THAT'S WHAT SHE SAID

An Empirical Investigation on the Gender Gap in Inflation Expectations

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Why do women have higher inflation expectations?

An empirical fact whose causes matter for (a) women's investment for retirement and (b) effectiveness of monetary policy communication

1. Bayesian Framework

Prior:

$$\theta \sim \text{LogNormal}\left(\mu_j^{i,0}, \frac{1}{\tau_j^{i,0}}\right)$$

$$\tau_j^{i,0} = \tau^0 - \delta_j^i \qquad \delta_j^i \sim \mathcal{N}(\bar{\delta^i}|\sigma_\delta)$$

$$\mu_j^{i,0} = \mu^0 + \frac{\delta_j^i}{\tau^0(\tau^0 - \delta_j^i)}$$

Signal:

$$x_j^i|\theta \sim \text{LogNormal}\left(\mu_j^{i,x}, \frac{1}{\tau_j^{i,x}}\right)$$

$$\tau_j^{i,x} = \tau^x - \epsilon_j^i \qquad \epsilon_j^i \sim \mathcal{N}(\bar{\epsilon^i}|\sigma_\epsilon)$$

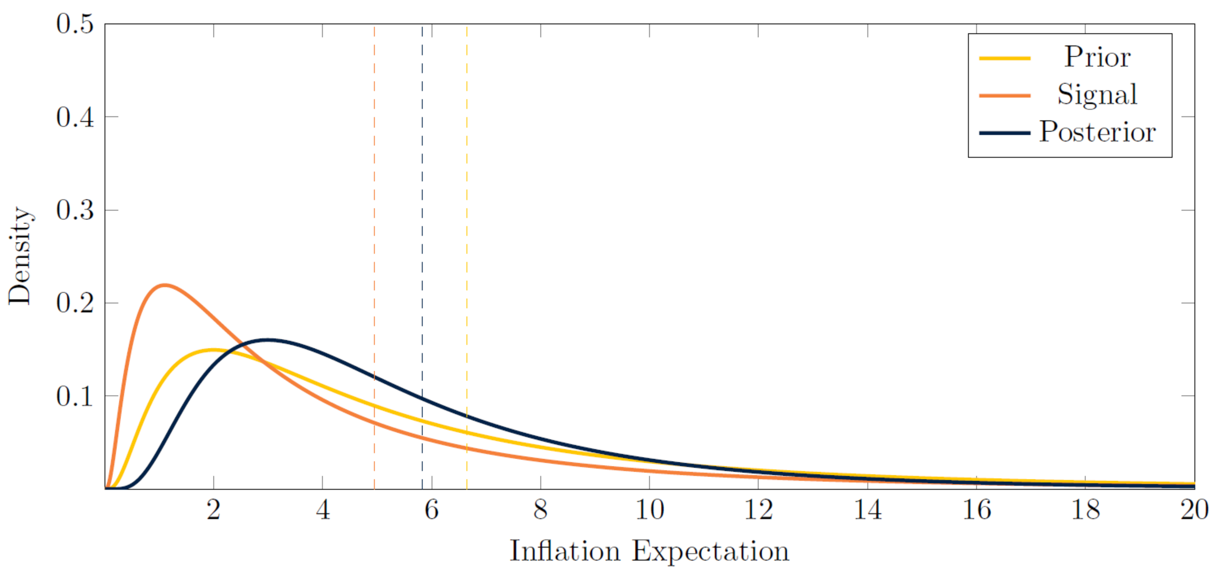
$$\mu_j^{i,x} = \ln(\theta) - \frac{1}{2\tau_j^{i,x}}$$

Posterior

$$\theta|x_j^i \sim \text{LogNormal}\left(\hat{\mu}_j^i, \frac{1}{\hat{\tau}_j^i}\right)$$

$$\hat{\mu}_j^i = \frac{\mu_j^{i,0}\tau_j^{i,0} + \ln(x_j^i)\tau_j^{i,x} + \frac{1}{2}}{\tau_j^{i,x} + \tau_j^{i,0}}$$

