Carleton College Department of Economics
Working Paper Series

No. 2024-01

Inflation Expectations and Political Polarization: Evidence from the Cooperative Election Study

Ethan Struby
Carleton College

Christina Farhart
Carleton College

Department of Economics
Carleton College
One North College Street
Northfield, MN 55057
Telephone: (507) 222-4109

January 2024

Inflation expectations and political polarization: evidence from the Cooperative Election Study

Christina E. Farhart and Ethan Struby *

January 30, 2024

Abstract

Using a unique, nationally representative survey from the 2022 midterm elections, we investigate the partisan divide in beliefs about inflation and monetary policy. We find that party identity is predictive of inflation forecasts even after conditioning on beliefs about both past inflation and the Federal Reserve's long-run inflation target. Partisan forecast differences are driven by respondents who express low generalized trust in others and have a high degree of political knowledge; high-trust and low-knowledge partisans make similar forecasts all else equal. This finding is consistent with the literature in political psychology that examines the endorsement of conspiracy theories and political misinformation. We argue that the partisan divide in consumer inflation surveys is consistent with strategic responses by partisans.

*Farhart: Carleton College Department of Political Science and International Relations. Struby: Carleton College Department of Economics and Boston College Department of Economics. Thanks to partnership and support from Joanne Miller at the University of Delaware, the data in this survey is from a module of the 2022 Cooperative Election Study, which received support from the National Science Foundation (award number #2148907). Thanks to Alice Qin for excellent research assistance and the Carleton Humanities Center for financial support. We are grateful for suggestions and comments from Dean Croushore, Ryan Chahrour, Aeimit Lakdawala, and Jane Ryngaert. Any mistakes are our own.

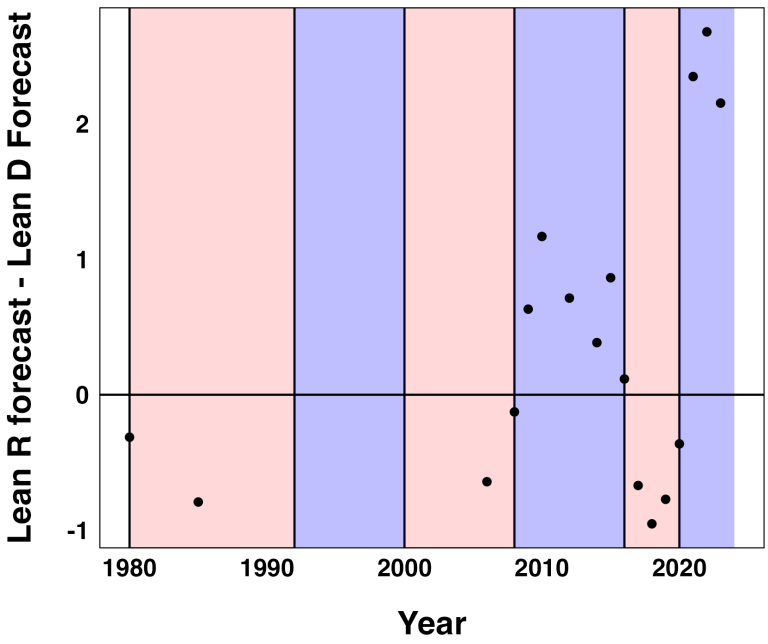

Figure 1: Difference in mean 12 month inflation expectations from Michigan Survey of Consumers. Difference is calculated between as the mean forecast of respondents who lean towards the Republican party minus the mean forecast of respondents who lean towards the Democratic party. Shading indicates party of the President (red == Republican).

1 Introduction

Household surveys of forecasts and sentiment are an important source of information for economists interested in testing theories of cognition and forward looking decision making, and for policymakers seeking to understand the impacts of their policies and the state of the economy. However, the extent to which "noneconomic" factors – such as partisan attitudes – influence survey responses complicates their interpretation. For example, Curtain (2018) notes that a significant and persistent partisan divide opened in the in the University of Michigan Survey of Consumers after the 2016 Presidential election. Figure 1 shows that the average inflation forecast among Democrats in the Michigan survey is higher than that of Republicans when a Republican controls the presidency, and vice-versa. Brady et al. (2022) and Mian et al. (2023) note a similar divide in Gallup data. Kay et al. (2023) show that professional forecasts from the Wall Street Journal survey display a partisan influence, with

forecasters affiliated with one of the major parties systematically adjusting their forecasts across Presidential administrations. The influence of partisanship on inflation forecasts may reflect an important deviation from the full information rational expectations benchmark, or differences in expected policies. Either of these explanations would might imply differences in economic behavior. However, there is mixed evidence that election-induced changes changes in expressed consumer sentiment affect actual spending behavior (for example, compare Mian et al. (2023) and Kamdar and Ray (2023)).

