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Monetary Policy Communication and Social Identity: Evidence from a Randomized Control Trial*

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Abstract

This paper investigates how social identity influences the assimilation of monetary policy information. We conduct a randomized control trial in Japan to test whether consumers respond more strongly to inflation forecasts from the Bank of Japan (BOJ) when the message is delivered by a narrator who shares their social identity. Respondents are randomly assigned to hear the BOJ's forecast in either standard Japanese or the Osaka dialect, both narrated by a female speaker. We find that individuals are significantly more likely to revise their inflation expectations toward the BOJ's forecast when the narrator shares the respondent's gender, dialect, or political alignment. Women are more responsive to forecasts delivered by a female narrator; Osaka residents react more strongly to messages in the Osaka dialect; and government supporters exhibit greater belief updating in response to BOJ forecasts. These findings suggest that central banks can enhance the effectiveness of their communication by tailoring messages to align with the social identities of target audiences, although it is essential to recognize potential risks.

JEL Classification: D84; E31; E52; E58; E71

Keywords: homophily; imperfect information; inattention; monetary policy; policy communication; political preferences; social identity

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1 Introduction

Expectations play a central role in modern macroeconomic analysis. A growing body of literature highlights the heterogeneity in consumer and firm expectations, as evidenced by studies using survey data (Mankiw et al., 2003; Coibion and Gordnichenko, 2012; Weber et al., 2022; Kumar et al., 2023).[1] This heterogeneity arises from factors such as sticky information (Mankiw and Reis, 2002), rational inattention (Sims, 2003), noisy information (Mackowiak and Wiederholt, 2009), differing priors (Patton and Timmermann, 2010), and strategic interactions (Morris and Shin, 2002). Heterogeneous expectations have important implications for consumption behavior (Crump et al., 2022), policy effectiveness under dispersed information (Angeletos and Pavan, 2008), and the performance of heterogeneous agent New Keynesian (HANK) models (Kaplan et al., 2018). Policymakers are paying increasing attention to subjective expectations—particularly inflation expectations—given their importance for the transmission and credibility of monetary policy.

Heterogeneity in inflation expectations reduces the effectiveness of policy announcements (Angeletos and Lian, 2018; Coibion et al., 2023a,b). This raises a critical question: how can central bank communications mitigate such heterogeneity and more effectively anchor expectations? To address this, our study examines the role of social identity in shaping information acquisition. Specifically, we investigate how shared identities—such as gender, dialect, or political preferences—influence the extent to which individuals incorporate the Bank of Japan's inflation forecast into their expectations.

Using a randomized control trial (RCT), we conducted an information-provision experiment in which the dialect of the information provider was varied. Respondents were presented with the Bank of Japan's inflation forecast in audio format, delivered in either standard Japanese or the Osaka dialect by the same female narrator. This experimental design enables us to test whether shared social identities increase attention to information and facilitate belief updating. For example, consumers may respond more strongly to information delivered by individuals who share their gender, dialect, or political preferences, leading to a convergence of expectations toward the central bank's forecast.

Our study builds on a growing literature that employs RCTs to examine belief formation across various domains, including inflation expectations (Binder and Rodrigue, 2018; Armantier et al., 2016; Cavallo et al., 2017; D'Acunto et al., 2021; Coibion et al., 2023b), housing markets (Armona et al., 2019; Fuster et al., 2022), and stock price forecasts (Beutel and Weber, 2022). These studies demonstrate that attention, trust, and demographic proximity play important roles in shaping belief heterogeneity (Ehrmann et al., 2013; Christelis et al., 2020; Niizeki, 2023; D'Acunto et al., 2021; Fehr and Hoff, 2011). Our contribution is to explicitly test the role of social identity as a determinant of both belief formation and attention allocation.

The experimental design consists of three stages: elicitation of prior inflation expectations, provision of the BOJ's forecast, and elicitation of posterior expectations. We assess whether respondents revise their beliefs toward the BOJ's forecast, particularly when the information source shares their social identity.

Our results yield three key findings. First, women are more likely to anchor their inflation

[1] As for the heterogeneity in the Japanese case, Diamond et al. (2020) and Kikuchi and Nakazono (2023) analyze consumers' expectation formation, while Nakazono et al. (2020) and Tanaka et al. (2020) focus on the formation of firms' beliefs.

expectations to the BOJ's forecast when it is delivered by a female narrator. Second, Osaka residents respond more strongly when the forecast is conveyed in the Osaka dialect. These findings underscore the role of homophily—defined as the tendency to assimilate information more readily from sources with shared social traits—consistent with prior work (Stolper and Walter, 2019; Mian et al., 2023). Third, respondents who strongly support the sitting Cabinet exhibit greater responsiveness to the BOJ's forecast. While this may reflect a form of identity-based proximity, it is likely driven more by confirmation bias or perceived institutional alignment than by classical homophily.

The remainder of the paper is structured as follows. Section 2 describes the research design and data. Section 3 presents the effects of the information treatment. Section 4 explores the role of social identity in belief formation. Section 5 introduces a theoretical model to interpret the empirical findings. Section 6 concludes with policy implications.

2 Research Design and Data

This section outlines the research design and provides an overview of the data utilized in the analysis. Further details on the survey instrument are available in Appendix A.

2.1 Online Survey

We conducted an information-provision experiment via an online survey platform operated by MyVoice Communications, Inc. The survey was administered between November 1 and November 7, 2023, with a sample of 2,202 participants. Respondents were randomly assigned to one of three groups: a control group and two treatment groups. The control group did not receive any information or audio narration. In Treatment 1, participants heard an audio message presenting the BOJ's inflation forecast in standard Japanese. In Treatment 2, the same message was delivered in the Osaka dialect. To examine the effects of dialect, the sample was evenly split between Osaka residents and non-residents. A balanced gender composition (50:50) was maintained to assess the impact of voice gender, and the age distribution (20–79 years) reflected that of the general Japanese population. The experiment commenced on November 1, 2023, one day after the Bank of Japan released its inflation outlook for fiscal year 2023, which projected a 2.8% increase in prices.[2]

Stage 1: Prior belief

In the first stage, we elicit individuals' prior beliefs about future inflation. At the outset of the survey, respondents are asked to estimate the expected percentage change in prices over the next 12 months. They are instructed to distribute probabilities across ten predefined intervals, ensuring the total sums to 100%:

(1) increase by 12% or more _____ %
(2) increase by 8% to 12% _____ %
(3) increase by 4% to 8% _____ %
(4) increase by 2% to 4% _____ %
(5) increase by 0% to 2% _____ %

[2]The Outlook Report is available at: `https://www.boj.or.jp/en/mopo/outlook/gor2310a.pdf`

(6) decrease by 0% to 2% _____ %
(7) decrease by 2% to 4% _____ %
(8) decrease by 4% to 8% _____ %
(9) decrease by 8% to 12% _____ %
(10) decrease by 12% or more _____ %

Additionally, prior to the intervention, respondents are asked to report their perceived inflation rate over the past 12 months.

Stage 2: Information provision

After eliciting prior inflation expectations, participants in the treatment groups received the following information in audio format:

> *"The Bank of Japan expects prices, excluding fresh food, to increase by 2.8% compared to the previous year in the current fiscal year."*

The message was delivered by a single female narrator in either standard Japanese or the Osaka dialect, depending on the assigned treatment. To verify attentiveness, respondents in the treatment groups were subsequently asked to recall the BOJ's inflation forecast; 1,814 out of 1,997 answered correctly.

Stage 3: Posterior belief

In the final stage, respondents are asked to report their expectations regarding the percentage change in prices over the next 12 months. They choose from 25 discrete intervals, with the highest representing an increase of more than 12% and the lowest a decrease of more than 12%. Unlike the probabilistic elicitation in the first stage, participants indicate a single-point estimate by selecting one interval. The response options are presented as follows:

(1) Around +12% or higher (+11.5% or higher)
(2) Around +11% (+10.5% $\sim$ +11.4%)
$\sim$
(10) Around +3% (+2.5% $\sim$ +3.4%)
(11) Around +2% (+1.5% $\sim$ +2.4%)
(12) Around +1% (+0.5% $\sim$ +1.4%)
(13) Around +0% (-0.5% $\sim$ +0.4%)
(14) Around -1% (-1.5% $\sim$ -0.6%)
(15) Around -2% (-2.5% $\sim$ -1.6%)
(16) Around -3% (-3.5% $\sim$ -2.6%)
$\sim$
(24) Around -11% (-11.5% $\sim$ -10.6%)
(25) Around -12% or lower (-11.6% or lower)

2.2 Descriptive Statistics

Table 1 reports the descriptive statistics. The sample is evenly divided by gender and region, with Osaka residents and non-residents each comprising 50% of the respondents. The average age of participants is approximately 50 years. With respect to inflation perceptions, the average perceived inflation rate over the past 12 months is 9.23%. The mean prior expectation of future inflation is 6.61%, while the average posterior belief is slightly lower, at 6.05%.