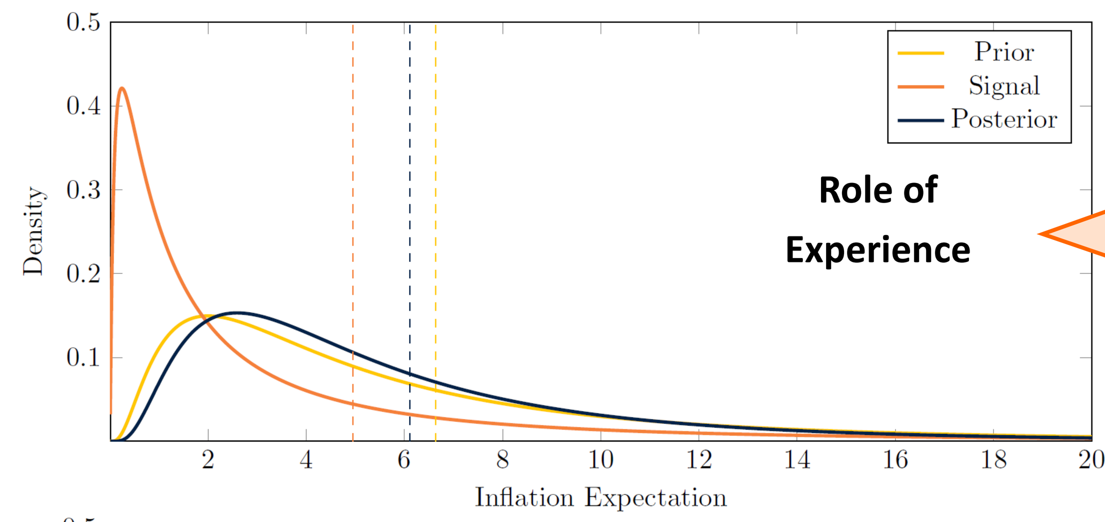
$$\hat{\tau}_j^i = \tau_j^{i,0} + \tau_j^{i,x}$$



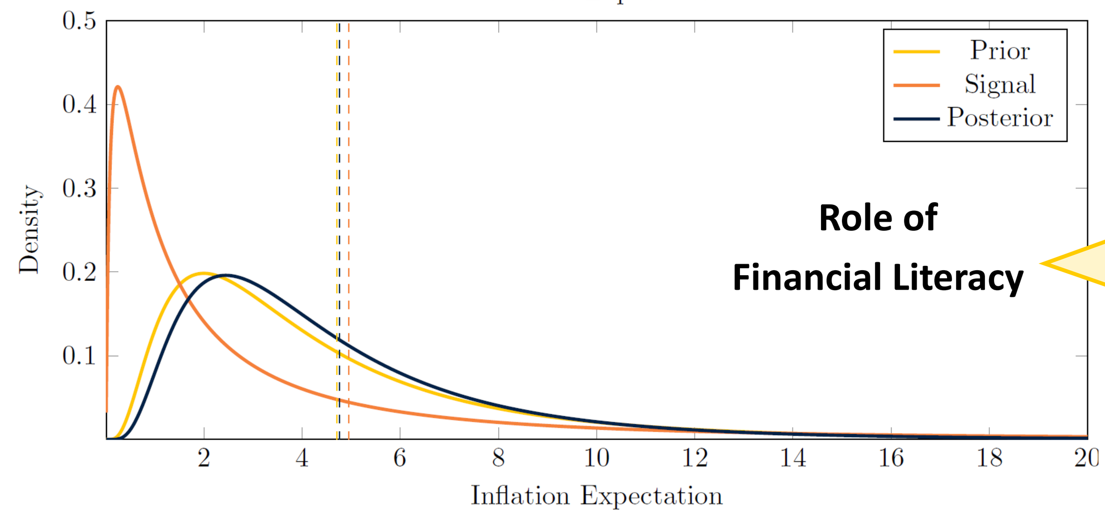
Proposition 1.1 *If $\bar{\epsilon^M} < \bar{\epsilon^F}$ it will be that $\mathbb{E}(\theta|x_j^F) > \mathbb{E}(\theta|x_j^M)$ whenever $\mu_j^{F,0} + \frac{1}{\tau_j^{F,0}} > \ln(x_j^F)$*

Proposition 1.2 *If $\bar{\delta^M} < \bar{\delta^F}$ it will be that $\mathbb{E}(\theta|x_j^F) > \mathbb{E}(\theta|x_j^M)$ whenever $\ln(x_j^i) + \frac{2}{\tau_j^{i,x}} + \frac{1}{\tau^0} > \mu_0$*

Proposition 1.3 *The effect of shocks to prior and signal precision, δ_j^i and ϵ_j^i, on inflation expectations is complementary.*



Increasing signal volatility may increase the posterior mean...



...but whether it will do so depends on the tightness of the prior!