In this paper, we use a unique cross-sectional dataset from the 2022 round of the Cooperative Election Study (CES), a nationally representative survey of US households prior to and following the 2022 midterm elections. This survey contains a large range of questions about personal identity, demographic characteristics, and political and social beliefs. As part of our survey module, we ask respondents to provide a *nowcast* of inflation (the inflation rate over the past twelve months), a *forecast* over the next twelve months, and their beliefs about the Federal Reserve's long-run inflation target. Alongside these questions, we have a wide range of demographic and economic characteristics of respondents, and information about their social and political views. In particular, we have much more detail about social and political views relative to the Michigan Survey of Consumers (which focuses on partisan lean alone) or the the Federal Reserve Bank of New York's Survey of Consumer Expectations (SCE) (which does not ask for respondents' party or political attitudes).

We use this survey data to investigate the partisan divide in forecasts. We motivate our empirical specification with a simple model of forecasting with noisy information (e.g., Lucas (1972); Woodford (2003); Coibion and Gorodnichenko (2012)) allowing for both diagnostic beliefs (Bordalo et al. (2020)) and differences in belief about long-run average inflation (Patton and Timmermann (2010)). The model implies that agents' forecasts should be a function of their beliefs about the long run and their belief about the current rate of inflation alone. Diagnostic beliefs or differences in the signals are subsumed in agents' current forecasts. While the cross-sectional nature of our data does not permit estimation of (most of) the

structural parameters of the signal extraction problem, it provides a stark hypothesis that other characteristics should not have explain forecasts once we condition on beliefs about the present. Indeed, these two variables alone explain more than 50% of the variance of forecasts. But we also find that *conditional on* their beliefs about current and long-run inflation, the party identification of the survey respondent significantly enters the cross-sectional regression. This effect survives the addition of additional controls such as income, educational attainment, and age.

We use other information about political and social beliefs to investigate the partisan divide. We find, in particular, that *politically knowledgeable, low-trust* partisans are the source of differences in forecasts across the political spectrum. Respondents who do not know much about politics (in the sense that they offer incorrect answers to basic questions about politics and government) hold similar beliefs regardless of party affiliation. Moreover, knowledgeable partisans who express high trust also hold similar beliefs. The interaction between low levels of trust *and* high political knowledge seems to be the source of differences in partisan forecasts. Our results suggest that the widening of partisan responses about inflation may be related to the widespread decline in trust documented by other surveys, such as the General Social Survey (Smith et al. (2023)), as shown in figure 2.

We interpret this finding through the lens of the political psychology literature on endorsement. Miller et al. (2016) show that high-knowledge, low-trust partisans who are on the losing side of politics are most likely to endorse conspiracy theories (i.e., about former President Obama's birthplace or the the Federal government's role in the September 11 attacks). Although beliefs about the likely rate of inflation are qualitatively quite different than the beliefs studied by Miller et al., we find a similar pattern; sophisticated partisans who express low trust drive the divide. Survey responses may be interpreted as endorsing a particular belief – e.g., "inflation is bad, and so is the party in power." This endorsement confirms a particular political worldview and satisfies psychological desires for order and certainty. This interpretation is consistent with the absence of a partisan screen on questions about