Table 2 summarizes the mean values for the control and treatment groups. Demographically, there are no substantial differences in observable characteristics across groups. In terms of inflation expectations, respondents in the control group—who did not receive any information—reported an average prior expectation of 6.80% and a posterior belief of 8.25%, reflecting an upward revision of approximately 1.5 percentage points. By contrast, in the treatment groups that received audio information, average inflation expectations declined. Specifically, expectations decreased by about 1.0 percentage point among respondents exposed to the standard Japanese narration, and by roughly 0.6 percentage points among those who heard the Osaka dialect. Table 3 reports the corresponding means for Osaka residents, while Table 4 presents the results disaggregated by gender.

We examine whether there is heterogeneity in prior inflation expectations between the control and treatment groups by estimating the following equation:

$$X_i^{\text{prior}} = \alpha_0 + \sum_{j=1}^{2} \beta_j \cdot \mathbb{I}\{i \in \text{Treat}_j\} + \mathbf{Z}_i\boldsymbol{\gamma} + \epsilon_i, \tag{1}$$

where X_i^{prior} denotes the prior inflation expectation of respondent i, and $\mathbb{I}\{i \in \text{Treat}_j\}$ is an indicator variable equal to 1 if respondent i is assigned to treatment group j. Treatment groups 1 and 2 correspond to the standard Japanese and Osaka dialect conditions, respectively. The vector $\mathbf{Z}_i$ includes control variables, and ϵ_i is the error term. To account for potential outliers, we estimate Equation (1) using Huber-robust regressions, following Coibion et al. (2018) and Coibion et al. (2023b).

Table 5 presents the estimation results, which indicate no statistically significant differences in prior inflation expectations between the control and treatment groups. The coefficients β_j on the treatment indicators are not significantly different from zero. These results suggest that prior beliefs were balanced across groups, and any observed differences in posterior expectations can plausibly be attributed to the information treatments.

3 Effects of the Information Treatment on Beliefs

Do consumers incorporate the provided signal into their posterior beliefs? Following the empirical strategy of Coibion et al. (2022), we begin by estimating treatment effects using the full sample. Specifically, we test whether respondents assign weight to the provided inflation forecast when forming their posterior expectations. To do so, we estimate the following equation:

$$\begin{aligned} X_i^{\text{post}} = \alpha_0 + \beta_0 \cdot X_i^{\text{prior}} + \sum_{j=1}^{2} \alpha_j \cdot \mathbb{I}\{i \in \text{Treat}_j\} \\ + \sum_{j=1}^{2} \beta_j \cdot \mathbb{I}\{i \in \text{Treat}_j\} \cdot X_i^{\text{prior}} + \mathbf{Z}_i\boldsymbol{\gamma} + \epsilon_i, \end{aligned} \tag{2}$$

where X_i^{post} denotes the posterior inflation expectation of respondent i, and X_i^{prior} is the corresponding prior expectation. The indicator $\mathbb{I}\{i \in \text{Treat}_j\}$ equals 1 if individual i is assigned to treatment group j, where $j = 1$ represents the standard Japanese narration and $j = 2$ the Osaka dialect. The vector $\mathbf{Z}_i$ includes control variables, and ϵ_i is the error term.

Table 6 reports the estimation results. The coefficient on prior beliefs is approximately 0.67. In the absence of an information intervention, one would expect this coefficient to be close to 1, reflecting full persistence between prior and posterior expectations. However, because prior and posterior beliefs are elicited using different formats, measurement noise likely attenuates this relationship, resulting in a coefficient below unity.

Table 6 provides evidence that the information treatments significantly influenced respondents' posterior inflation expectations. Columns (1) and (3) show that the interaction term coefficients are negative and statistically significant ($\beta_1 \approx -0.15$), indicating that respondents exposed to the treatment revised their beliefs toward the Bank of Japan's forecast. Columns (2) and (4) further support the robustness of these findings by separately estimating treatment effects for the standard Japanese and Osaka dialect conditions. In both cases, the results confirm that the treatments induced meaningful revisions in expectations. Overall, the information interventions successfully generated variation in posterior beliefs, demonstrating that respondents incorporate the signal into their inflation expectations.

4 Effects of Social Identities on Beliefs

4.1 Do Women Respond More Strongly to a Woman's Voice than Men?

While the overall effects of the information treatment are well established, preliminary evidence points to an important role for social identity in shaping the extent of belief updating. Figure 1 displays the share of respondents whose posterior inflation expectations moved closer to the BOJ's forecast (2.8%) across the control and treatment groups. Figure 1 indicates that female respondents are more likely than male respondents to revise their expectations when the information is delivered by a female voice. The share of female respondents, represented by the black bars, is substantially higher than that of male or other respondents in the treatment groups receiving information. Specifically, while only 23% of female respondents in the control group adjusted their posterior beliefs closer to the BOJ's forecast of 2.8%, approximately 65% of women in the treatment groups did so. This substantial increase suggests that individuals are more likely to revise their expectations when the voice delivering the information aligns with their own gender. Moreover, the difference in anchoring rates between female and male respondents in the treatment group is statistically significant. The null hypothesis $H_0 : \mu_4 < \mu_2$ is strongly rejected, with a Z-statistic of 3.809 and a p-value of 0.000. These results provide robust evidence of gender-based homophily in belief updating.

To formally evaluate the pattern observed in the graphical evidence, we test whether the information treatment is more effective at anchoring inflation expectations when the signal is delivered by someone who shares the respondent's social identity. We begin by focusing on gender as the primary dimension of social identity.

We assess the extent to which inflation expectations are anchored by calculating the change in

distance between each respondent's belief and the BOJ's forecast of 2.8%.[3]

To test this formally, we estimate the following regression:

$$\left|X_i^{\text{post}} - \pi_{BOJ}^{\text{forecast}}\right| - \left|X_i^{\text{prior}} - \pi_{BOJ}^{\text{forecast}}\right| = \alpha + \beta \times D_i^{\text{female}} + \mathbf{Z}_i\boldsymbol{\gamma} + \epsilon_i, \tag{3}$$

where D_i^{female} is a binary indicator equal to 1 if respondent i is female, and 0 otherwise. $\pi_{BOJ}^{\text{forecast}}$ represents the BOJ's official inflation forecast, provided to respondents as part of the treatment (2.8%). Equation (3) is estimated using a subsample comprising only respondents in treatment groups 1 and 2. Our primary parameter of interest is the coefficient β: a negative value implies that female respondents, on average, anchor more closely to the BOJ's forecast than their male counterparts.

Table 7 presents the estimation results. Columns (1) and (3) use the combined sample from treatment groups 1 and 2. The coefficient β on D_i^{female} is negative and statistically significant, indicating that a woman's voice anchors women's inflation expectations more effectively than it does for men, with an estimated effect size of approximately -0.5 percentage points. This result remains robust when the analysis is restricted to treatment group 1 alone (standard Japanese narration). In Columns (2) and (4), the estimated coefficients for β suggest an even larger anchoring effect among women, with a difference of approximately -0.8 percentage points in belief revision relative to men.

We confirm the robustness of our findings using an alternative specification. Table 8 provides additional evidence that women respond more strongly to a female voice than men. In this analysis, we modify the dependent variable in Equation (3) to $I\{X_i^{\text{post}} = \pi_{BOJ}^{\text{forecast}}\}$, an indicator variable equal to 1 if the respondent's posterior expectation is approximately 3%—a value close to the BOJ's forecast of 2.8%—and 0 otherwise. The coefficients on D_i^{female} in Table 8 are all positive and statistically significant, indicating that women are more likely than men to anchor precisely to the central bank's forecast when the message is delivered by a female narrator. These results further reinforce the role of social identity—specifically gender—in shaping belief revisions.

To directly address an identification concern raised in prior studies—namely, whether the observed gender-based effect reflects the gender of the narrator or that of the respondent—we conducted a follow-up RCT in September 2024. A total of 600 new respondents, distinct from those in the main survey,[4] were randomly assigned to either a control group (no information) or a treatment group. The treatment group received an audio message in standard Japanese, narrated by a male voice, which stated that the Bank of Japan expected the consumer price index (CPI), excluding fresh food, to increase by 2.5% year-on-year in fiscal year 2024.[5]

Figure 2 presents a robustness check based on the follow-up experiment in which the BOJ's forecast was delivered by a male narrator. The treatment again prompted substantial belief revision:

[3]We define *anchoring* as the degree to which respondents revise their inflation expectations toward the BOJ's forecast. Following Equation (3), we operationalize anchoring as the change in the absolute distance between the respondent's belief and the official forecast: $\left|X_i^{\text{post}} - \pi_{BOJ}^{\text{forecast}}\right| - \left|X_i^{\text{prior}} - \pi_{BOJ}^{\text{forecast}}\right|$. A negative value of this measure indicates that the respondent updated their posterior belief closer to the BOJ's forecast—i.e., a greater degree of anchoring. Conversely, a positive value implies a revision away from the signal. This metric is consistent with prior work on belief updating under imperfect information (e.g., Coibion et al., 2018; Armantier et al., 2016; Binder and Rodrigue, 2018; Fuster et al., 2022).

[4]The respondents in the follow-up survey are distinct from those in the main survey.

[5]See Table 9 for summary statistics from the follow-up experiment in which the BOJ's forecast was delivered by a male narrator.