2. Empirics

Bundesbank Online Panel (BOP-HH)

Timing: April 2020-September 2022

Participants: 2.000 German households/month

1. **„Inflation"** qualitatively (5 point scale), quantitatively and probabilistically + short definition
2. **Financial literacy test** in January 2022
3. **Grocery shopping** since April 2021

FRBNY Survey of Consumer Expectations (SCE)

Timing: June 2013-November 2020

Participants: 1.200 US households/month

1. **„Inflation"** qualitatively (3 point scale), quantitatively and probabilistically
2. **Financial literacy test**

Michigan Survey of Consumers (MSC)

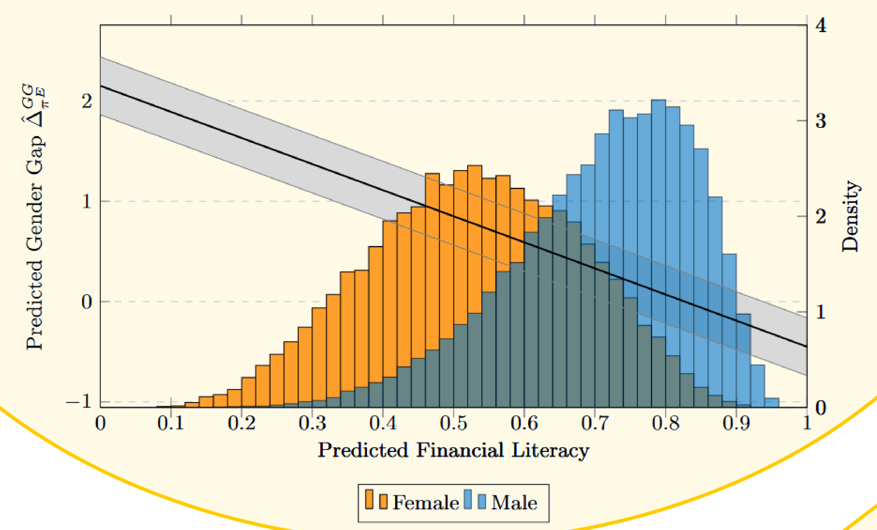
Timing: June 1978-December 2022

Participants: 500 US households/month

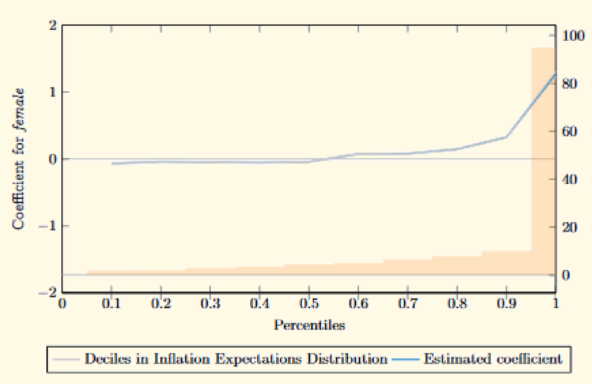
1. **„Prices in general"** qualitatively (3 point scale) and quantitatively (probing if expectation >5%)

Mechanism: Gender Gaps in Financial Literacy

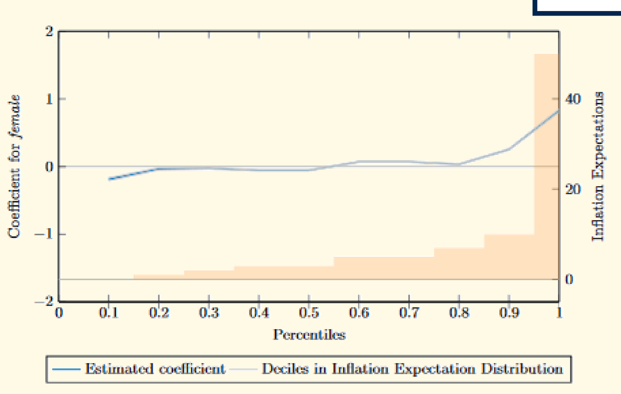
Observation 2.1: The gender gap in inflation expectations diminishes as financial literacy increases.