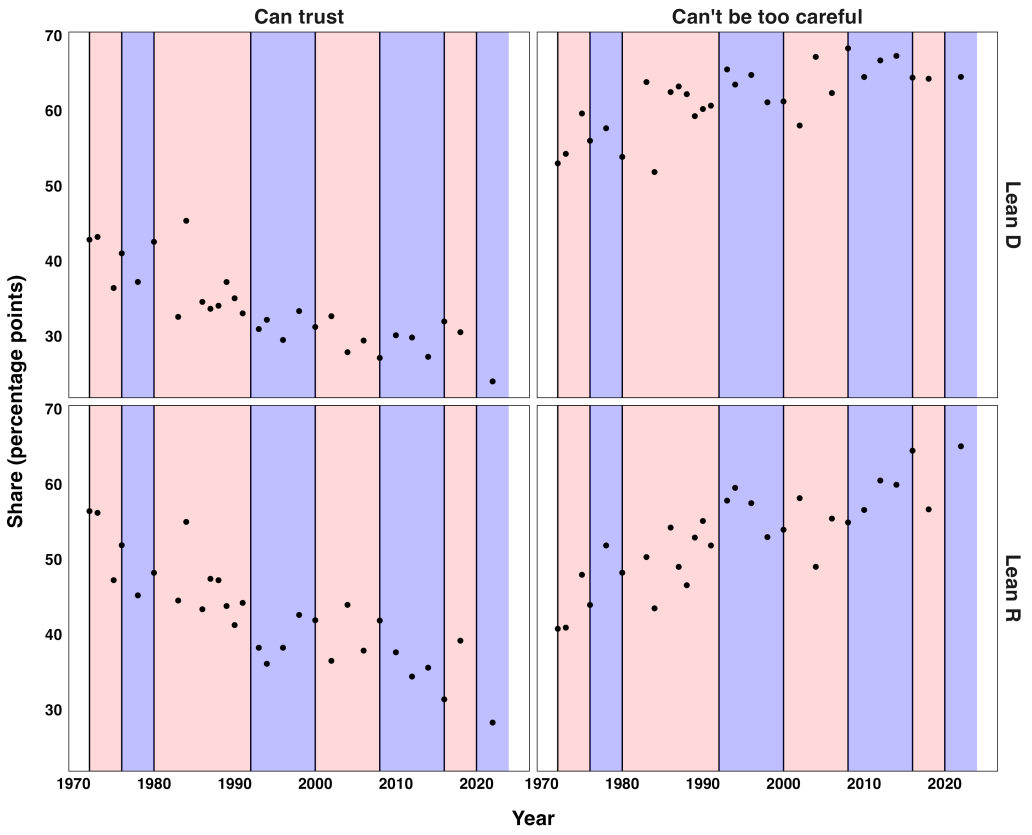

Figure 2: Share of responses to the question "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" in the General Social Survey (Smith et al. (2023)). Top row shows respondents whose part affiliation leans Democratic, bottom are for those who lean Republican. Sum is less than 100% due to the exclusion of respondents who indicated that "it depends." Shading indicates party of the President (red == Republican).

the effects of Federal Reserve policy, which may be harder to link to a partisan ideological worldview.

More formally, this type of behavior can be rationalized as a best response in a simple (anti)coordination game, where more precise private information reduces weights on common information when agents face a loss from playing similar actions. To the extent these survey responses are expressive rather than reflecting "true" underlying forecasts, this may help explain the limited effect of election-induced optimism and pessimism on economic activity.

The next section briefly reviews the relevant literature. Section 3 describes our simple theoretical framework. Section 4 describes the survey, and section 5 contains the main results on inflation forecasts. We then conclude.

2 Literature

Economic forecasting behavior The centrality of forward-looking behavior in dynamic economic theory has given rise to a large literature on economic expectations (particularly, expected inflation). Coibion et al. (2018), Weber et al. (2022), Bordalo et al. (2022), Weber (2022), and D'Acunto et al. (2023) provide extensive reviews. In general, the literature has found that forecast surveys are informative for understanding firms' investment behavior (e.g. Gennaioli et al. (2016)) and the evolution of realized inflation (Coibion and Gorodnichenko (2015)). Evidence from randomized controlled trials also suggests that changes in inflation expectations cause changes in household spending (Coibion et al. (2019)) and in firms' borrowing, employment, and pricing decisions (Coibion et al. (2020a)). A robust finding in this literature is that the forecasts of professionals are quantitatively distinct from those of households – the latter tend to be higher (on average) and more dispersed (Weber et al. (2022)).