59% of male and 58% of female respondents in the treatment group adjusted their expectations toward the BOJ's forecast of 2.5%, compared to 28% and 25%, respectively, in the control group. Unlike the original setting with a female narrator (Figure 1), where female respondents exhibited significantly greater belief updating than males, no such gender-based difference is observed here. The anchoring rates for men and women are nearly identical, and the difference is statistically insignificant. The null hypothesis $H_0 : \mu_4 < \mu_2$ cannot be rejected, with a Z-statistic of -0.081 and a p-value of 0.532. This finding suggests that gender-based homophily in belief updating is specific to the female-narrator condition and does not generalize to male narration.

To test this formally, we re-estimate Equation (3) using data from the follow-up experiment with a male narrator. Table 10 presents the results of this robustness check. Columns (1) and (2) report estimates based on the treatment group sample only, excluding the control group. In contrast to the results reported in Table 7, the coefficient β on D_i^{female} is not statistically significant in either specification. The estimated coefficients are small in magnitude and not distinguishable from zero, indicating that the male-narrated treatment does not induce differential belief updating between female and male respondents. This finding reinforces the conclusion that gender-based homophily in belief formation is specific to the female-narrator condition.

We further assess the robustness of our findings using an alternative specification. Table 11 reports results based on a modified dependent variable from Equation (3), defined as $I\{X_i^{\text{post}} = \pi_{BOJ}^{\text{forecast}}\}$—an indicator equal to 1 if the respondent's posterior belief is approximately 3% (i.e., near the BOJ's forecast of 2.5%), and 0 otherwise. In contrast to the findings in Table 8, the coefficients on D_i^{female} in Table 11 are small in magnitude and statistically insignificant. These results suggest that when the information is delivered by a male narrator, female respondents are no more likely than male respondents to align their expectations with the central bank's forecast.

These findings suggest asymmetry in social identity effects: while homophily based on shared gender identity enhances belief updating for women, the same is not true for men. In other words, women respond more to a female voice, but men do not similarly respond to a male voice. This asymmetric response underscores the importance of source-recipient identity alignment, but also reveals that its impact may depend on the gender of both the narrator and the audience.

4.2 Effects of Dialect and Political Preferences on Beliefs

This subsection examines the influence of social identity dimensions—specifically, dialect and political preferences—on belief revision. Figures 3 to 4 display the proportion of female respondents who adjusted their posterior inflation expectations toward the BOJ's forecast of 2.8% across control and treatment groups. To isolate the effects of dialect and political alignment from gender, the analysis is restricted to female respondents. This allows us to evaluate whether shared regional background or political orientation enhances responsiveness to central bank communication, independent of gender-based factors.

Figure 3 shows that Osaka residents respond more strongly to treatments delivered in the Osaka dialect, with 66% adjusting their beliefs toward the BOJ's forecast, compared to 58% of non-Osaka residents. This difference is statistically significant: the null hypothesis $H_0 : \mu_6 < \mu_3$ is rejected with a Z-statistic of 1.757 and a p-value of 0.039. In contrast, under the standard Japanese narration, no significant difference in belief revision is observed between Osaka and non-Osaka residents. The null

hypothesis $H_0 : \mu_5 < \mu_2$ cannot be rejected ($Z = 0.592$, $p = 0.277$). Similarly, Figure 4 shows that respondents with strong support for the sitting Cabinet are more responsive to the BOJ's forecast, with 76% adjusting their expectations, compared to 64% of those with low cabinet support. This difference is also statistically significant (Z-statistic $= 2.008$, p-value $= 0.045$). These findings suggest that respondents are more likely to revise their beliefs when the information is delivered by someone who shares salient social identities, such as regional dialect or political orientation. This reinforces the role of social identity in shaping the effectiveness of policy communication.

To formally evaluate the patterns suggested by the graphical evidence, we estimate the same specification used in the previous subsection. Tables 12 to 13 report the estimation results. Our primary focus is on the coefficients of two key dummy variables: the first equals 1 if respondent j resides in Osaka, and 0 otherwise; the second equals 1 if respondent j reports strong support for the sitting Cabinet (i.e., support $> 50\%$), and 0 otherwise. The results in these tables provide empirical support for the patterns observed in Figures 3 and 4. Specifically, respondents are more likely to revise their expectations toward the BOJ's forecast when the information is delivered by someone who shares salient social identity traits, such as regional background or political alignment.

While gender and dialect pertain to the social characteristics of the information source, political preference is more closely related to the content of the message itself. In the cases of gender and dialect, respondents may allocate greater attention to information communicated by speakers who share their social identity, consistent with the mechanism of homophily—where similarity fosters trust in the source. By contrast, the influence of political preferences may stem from individuals' tendency to be more receptive to information that aligns with their pre-existing political attitudes. This reflects a mechanism closer to confirmation bias than to homophily. Accordingly, while all three identity dimensions—gender, dialect, and political alignment—affect belief updating, the underlying processes differ: gender and dialect effects are driven by source-based familiarity and perceived trustworthiness, whereas political alignment effects are driven by content-based agreement.

5 Theoritical Framework

To interpret the empirical findings presented in Section 4, we adapt the information acquisition framework of Fuster et al. (2022). This model provides a theoretical foundation for analyzing how social identity influences the formation of inflation expectations.

Individual i holds a fundamental belief θ, which represents their one-year-ahead inflation expectation. This belief is modeled as a normally distributed random variable with mean $\mu_\theta(i)$ and variance $\sigma^2_\theta(i)$. The subscript i reflects heterogeneity across individuals, allowing for variation in both the central tendency and uncertainty of prior beliefs.

Individuals possess prior beliefs, and the central bank's signal introduces noise to the fundamental value. Specifically, the signal from the information source (the BOJ) is given by: $x_{CB} = \theta + \varepsilon_{CB}$, where x_{CB} denotes the information provided by the central bank, θ is the underlying fundamental (e.g., true inflation), and ε_{CB} is a normally distributed noise term with mean zero. Individual i perceives the precision of the information source CB as $\tau_{CB}(i) \equiv 1/\sigma^2_{\varepsilon,CB}(i)$, where $\sigma^2_{\varepsilon,CB}(i)$ denotes the variance of the noise in the signal. A higher value of $\tau_{CB}(i)$ implies greater trust in the accuracy of the central bank's information. This formulation allows for heterogeneity in perceived signal precision across individuals.

The attention paid to the provided information is modeled as a noisy signal in the spirit of Sims (2003). Specifically, individual i observes:

$$s(i) = x_{CB} + \psi(i),$$

where $s(i)$ denotes the signal actually received by individual i, and $\psi(i)$ captures noise arising from limited attention or imperfect processing of the information. We assume that $\psi(i)$ is normally distributed with mean zero and variance $\sigma^2_\psi(i)$. A larger value of $\sigma^2_\psi(i)$ indicates lower attention or greater inattention noise.

If individual i receives information from source CB with inattention noise variance $\sigma^2_\psi(i)$, her posterior belief is formed by combining the received signal with her prior belief through Bayesian updating. The observed signal can be expressed as:

$$s(i) = \theta + \varepsilon_{CB} + \psi(i),$$

where θ is the fundamental (e.g., true inflation), ε_{CB} is the noise in the central bank's communication, and $\psi(i)$ is the individual-specific noise due to limited attention. Together, these sources of noise determine the precision of the signal used in updating beliefs.

The posterior mean of the fundamental θ is given by:

$$E[\theta \mid s(i)] = \mu_\theta(i) + \frac{\sigma^2_\theta(i)}{\sigma^2_\theta(i) + \sigma^2_{\varepsilon,CB}(i) + \sigma^2_\psi(i)} \cdot \left(s(i) - \mu_\theta(i)\right), \tag{4}$$

where $s(i) = \theta + \varepsilon_{CB} + \psi(i)$ is the observed signal. The weight placed on the signal in updating beliefs increases with the precision of the information source and the attention allocated by the respondent. That is, lower values of $\sigma^2_{\varepsilon,CB}(i)$ and $\sigma^2_\psi(i)$ lead to greater responsiveness to the signal. The posterior variance of the fundamental is given by:

$$\sigma^2_{\theta|s}(i) = \left(\frac{1}{\sigma^2_\theta(i)} + \frac{1}{\sigma^2_{\varepsilon,CB}(i) + \sigma^2_\psi(i)} \right)^{-1}.$$

The posterior inflation expectation is determined by Equation 4. The extent to which information provision affects posterior beliefs depends primarily on three factors:

1. **Inaccuracy in prior beliefs** $\left(\sigma^2_\theta(i)\right)$;[6]
2. **Accuracy of the signal** $\left(\sigma^2_{\varepsilon,CB}(i)\right)$;
3. **Attention paid to the signal** $\left(\sigma^2_\psi(i)\right)$.

This study focuses on the third factor: the degree of attention that respondent i allocates to the signal. The model predicts that attention is a critical determinant of belief updating, as it governs the extent to which the signal influences the posterior expectation. A key feature of the model is that the inattention parameter $\sigma^2_\psi(i)$ captures the effect of social identity on information processing. Specifically, $\sigma^2_\psi(i)$ is lower when the information source shares salient social characteristics with the respondent, implying greater attention and more weight placed on the signal. For example, female

[6] As the inaccuracy of prior beliefs increases, the variance $\sigma^2_\theta(i)$ also increases. Table B.1 in Appendix B reports the mean and standard deviation of prior inflation expectations by demographic group. We find no substantial differences in the variance of prior beliefs across individuals with similar demographics, except by age. Younger individuals exhibit lower prior expectations and smaller variances, consistent with findings in the literature (Diamond et al., 2020).

respondents are more likely to revise their beliefs when the message is delivered by a woman, and Osaka residents are more responsive when the information is conveyed in the Osaka dialect. In both cases, shared identity enhances signal precision through increased attentiveness.