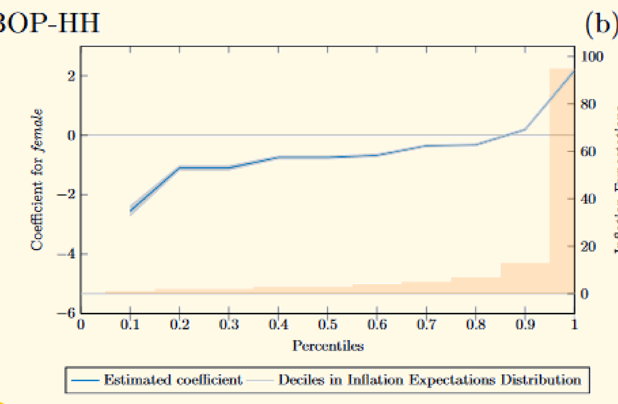
Observation 2.2: The gender gap in means is driven by the heavy tail in the female distribution. When the sample is restricted to the lowest 50% of inflation expectations, there is no positive gap.



(a) BOP-HH



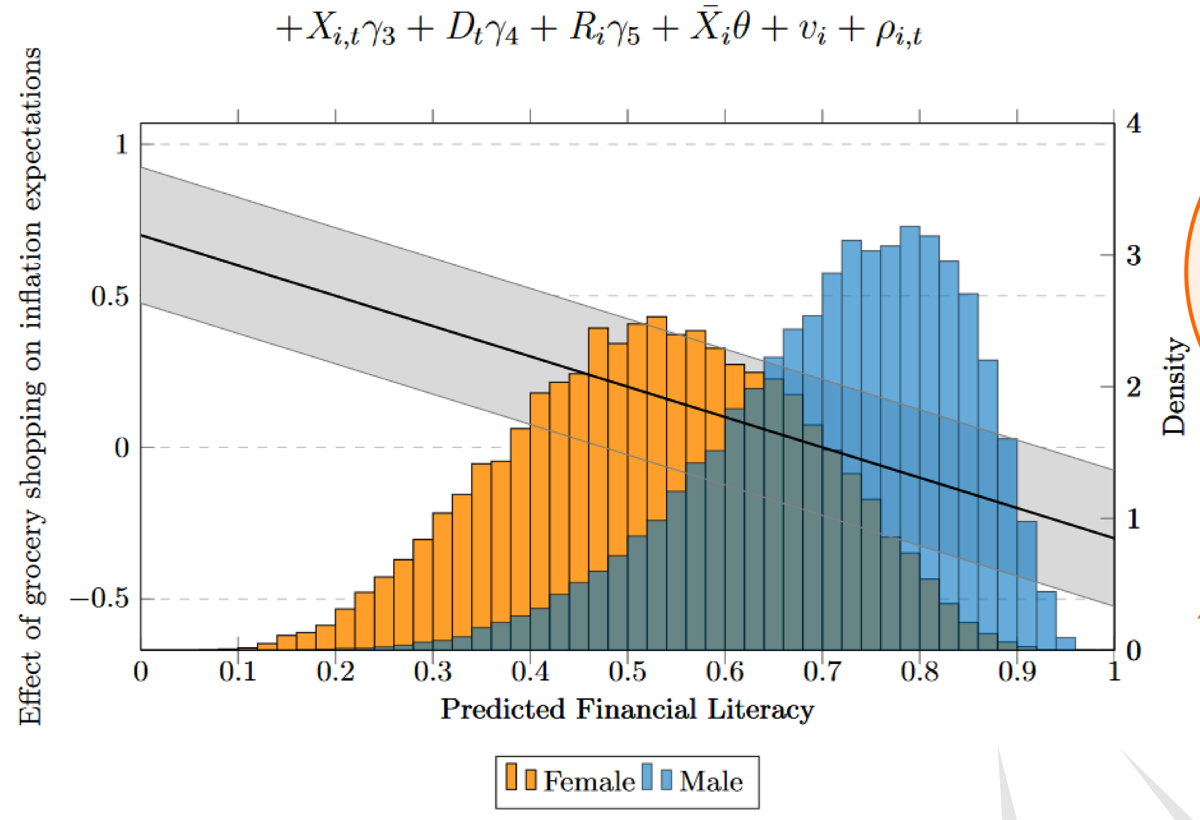
(b) MSC



(c) SCE

Key Result: Financial Literacy and Experience

$$\pi_{i,t}^E = \beta_0 + \beta_1 female_i + \beta_2 P(\hat{test} = 3)_{i,t} + H_i\gamma_1 + P(\hat{test} = 3)_{i,t} \times H_i\gamma_2$$
$$+ X_{i,t}\gamma_3 + D_t\gamma_4 + R_i\gamma_5 + \bar{X}_i\theta + v_i + \rho_{i,t}$$