Economists have found it difficult to reconcile the canonical full information rational expectations model of belief formation with forecast surveys. Different theories – such as

rational inattention (Sims (1998, 2003); Maćkowiak et al. (2021); Nimark and Sundaresan (2019)), "sticky" information (Mankiw and Reis (2002)), signal extraction (e.g., Coibion and Gorodnichenko (2012)), and diagnostic expectations (Bordalo et al. (2022)) – have emphasized that cognitive constraints (in the firm of costly information processing or psychological and behavioral biases) may influence agents' beliefs and behavior.[1] Nimark and Sundaresan (2019), in particular, show that under certain formulations of rational inattention, the information agents will choose to observe is likely to reinforce their prior beliefs. There is also evidence that professional forecasters may respond to surveys strategically. Croushore (1997) notes competing incentives of forecasters responding to surveys – either to remain close to the consensus, or to make bold predictions to stand out – and Ottaviani and Sørensen (2006) develop game-theoretic models of forecaster behavior to rationalize either forecasts being "shaded towards the mean" or excessively differentiated. Broer and Kohlhas (2022) and Valchev and Gemmi (2023) study combinations of strategic and behavioral assumptions that can rationalize patterns of under- and overreaction to public and idiosyncratic information in professional forecasts. We differ from these papers by considering *household* forecasts and focusing on a particular psychological channel of partisan disagreement.

Partisanship, economic forecasts, and behavior Informed by the extensive political science and psychology literature on partisanship and ideology, some authors have explored how partisan motives may impact survey forecasts. Gerber and Huber (2009) find that partisans tend to be more optimistic when their party is in power, and that shifts in optimism after presidential elections is associated with higher economic activity (as measured by county-level tax receipts). However, McGrath (2017) shows this result is driven mainly by a change in Texas after the 1996 presidential election; extending the sample, she finds no evidence of increased economic activity, consistent with a "partisan cheerleading" interpretation. Using data from the University of Michigan consumer survey and Gallup's household

[1] Bénabou (2015) reviews the literature incorporating motivated beliefs into economics, although he does not focus on forecasting or belief elicitation specifically.

panel, Mian et al. (2023) document a sizeable shift in inflation expectations around the 2008 and 2016 US Presidential elections, where partisans' assessment of the economy diverged based on whether their preferred party won or lost the White House. However, Mian et al. find no evidence that higher Republican vote share after the 2016 election is associated with associated with actual changes in spending, consistent with McGrath. By contrast, Kamdar and Ray (2023) argue that partisanship is an important predictor of sentiment and consumption behavior. They show that "sentiment" (the first component estimated from a number of categorical measures of beliefs about economic and personal outlook in the Michigan survey) is persistent within households, negatively correlated across partisans, and shifts in response to elections and other political events. Using Nielsen data, they find in an event study that forecasts and consumption behavior persistently grew for Republicans relative to Democrats after the the 2016 election, but do not find an effect following the 2020 Presidential election. We view our study as complimentary to Kamdar and Ray (2023). We focus on inflation expectations and questions about monetary policy, rather than general economic optimism or pessimism, and on an election where inflation was a front-and-center issue. Relative to their data, we have more detail about the ideological orientation of respondents beyond their partisanship, but do not have dynamic data or data on consumption. We discuss our findings in more detail relative to those of Kamdar and Ray in section 5.

Binder (2023) finds that the partisan spread in consumer inflation forecasts reverses around Presidential elections (with partisans of the party in the White House tending to believe inflation will be lower in the future) and that the gap in inflation expectations by party (and by partisan intensity) has widened over time. Gillitzer et al. (2021) show that independent of gender, age, and income, partisans in the United States and Australia tend to forecast lower inflation when their party is in control. Their Australian data further suggests that partisans tend to associate lower inflation with better economic outcomes. They argue this is consistent with stereotyping bias about economic outcomes as they relate to the party in power along the lines of Bordalo et al. (2016). Bachmann et al. (2021) find that a quarter

of the difference in inflation expectations across states in the SCE is explained by partisan leanings of the state relative to the party of the President. Coibion et al. (2020b) conduct a survey of voters prior to the 2020 Presidential election and find that voters were polarized by party both in terms of who they expected to win the election and the predicted outcome for the economy conditional on the outcome.