A parallel mechanism may operate through political preferences. Respondents who support the sitting Cabinet are more likely to respond to a central bank forecast, particularly when they perceive the central bank's policies to be aligned with the government's agenda. In such cases, the inattention parameter $\sigma_\psi^2(i)$ decreases due to ideological or institutional alignment, reflecting increased attentiveness to information from a politically congruent source.

The model's predictions are consistent with the empirical findings reported in Section 4: respondents revise their posterior beliefs more significantly when the information is delivered by someone who shares a salient social identity. We interpret this pattern as evidence of homophily. In the context of the model, homophily operates by reducing the inattention parameter $\sigma_\psi^2(i)$, thereby increasing the effective precision of the signal. This enhanced attentiveness facilitates belief updating and helps anchor consumers' inflation expectations more closely to the central bank's forecast.

6 Conclusion

This study investigates how social identity influences the formation of inflation expectations. Leveraging a RCT, we generate exogenous variation in consumers' information exposure to identify the causal impact of shared identity between the information source and the respondent. Our findings show that individuals are more likely to align their inflation expectations with the BOJ's forecast when the information is delivered by someone who shares their demographic or political characteristics. Specifically, respondents significantly revised their beliefs when the gender or dialect of the information provider matched their own. Women responded more strongly to a female narrator than men, and Osaka residents were more responsive to information conveyed in the Osaka dialect. Likewise, individuals who strongly supported the sitting Cabinet exhibited greater responsiveness to the BOJ's forecast. These results suggest that consumers allocate more attention to information delivered by sources with whom they share a salient social identity.

While our findings suggest that tailoring communication based on shared social identities can enhance the effectiveness of central bank messaging, it is important to recognize the potential risks. Specifically, strategies that target particular groups too narrowly may inadvertently compromise the clarity, coherence, or perceived impartiality of policy communication for broader segments of the population. Although identity-based approaches can improve salience and engagement for certain audiences, they may also risk confusing or alienating others. We therefore caution that central banks should carefully weigh the benefits of targeted messaging against the possibility of fragmenting their overall narrative. Ensuring both inclusiveness and consistency is essential for maintaining credibility and fostering trust in monetary policy communication.

Our study offers important implications for the design of central bank communication strategies. First, increasing demographic diversity within policy committees may improve public understanding and engagement with monetary policy. Our findings underscore the role of social identity in anchoring inflation expectations. Notably, since the enactment of the revised Bank of Japan Act in 1998, the number of women in the BOJ's policy board, which consists of nine members, had never exceeded one prior to March 2025. Addressing the male-dominated composition could improve the credibility

and outreach of the institution, particularly among underrepresented groups such as women. Second, innovative dissemination methods may improve the effectiveness of central bank messaging. Central banks are increasingly adopting platforms such as social media and YouTube to broaden their communication reach. For instance, the BOJ now presents economic outlooks using illustrated content on X (formerly Twitter), while the Bank of Jamaica has employed reggae music to promote economic recovery narratives. These creative strategies can meaningfully shape expectations and public perception. Finally, our results suggest that political polarization may limit the effectiveness of monetary policy communication. Respondents who support the sitting Cabinet are more likely to revise their expectations in response to central bank forecasts, potentially reflecting perceived policy alignment. In polarized environments, such asymmetries in responsiveness may reduce the broad-based effectiveness of forward guidance and other communication tools.

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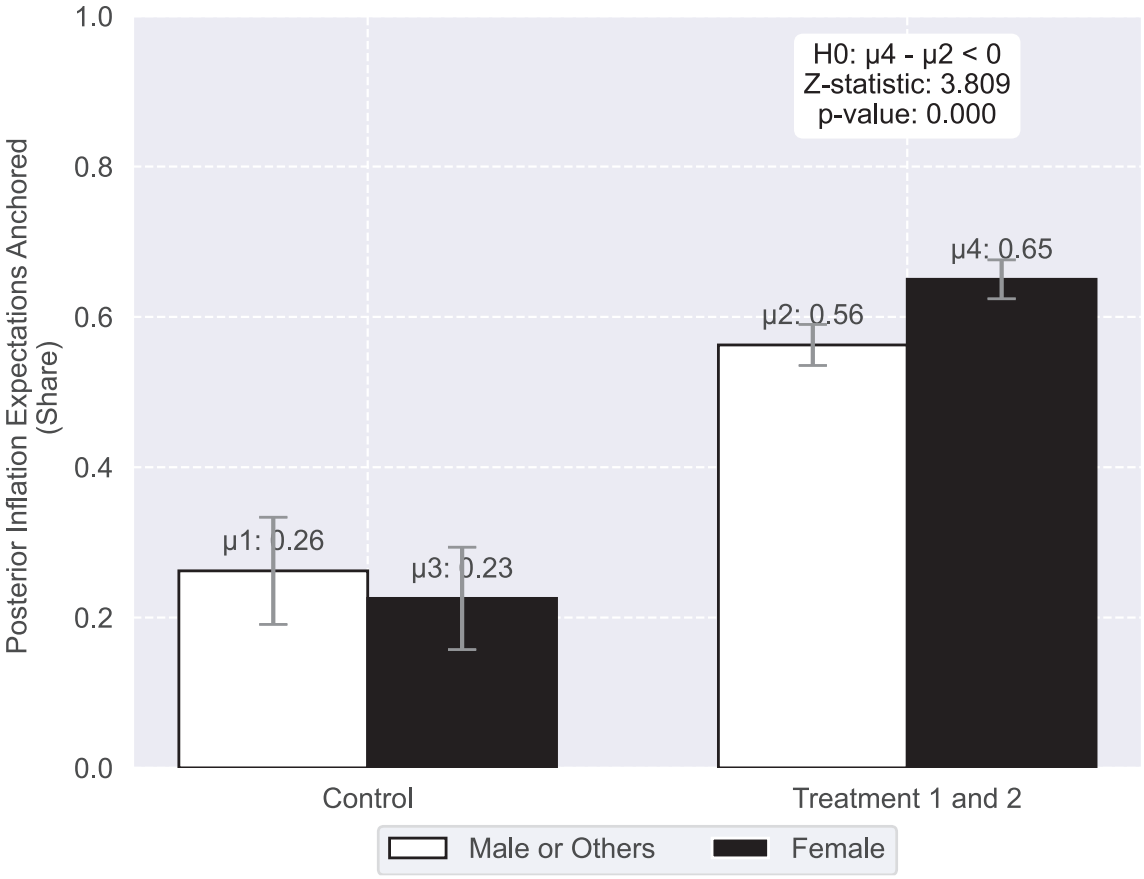

Figure 1: Gender differences in response to the information treatment (female narrator). This figure shows the share of respondents who adjusted their posterior beliefs toward the BOJ's forecast (2.8%) by gender and treatment group. The treatment involved an audio message in standard Japanese narrated by a female voice. Bars represent 90% confidence intervals.

