = 1 - \dfrac{1}{1 + e^{-(\hat{\alpha}_0 + D_i\hat{\beta} + X_{ki}\hat{\gamma})}}$
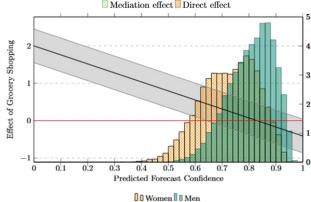
Result I: Confidence is the main driver of the gender gap in inflation expectations. Had women and men the same confidence, the gap would be negative.

✓ Simple interaction of *Confidence* and *Exposure* with *Female*

✓ Decomposition of the Gender Gap (Oaxaca-Blinder, 1973, MacKinnon 2012)

Result II: Grocery shopping increases inflation expectations for a small share of consumers with low forecast confidence (~ 11%), dominated by women.

✓ Simple interaction of *Confidence with Exposure*

Verifying the Mechanism

1. Posterior mean increases as posterior uncertainty increases

✓ Low confidence increases interquartile range of probabilistic forecast

2. Posterior variance affects mean due to the right skew

✓ Gender gap is driven by the right skew in expectations

Further support for the Confidence Hypothesis

1. There are significant gender gaps between singles and non-singles

2. The gender gap in point forecasts reduces in response to high or volatile food prices.

3. The gender gap is smaller when asked about food prices than when asked about the full basket. It increases for inflation of educational services.

Confidence gaps matter

✓ The gender gap in inflation expectations causes a large negative gap in expected real rates.

✓ The gender gap in spending intentions can be attributed largely to the gender gap in inflation expectations.

Policy Implication: Financial literacy (of women) matters for central banks

✓ The confidence gap is present only amongst women with low financial literacy