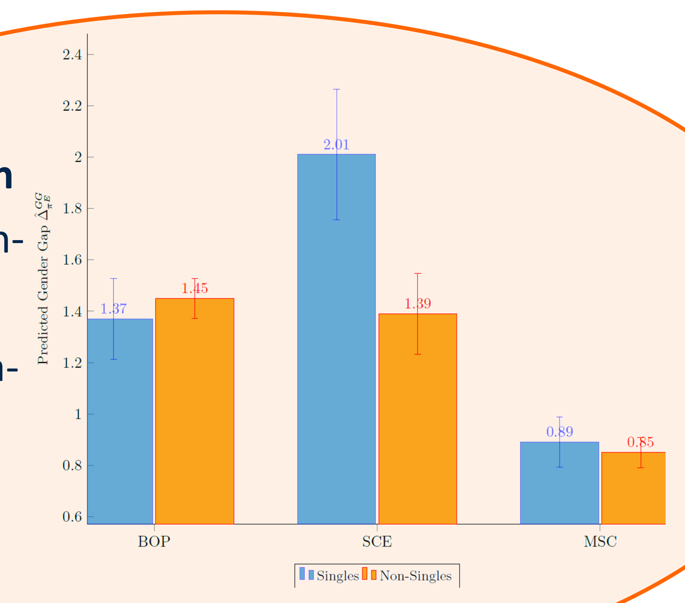
Result: Grocery shopping increases inflation expectations only for individuals in the lowest quintile of the financial literacy distribution (bottom 18.4%)which is dominated by women (share 81.4%).

Behavioral consequences?

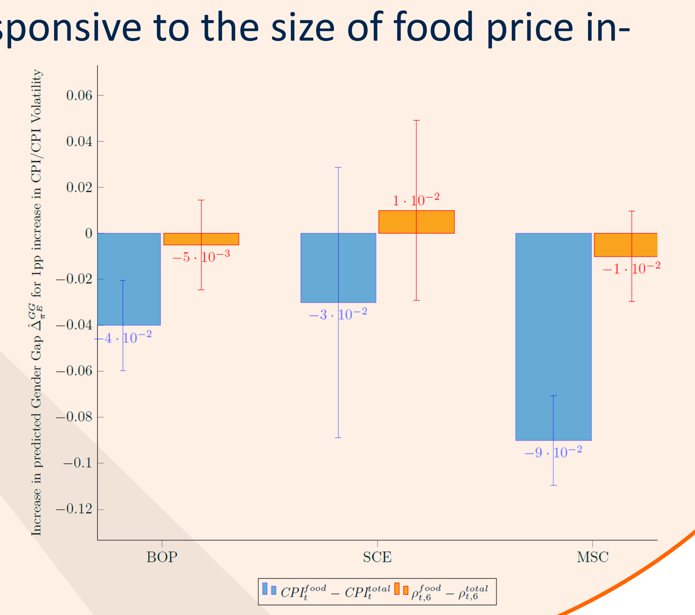
Consequences for policy?

Robustness

Observation 2.3: The gender gap is not significantly smaller for singles.

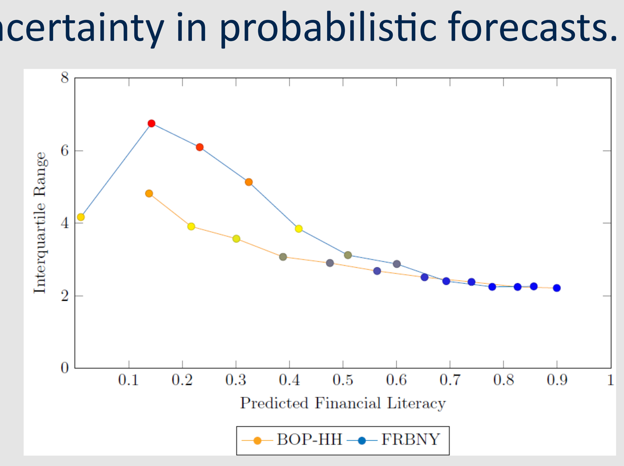


Observation 2.4: The magnitude of the gender gap is unresponsive to the size of food price inflation relative to total inflation.



Assumptions verified: There are gender gaps in grocery shopping and financial literacy as predicted by previous literature (Bucher-Koenen et al. 2014; D'Acunto et al. 2021).

Theoretical mechanism verified: Low financial literacy is correlated with high uncertainty in probabilistic forecasts.



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