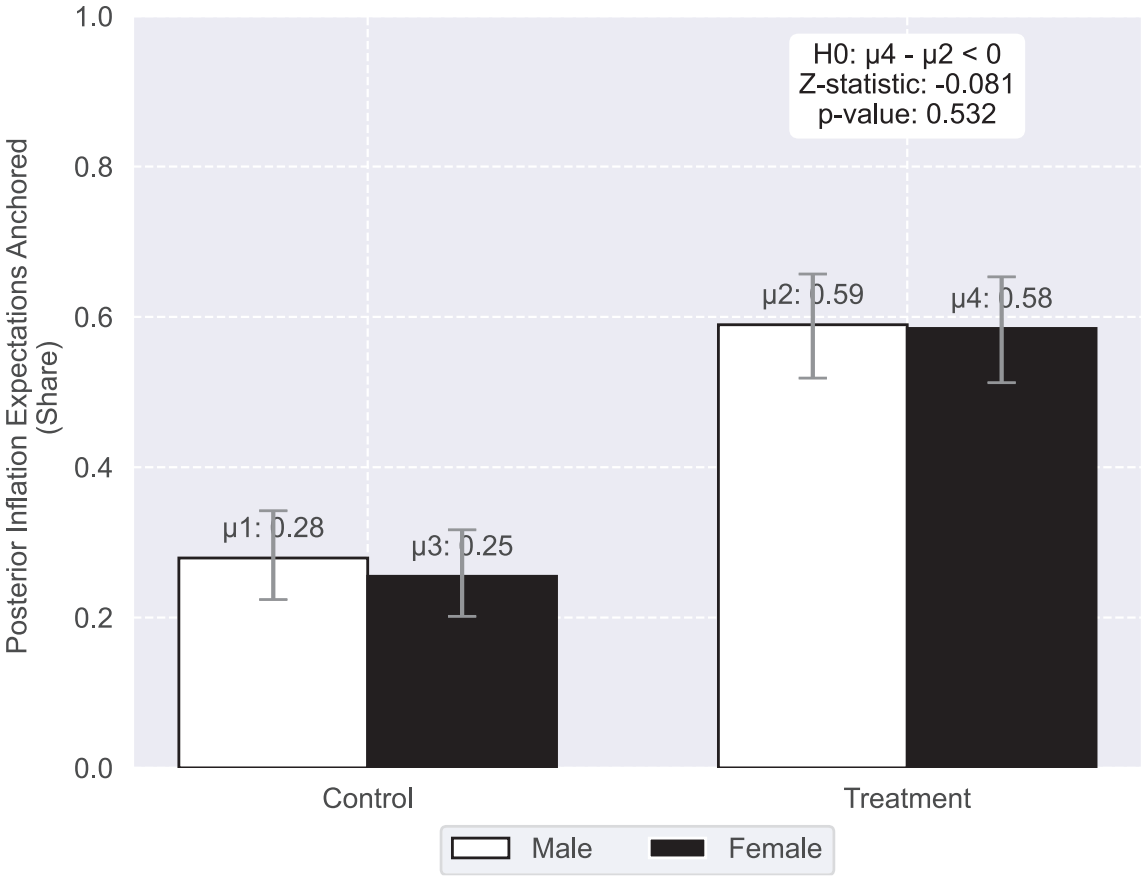

Figure 2: Gender differences in response to the standard Japanese treatment (male narrator, follow-up experiment). This figure shows the share of respondents who adjusted their posterior beliefs toward the BOJ's forecast (2.5%) in the follow-up experiment, by gender and treatment group. The treatment involved an audio message in standard Japanese narrated by a male voice. Bars represent 90% confidence intervals.

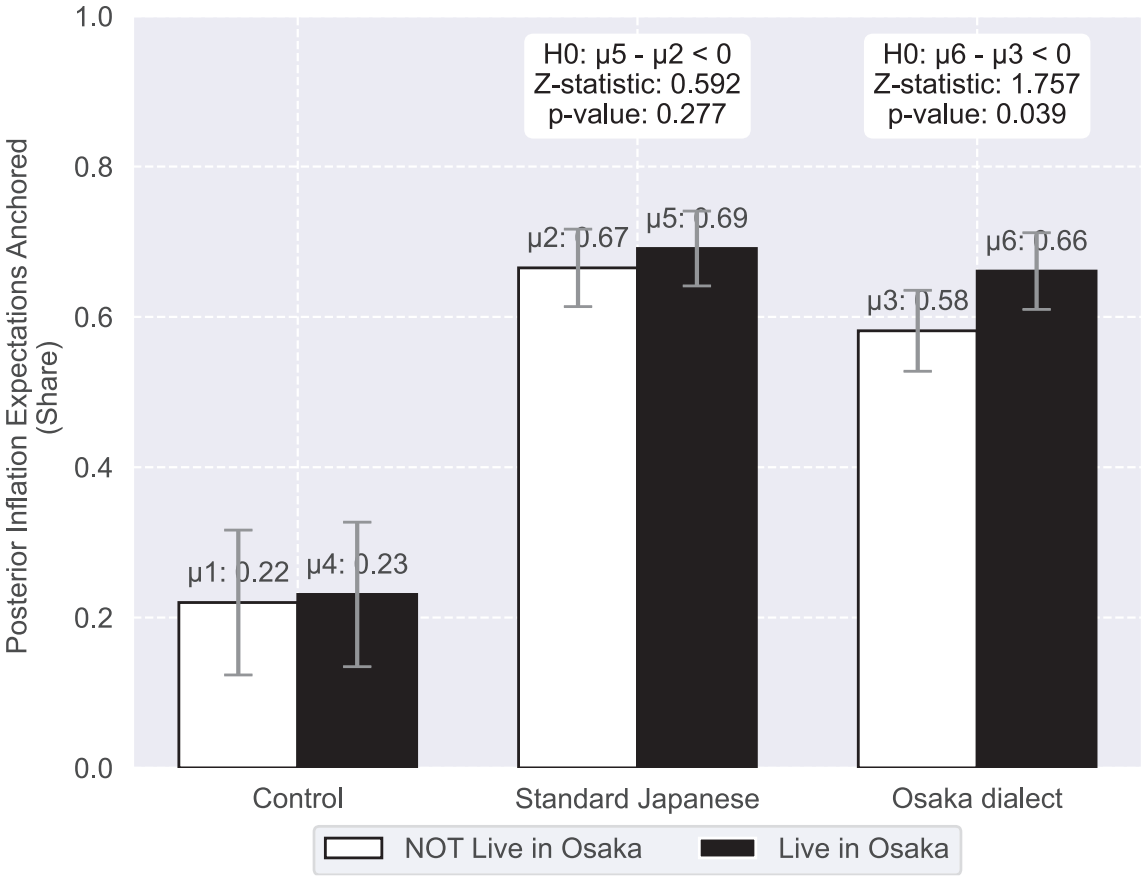

Figure 3: Effect of the information treatment delivered in the Osaka dialect on posterior inflation expectations. This figure shows the share of respondents whose posterior inflation expectations moved closer to the BOJ's forecast (2.8%). Bars represent 90% confidence intervals.

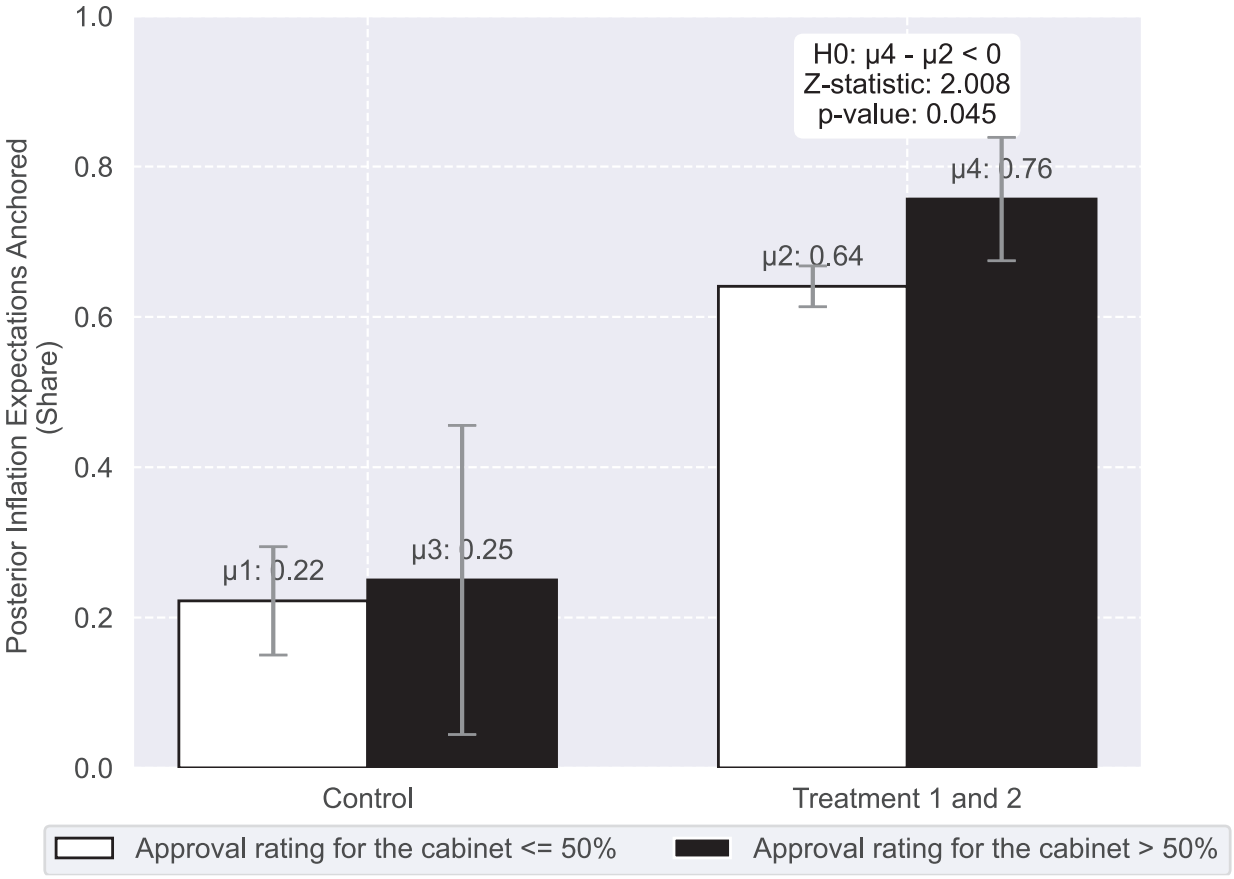

Figure 4: Effect of respondents' approval of the sitting Cabinet on posterior beliefs. This figure shows the share of respondents whose posterior inflation expectations moved closer to the BOJ's forecast (2.8%), stratified by their approval rating of the sitting Cabinet. Bars represent 90% confidence intervals.

Table 1: Summary statistics

	Mean	Median	Std. Dev.
Demographic Characteristics			
Female (0/1)	0.51	1.00	0.50
Osaka resident (0/1)	0.50	1.00	0.50
Age (years)	50.34	50.00	16.13
Married (0/1)	0.56	1.00	0.50
College graduate (BA+) (0/1)	0.48	0.00	0.50
Employed (0/1)	0.65	1.00	0.48
Retired or unemployed (0/1)	0.16	0.00	0.37
Household income $\geqq$ 7.5M yen (0/1)	0.20	0.00	0.40
Cabinet approval rating (%)	24.71	20.00	24.15
Perceptions and Expectations			
Perception: Price comparison one year ago (1–5)	1.32	1.00	0.56
Perception: Price comparison one year ago (%)	9.23	10.00	3.09
Prior: Inflation over next 12 months (1–5)	1.76	2.00	0.62
Prior: Inflation over next 12 months (%)	6.61	6.40	3.32
Posterior: Inflation over next 12 months (%)	6.05	5.00	3.44
Observations	2,019		

Note: Respondents who failed the Q6 attention check are excluded. Perception and expectation variables are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers.

Table 2: Mean values by control and treatment groups

	Control	Treatment 1 (Standard Japanese)	Treatment 2 (Osaka dialect)
Demographic Characteristics			
Female (0/1)	0.50	0.51	0.51
Osaka resident (0/1)	0.51	0.50	0.50
Age (years)	50.18	50.24	50.48
Married (0/1)	0.50	0.58	0.55
College graduate (BA+) (0/1)	0.50	0.48	0.47
Employed (0/1)	0.69	0.65	0.64
Retired or unemployed (0/1)	0.16	0.16	0.17
Household income $\geqq$ 7.5M yen (0/1)	0.20	0.19	0.20
Cabinet approval rating (%)	24.84	24.17	25.23
Perceptions and Expectations			
Perception: Price comparison one year ago (1–5)	1.28	1.33	1.33
Perception: Price comparison one year ago (%)	9.29	9.26	9.19
Prior: Inflation over next 12 months (1–5)	1.72	1.76	1.77
Prior: Inflation over next 12 months (%)	6.80	6.70	6.48
Posterior: Inflation over next 12 months (%)	8.25	5.74	5.85
Observations	205	908	906

Note: Respondents who failed the Q6 attention check are excluded. Perception and expectation variables are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers.

Table 3: Mean values by Osaka residency

	Non-Osaka residents	Osaka residents
Demographic Characteristics		
Female (0/1)	0.50	0.51
Osaka resident (0/1)	0.00	1.00
Age (years)	50.67	50.02
Married (0/1)	0.58	0.53
College graduate (BA+) (0/1)	0.49	0.46
Employed (0/1)	0.67	0.63
Retired or unemployed (0/1)	0.14	0.18
Household income $\geqq$ 7.5M yen (0/1)	0.24	0.16
Cabinet approval rating (%)	25.20	24.22
Perceptions and Expectations		
Perception: Price comparison one year ago (1–5)	1.33	1.32
Perception: Price comparison one year ago (%)	9.30	9.17
Prior: Inflation over next 12 months (1–5)	1.77	1.75
Prior: Inflation over next 12 months (%)	6.54	6.69
Posterior: Inflation over next 12 months (%)	6.08	6.01
Observations	1,008	1,011

Note: Respondents who failed the Q6 attention check are excluded. Perception and expectation variables are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers.

Table 4: Mean values by gender

	Female	Male or Others
Demographic Characteristics		
Female (0/1)	1.00	0.00
Osaka resident (0/1)	0.51	0.49
Age (years)	50.70	49.97
Married (0/1)	0.54	0.57
College graduate (BA+) (0/1)	0.36	0.60
Employed (0/1)	0.56	0.74
Retired or unemployed (0/1)	0.12	0.21
Household income $\geqq$ 7.5M yen (0/1)	0.18	0.22
Cabinet approval rating (%)	26.05	23.35
Perceptions and Expectations		
Perception: Price comparison one year ago (1–5)	1.27	1.38
Perception: Price comparison one year ago (%)	9.42	9.04
Prior: Inflation over next 12 months (1–5)	1.75	1.77
Prior: Inflation over next 12 months (%)	6.70	6.52
Posterior: Inflation over next 12 months (%)	5.95	6.14
Observations	1,022	997

Note: Respondents who failed the Q6 attention check are excluded. Perception and expectation variables are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers.

Table 5: Heterogeneity in prior inflation expectations (%) across control and treatment groups

	Dependent variable:		
	Prior inflation expectation (%)		
	(1)	(2)	(3)
Constant	6.803***	4.889***	4.786***
	(0.243)	(0.438)	(0.452)
Treatment 1 (Standard Japanese): β_1	−0.104	−0.124	−0.122
	(0.267)	(0.263)	(0.263)
Treatment 2 (Osaka dialect): β_2	−0.323	−0.334	−0.333
	(0.267)	(0.263)	(0.263)
Female (1/0)		0.160	0.160
		(0.147)	(0.147)
Age (years)		0.032***	0.032***
		(0.005)	(0.005)
Income (scale 1−8)		−0.084**	−0.079*
		(0.040)	(0.041)
Education (scale 1−7)		0.076*	0.076*
		(0.042)	(0.042)
Married (1/0)		0.415**	0.416**
		(0.170)	(0.170)
Osaka resident (1/0)			0.157
			(0.147)
Observations	2,019	2,019	2,019

Note: Respondents who failed the attention check are excluded. Inflation expectation variables are winsorized at the 1st and 99th percentiles. Robust standard errors are reported in parentheses. p-values: * < 0.1, ** < 0.05, *** < 0.01.

Table 6: Do consumers incorporate the signal into their posterior beliefs?

	Dependent variable: Posterior inflation expectation (%)			
	(1)	(2)	(3)	(4)
Constant	3.613***	3.607***	2.681***	2.694***
	(0.464)	(0.464)	(0.567)	(0.569)
Prior beliefs (%)	0.681***	0.682***	0.656***	0.656***
	(0.061)	(0.061)	(0.060)	(0.060)
Treatment 1 and 2 (1/0)	−1.438***		−1.518***	
	(0.490)		(0.482)	
Treatment 1 and 2 × Prior beliefs	−0.143**		−0.136**	
	(0.064)		(0.063)	
Treatment 1 (Standard Japanese) (1/0)		−1.489***		−1.587***
		(0.516)		(0.510)
Treatment 2 (Osaka dialect) (1/0)		−1.404***		−1.460***
		(0.514)		(0.507)
Treatment 1 × Prior beliefs		−0.152**		−0.142**
		(0.068)		(0.067)
Treatment 2 × Prior beliefs		−0.130*		−0.128*
		(0.068)		(0.067)
Female (1/0)			−0.342**	−0.337**
			(0.135)	(0.136)
Cabinet approval > 50% (1/0)			−0.523**	−0.533**
			(0.225)	(0.226)
Osaka resident (1/0)			−0.163	−0.165
			(0.132)	(0.133)
Age (years)			0.030***	0.030***
			(0.005)	(0.005)
Employed (1/0)			−0.118	−0.117
			(0.149)	(0.150)
Education (scale 1−7)			0.016	0.015
			(0.037)	(0.037)
Married (1/0)			−0.197	−0.189
			(0.142)	(0.142)
Observations	2,019	2,019	2,019	2,019

Note: This table reports estimates from Equation (1). *Osaka resident* equals 1 if the respondent lives in Osaka; the cabinet approval dummy equals 1 if their approval of the Cabinet exceeds 50%. Robust standard errors are in parentheses. Huber-robust regressions are used to address outliers, following Coibion et al. (2018, 2023b). Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Do women respond more strongly to a female voice than men? (1)

	Dependent variable: $\lvert X_i^{\text{post}} - \pi_{BOJ}^{\text{forecast}} \rvert - \lvert X_i^{\text{prior}} - \pi_{BOJ}^{\text{forecast}} \rvert$			
	(1)	(2)	(3)	(4)
	Treatment 1 & 2	Treatment 1	Treatment 1 & 2	Treatment 1
Standard Japanese	✓	✓	✓	✓
Osaka dialect	✓		✓	
Constant	−0.428	−0.614	0.003	−0.120
	(0.380)	(0.530)	(0.372)	(0.523)
Perception (%)	0.167***	0.191***		
	(0.027)	(0.038)		
Prior beliefs (%)	−0.394***	−0.416***	−0.321***	−0.340***
	(0.024)	(0.033)	(0.021)	(0.030)
Female (1/0)	−0.520***	−0.807***	−0.448***	−0.744***
	(0.141)	(0.199)	(0.142)	(0.202)
Cabinet approval > 50% (1/0)	−0.398*	−0.460	−0.457*	−0.602*
	(0.238)	(0.345)	(0.239)	(0.349)
Osaka resident (1/0)	−0.256*	−0.181	−0.283**	−0.211
	(0.137)	(0.194)	(0.138)	(0.197)
Age (years)	0.021***	0.023***	0.030***	0.034***
	(0.005)	(0.007)	(0.005)	(0.007)
Employed (1/0)	−0.209	−0.147	−0.172	−0.076
	(0.154)	(0.216)	(0.155)	(0.219)
Education (scale 1−7)	0.024	0.055	0.033	0.064
	(0.038)	(0.054)	(0.038)	(0.055)
Married (1/0)	−0.297**	−0.570***	−0.207	−0.442**
	(0.147)	(0.209)	(0.148)	(0.211)
Observations	1,814	908	1,814	908

Note: The dependent variable is the change in absolute distance between respondents' inflation expectations and the BOJ's forecast. Treatment 1 and 2 correspond to the standard Japanese and Osaka dialect conditions, respectively. The variable *Osaka resident* equals 1 if the respondent resides in Osaka. The cabinet approval dummy equals 1 if the respondent's approval rating exceeds 50%. Huber-robust regressions are used to account for outliers (Coibion et al., 2018, 2023b). Robust standard errors are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Do women respond more strongly to a female voice than men? (2)

	Dependent variable: $I\{X_i^{\text{post}} = \pi_{BOJ}^{\text{forecast}}\}$			
	(1)	(2)	(3)	(4)
	Treatment 1 & 2	Treatment 2	Treatment 1 & 2	Treatment 2
Standard Japanese	✓	✓	✓	✓
Osaka dialect	✓		✓	
Constant	0.636***	0.544***	0.581***	0.502***
	(0.062)	(0.085)	(0.059)	(0.082)
Perception (%)	−0.017***	−0.014**		
	(0.004)	(0.006)		
Prior beliefs (%)	−0.024***	−0.026***	−0.030***	−0.031***
	(0.004)	(0.005)	(0.003)	(0.005)
Female (1/0)	0.142***	0.179***	0.133***	0.172***
	(0.023)	(0.032)	(0.023)	(0.032)
Cabinet approval > 50% (1/0)	0.045	0.037	0.051	0.048
	(0.039)	(0.056)	(0.038)	(0.055)
Osaka resident (1/0)	0.045**	0.039	0.047**	0.041
	(0.022)	(0.031)	(0.022)	(0.031)
Age (years)	−0.003***	−0.002	−0.004***	−0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Employed (1/0)	0.033	0.033	0.029	0.028
	(0.025)	(0.035)	(0.025)	(0.035)
Education (scale 1−7)	−0.003	−0.000	−0.003	−0.001
	(0.006)	(0.009)	(0.006)	(0.009)
Married (1/0)	0.046*	0.071**	0.038	0.063*
	(0.024)	(0.034)	(0.024)	(0.033)
Observations	1,814	908	1,814	908

Note: The dependent variable is an indicator equal to 1 if the respondent's posterior belief is approximately 3% (i.e., close to the BOJ's forecast of 2.8%), and 0 otherwise. Treatment 1 and 2 refer to the standard Japanese and Osaka dialect treatments, respectively. The *Osaka resident* dummy equals 1 if the respondent resides in Osaka. The *Cabinet approval* dummy equals 1 if the respondent's support exceeds 50%. We use Huber-robust regressions to address outliers, following Coibion et al. (2018, 2023b). Robust standard errors are shown in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Summary statistics from the follow-up experiment (male narrator)

	Mean	Median	Std. Dev.
Demographic Characteristics			
Female (1/0)	0.50	0.00	0.50
Age (years)	51.10	52.00	15.43
Married (1/0)	0.49	0.00	0.50
College graduate (BA+) (1/0)	0.46	0.00	0.50
Employed (1/0)	0.59	1.00	0.49
Household income $\geq$ 7M yen (1/0)	0.26	0.00	0.44
Cabinet approval rating (%)	24.28	20.00	26.20
Perceptions and Expectations			
Perceived inflation (past year, 5-point scale)	1.61	1.00	0.84
Perceived inflation (past year, %)	7.02	8.00	4.69
Prior inflation expectation (5-point scale)	1.88	2.00	0.76
Prior inflation expectation (%)	5.13	4.90	3.48
Posterior inflation expectation (%)	5.36	5.00	4.51

Note: This table reports summary statistics from the follow-up RCT using a male narrator. Perception and expectation variables are winsorized at the 1st and 99th percentiles. The sample includes 571 respondents.

Table 10: Do men respond more strongly to a male voice than women? Robustness check (1)

	(1)	(2)
Standard Japanese	✓	✓
Constant	−0.732	−0.535
	(0.856)	(0.808)
Perception (%)	0.062	
	(0.043)	
Prior beliefs (%)	−0.303***	−0.266***
	(0.058)	(0.050)
Female (1/0)	−0.269	−0.321
	(0.355)	(0.342)
Cabinet approval > 50% (1/0)	−0.510	−0.581
	(0.519)	(0.498)
Age (years)	0.021	0.022*
	(0.013)	(0.012)
Employed (1/0)	−0.172	−0.228
	(0.358)	(0.347)
Education (scale 1−7)	0.069	0.071
	(0.092)	(0.089)
Married (1/0)	0.111	0.080
	(0.378)	(0.366)
Observations	264	264

Note: The dependent variable is the change in the absolute distance between respondents' prior and posterior inflation expectations relative to the BOJ's forecast. The control group is excluded. The *Cabinet approval* dummy equals 1 if the respondent's approval rating exceeds 50%. Robust standard errors are in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 11: Do men respond more strongly to a male voice than women? Robustness check (2)

	(1)	(2)
Standard Japanese	✓	✓
Constant	0.783***	0.758***
	(0.152)	(0.148)
Perception (%)	−0.006	
	(0.008)	
Prior beliefs (%)	−0.026**	−0.029***
	(0.010)	(0.009)
Female (1/0)	0.003	0.008
	(0.063)	(0.063)
Cabinet approval > 50% (1/0)	0.045	0.055
	(0.092)	(0.091)
Age (years)	−0.002	−0.003
	(0.002)	(0.002)
Employed (1/0)	−0.060	−0.059
	(0.064)	(0.064)
Education (scale 1−7)	−0.029*	−0.028*
	(0.016)	(0.016)
Married (1/0)	0.076	0.078
	(0.067)	(0.067)
Observations	264	264

Note: The dependent variable is an indicator equal to 1 if the posterior belief falls within the bin closest to the BOJ's forecast (approximately 2.8%), and 0 otherwise. The control group is excluded. The *Cabinet approval* dummy equals 1 if the respondent's rating exceeds 50%. Robust standard errors are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 12: Effects of Osaka dialect and political preferences on inflation expectations: Female subsample (1)

	Dependent variable: $\left\|X_i^{\text{post}} - \pi_{BOJ}^{\text{forecast}}\right\| - \left\|X_i^{\text{prior}} - \pi_{BOJ}^{\text{forecast}}\right\|$			
	(1)	(2)	(3)	(4)
	Treatment 1 & 2	Treatment 2	Treatment 1 & 2	Treatment 2
Standard Japanese	✓		✓	
Osaka dialect	✓	✓	✓	✓
Constant	−0.170	0.135	0.376	0.591
	(0.551)	(0.793)	(0.524)	(0.772)
Perception (%)	0.142***	0.145**		
	(0.039)	(0.056)		
Prior beliefs (%)	−0.435***	−0.431***	−0.385***	−0.362***
	(0.034)	(0.051)	(0.032)	(0.047)
Cabinet approval > 50% (1/0)	−0.997***	−1.167**	−1.046***	−1.219**
	(0.369)	(0.515)	(0.366)	(0.521)
Osaka resident (1/0)	−0.596***	−0.778***	−0.629***	−0.816***
	(0.201)	(0.288)	(0.199)	(0.292)
Age (years)	0.022***	0.019*	0.030***	0.028***
	(0.007)	(0.011)	(0.007)	(0.010)
Employed (1/0)	−0.375*	−0.236	−0.369*	−0.224
	(0.216)	(0.314)	(0.214)	(0.318)
Education (scale 1−7)	0.015	−0.028	0.019	−0.029
	(0.057)	(0.083)	(0.057)	(0.084)
Married (1/0)	−0.309	0.138	−0.233	0.179
	(0.207)	(0.297)	(0.206)	(0.301)
Observations	920	460	920	460

Note: The sample is restricted to female respondents. The dependent variable measures the change in absolute distance between prior and posterior inflation expectations relative to the BOJ's forecast. Treatment 1 and 2 refer to the standard Japanese and Osaka dialect audio conditions, respectively. The *Osaka resident* dummy equals 1 if the respondent resides in Osaka. The *Cabinet approval* dummy equals 1 if the respondent's approval rating exceeds 50%. Huber-robust regressions are used to account for outliers, following Coibion et al. (2018, 2023b). Robust standard errors are shown in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 13: Effects of Osaka dialect and political preferences on inflation expectations: Female subsample (2)

	Dependent variable: $I\{X_i^{\text{post}} = \pi_{BOJ}^{\text{forecast}}\}$			
	(1)	(2)	(3)	(4)
	Treatment 1 & 2	Treatment 2	Treatment 1 & 2	Treatment 2
Standard Japanese	✓		✓	
Osaka dialect	✓	✓	✓	✓
Constant	0.758***	0.865***	0.661***	0.740***
	(0.086)	(0.124)	(0.082)	(0.116)
Perception (%)	−0.023***	−0.028***		
	(0.006)	(0.009)		
Prior beliefs (%)	−0.024***	−0.015*	−0.031***	−0.025***
	(0.005)	(0.008)	(0.005)	(0.007)
Cabinet approval > 50% (1/0)	0.122**	0.145*	0.130**	0.158**
	(0.057)	(0.080)	(0.057)	(0.078)
Osaka resident (1/0)	0.085***	0.130***	0.088***	0.130***
	(0.031)	(0.045)	(0.031)	(0.044)
Age (years)	−0.002*	−0.004**	−0.003***	−0.005***
	(0.001)	(0.002)	(0.001)	(0.002)
Employed (1/0)	0.065*	0.043	0.061*	0.038
	(0.034)	(0.049)	(0.034)	(0.048)
Education (scale 1−7)	−0.002	−0.008	−0.003	−0.005
	(0.009)	(0.013)	(0.009)	(0.013)
Married (1/0)	0.049	−0.029	0.039	−0.035
	(0.032)	(0.046)	(0.032)	(0.045)
Observations	920	460	920	460

Note: The sample is restricted to female respondents. The dependent variable is an indicator equal to 1 if the respondent's posterior belief is approximately 3% (i.e., close to the BOJ's forecast of 2.8%), and 0 otherwise. Treatment 1 and 2 refer to the standard Japanese and Osaka dialect conditions, respectively. The *Osaka resident* dummy equals 1 if the respondent resides in Osaka. The *Cabinet approval* dummy equals 1 if the respondent's rating exceeds 50%. Huber-robust regressions are used to account for outliers, following Coibion et al. (2018, 2023b). Robust standard errors are in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

A Appendix: Questionnaire

Q.1. In your opinion, do you think prices have gone up or down compared to a year ago?

(1) Have gone up significantly
(2) Have gone up slightly
(3) Have been unchanged
(4) Have gone down slightly
(5) Have gone down significantly

Q.2. In your opinion, how much do you think prices have changed year-on-year compared to a year ago?

(1) Around +12% or higher (+11.5% or higher)
(2) Around +11% (+10.5% $\sim$ +11.4%)
(3) Around +10% (+9.5% $\sim$ +10.4%)
(4) Around +9% (+8.5% $\sim$ +9.4%)
(5) Around +8% (+7.5% $\sim$ +8.4%)
(6) Around +7% (+6.5% $\sim$ +7.4%)
(7) Around +6% (+5.5% $\sim$ +6.4%)
(8) Around +5% (+4.5% $\sim$ +5.4%)
(9) Around +4% (+3.5% $\sim$ +4.4%)
(10) Around +3% (+2.5% $\sim$ +3.4%)
(11) Around +2% (+1.5% $\sim$ +2.4%)
(12) Around +1% (+0.5% $\sim$ +1.4%)
(13) Around +0% (−0.5% $\sim$ +0.4%)
(14) Around −1% (−1.5% $\sim$ −0.6%)
(15) Around −2% (−2.5% $\sim$ −1.6%)
(16) Around −3% (−3.5% $\sim$ −2.6%)
(17) Around −4% (−4.5% $\sim$ −3.6%)
(18) Around −5% (−5.5% $\sim$ −4.6%)
(19) Around −6% (−6.5% $\sim$ −5.6%)
(20) Around −7% (−7.5% $\sim$ −6.6%)
(21) Around −8% (−8.5% $\sim$ −7.6%)
(22) Around −9% (−9.5% $\sim$ −8.6%)
(23) Around −10% (−10.5% $\sim$ −9.6%)
(24) Around −11% (−11.5% $\sim$ −10.6%)
(25) Around −12% or lower (−11.6% or lower)

Q.3. Over the next year, do you think prices will go up or down?

(1) Will go up significantly

(2) Will go up slightly

(3) Will be unchanged

(4) Will go down slightly

(5) Will go down significantly

Q.4. In some of the following questions, we will ask you to think about the percent chance of something happening in the future. Your answers can range from 0 to 100, where 0 means there is absolutely no chance, and 100 means that it is absolutely certain. For example, numbers like: 2 and 5 percent may indicate "almost no chance"; 18 percent or so may mean "not much chance"; 47 or 52 percent chance may be a "pretty even chance"; 83 percent or so may mean a "very good chance"; 95 or 98 percent chance may be "almost certain".

Over the next year, how likely do you think that the following changes (1)-(10) will occur in the annual inflation rate? (The number entered should total 100.)

(1) increase by 12% or more _____ %

(2) increase by 8% to 12% _____ %

(3) increase by 4% to 8% _____ %

(4) increase by 2% to 4% _____ %

(5) increase by 0% to 2% _____ %

(6) decrease by 0% to 2% _____ %

(7) decrease by 2% to 4% _____ %

(8) decrease by 4% to 8% _____ %

(9) decrease by 8% to 12% _____ %

(10) decrease by 12% or more _____ %

Total XXX

Q.5. ONLY TREATMENT GROUP: Please listen to the audio below.

"The Bank of Japan expects prices, excluding fresh food, to increase by 2.8% compared to the previous year in the current fiscal year."

Q.6. By how much did the Bank of Japan expect prices excluding fresh food to rise this fiscal year compared to the previous year? Please provide the value you heard in the previous audio.

(1) increase by 1.8%

(2) increase by 2.8%

(3) increase by 3.8%

(4) increase by 4.8%

Q.7. I would like to ask again about the price outlook. Over the next year, how much do you think prices will change compared to the previous year?

(1) Around +12% or higher (+11.5% or higher)
(2) Around +11% (+10.5% $\sim$ +11.4%)
(3) Around +10% (+9.5% $\sim$ +10.4%)
(4) Around +9% (+8.5% $\sim$ +9.4%)
(5) Around +8% (+7.5% $\sim$ +8.4%)
(6) Around +7% (+6.5% $\sim$ +7.4%)
(7) Around +6% (+5.5% $\sim$ +6.4%)
(8) Around +5% (+4.5% $\sim$ +5.4%)
(9) Around +4% (+3.5% $\sim$ +4.4%)
(10) Around +3% (+2.5% $\sim$ +3.4%)
(11) Around +2% (+1.5% $\sim$ +2.4%)
(12) Around +1% (+0.5% $\sim$ +1.4%)
(13) Around +0% (-0.5% $\sim$ +0.4%)
(14) Around -1% (-1.5% $\sim$ -0.6%)
(15) Around -2% (-2.5% $\sim$ -1.6%)
(16) Around -3% (-3.5% $\sim$ -2.6%)
(17) Around -4% (-4.5% $\sim$ -3.6%)
(18) Around -5% (-5.5% $\sim$ -4.6%)
(19) Around -6% (-6.5% $\sim$ -5.6%)
(20) Around -7% (-7.5% $\sim$ -6.6%)
(21) Around -8% (-8.5% $\sim$ -7.6%)
(22) Around -9% (-9.5% $\sim$ -8.6%)
(23) Around -10% (-10.5% $\sim$ -9.6%)
(24) Around -11% (-11.5% $\sim$ -10.6%)
(25) Around -12% or lower (-11.6% or lower)

Q.8. How strongly do you support Kishida's cabinet? Please enter a number between 0 and 100, where 0 means you do not support him at all and 100 means you support him completely.

_____

Q.9. Please indicate your gender.

(a) Male
(b) Female
(c) other

Q.10. Please enter your age.

_____

Q.11. Please indicate where you live.

(1) Hokkaido

(2) Aomori

$\sim$

(3) Okinawa

(4) others

Q.12. Are you married?

(1) Yes

(2) No

Q.13. Please indicate your occupation

(1) Company employee / officer

(2) Self employed

(3) Professionals (doctors, lawyers, hairdressers, designers, etc.)

(4) Civil servant

(5) Student

(6) Housewife / househusband

(7) Part-time workers and freelancers

(8) Unemployed / retired

(9) Others

Q.14. Please indicate your educational background.

(1) Primary and secondary school graduates

(2) High school graduate

(3) Technical college graduate

(4) Vocational school graduate

(5) Junior college graduate

(6) University graduate

(7) Graduate-school graduate

(8) Studying at or enrolled in school

Q.15. Please indicate your household's total annual take-home income (total income excluding taxes and social contributions from January to December of the previous year).

(1) Less than 2 million

(2) 2 million $\sim$ less than 3 million yen

(3) 3 million $\sim$ less than 4 million yen

(4) 4 million ∼ less than 5.5 million yen

(5) 5.5 million ∼ less than 7.5 million yen

(6) 7.5 million ∼ less than 9.5 million yen

(7) 9.5 million ∼ less than 12 million yen

(8) More than 12 million yen

B Appendix: Tables

Table B.1: Mean and standard deviation of prior inflation expectations by demographic group

	Mean	Std. Dev.
Gender		
Female	6.70	1.77
Male or others	6.52	1.68
Region		
Osaka residents	6.69	1.80
Non-Osaka residents	6.54	1.65
Age group		
Age 20s	5.51	1.55
Age 30s	6.10	1.52
Age 40s	6.40	1.64
Age 50s	7.09	1.73
Age 60s	7.09	1.86
Age 70s	7.25	1.99
Marital status		
Married	6.91	1.76
Not married	6.24	1.68
Education		
College graduate (BA+)	6.67	1.76
Non-college graduate	6.55	1.69
Employment status		
Employed	6.52	1.64
Retired or unemployed	6.52	1.82
Income		
Household income $<$ 7.5M yen	6.64	1.76
Household income $\geqq$ 7.5M yen	6.51	1.59
Cabinet approval rating		
Approval $<$ 50%	6.81	1.77
Approval $\geqq$ 50%	6.01	1.58

Note: Respondents who failed the Q6 attention check are excluded. Inflation perception and expectation values are winsorized at the 1st and 99th percentiles.