Rather than a sample of professionals (who arguably face a different set of motives and constraints when forecasting, and may face a particular set of "strategic misreporting" motives (Ottaviani and Sørensen (2006)), our sample is nationally representative and speaks to the beliefs of households generally. Understanding household, rather than professional forecasts, is important as a guide to policymakers. In addition to the direct interest in studying household beliefs, household forecasts (such as the Michigan or SCE survey) are an input into the monetary policy process.[2] We show that the forecasts we elicited have a similar distribution as these longer-running surveys conducted at the same time, which gives us confidence that our results are externally valid.

3 Theory

A simple conceptual framework To illustrate the conceptual link between prior beliefs, beliefs about the current state of the world, and forecasts, we introduce a simple model of belief formation with noisy signals. This motivates a cross-sectional regression that reflects the structure of our data.

Suppose that that the *true* current level of inflation, π_t can be decomposed into two components: an AR(1) component p_t and a temporary (i.i.d) component u_t.

[2]For example, the minutes of the June 13-14 2023 FOMC meeting summarize the following except from the FOMC staff's presentation:

> Survey-based measures of longer-term inflation expectations in May from the University of Michigan Surveys of Consumers and the Federal Reserve Bank of New York's Survey of Consumer Expectations remained within the range of their values reported in the decade before the pandemic; near-term measures of inflation expectations from these surveys moved down in May and continued to be below their peaks seen last year.

$$\pi_t = p_t + u_t, u_t \sim N(0, \sigma_u^2) \tag{1}$$

$$p_t = \rho p_{t-1} + \varepsilon_t, |\rho| < 1, \varepsilon \sim N(0, \sigma_\varepsilon^2) \tag{2}$$

$$E(u_t, \varepsilon_s) = 0 \text{ for all } t, s \tag{3}$$

The literature on economic belief formation reviewed in section 2 generally assumes that agents do not observe the true π_t or its components. An agent who attempts to minimize mean square error using idiosyncratic, noisy signals s_{it}, combined with knowledge of the data generating process (e.g., the parameters $\rho, \sigma_u, \sigma_\varepsilon$ and knowledge of the joint distribution of u and ε) will have conditional expectations $E(\hat{\pi}_t|\Omega_{it})$, where Ω_{it} is her information set at time t (the history of observed signals). The optimal beliefs resemble the familiar Kalman filter updating equation [3]

$$E(\pi_t|\Omega_{it}) = E(\pi_t|\Omega_{it-1}) + \kappa(s_{it} - E(s_{it}|\Omega_{it-1})) \tag{4}$$

In other words, her beliefs about the current state will be a linear combination of her forecast based on the information she had available previously, $E(\pi_t|\Omega_{it-1})$, and an update based on the new information she receives at time t (s_{it}). The weight κ is a function of the variance-covariance matrices governing the joint distribution of s_{it} and π_t.

We consider two modifications to equation (4) that are commonly applied. First, we consider the possibility that the forecaster might over-weight new information, as in the "diagnostic expectations" framework of Bordalo et al. (2020). Then, her current belief is

$$\widetilde{\pi}_{it} = E(\pi_t|\Omega_{it-1}) + (1+\theta)\kappa(s_{it} - E(s_{it}|\Omega_{it-1})) \tag{5}$$

[3]This assumes the agent applies the steady state Kalman filter, as is common in the literature. The precise assumption of Bayesian updating in (4), though also common in this literature, can likely be generalized along the lines of the general linear forecast function used in Valchev and Gemmi (2023) without substantially modifying the form of the equation. However, the assumption of an AR(1) process for inflation allows for the straightforward extension to incorporate diagnostic beliefs and differences in priors about the long run.

In this expression, beliefs are a weighted average of past beliefs (as in (4) and the signals they observe, where the (over)weight on the signals is distorted by the parameter θ. Clearly, if $\theta = 0$, this nests (4).

We also allow for the possibility (following Patton and Timmermann (2010)) that the forecaster might anchor her forecasts on a (possibly idiosyncratic) long-run average value of π, $\bar{\pi}_i$. Her forecast, therefore, takes the form of a shrinkage estimator where the degree of shrinkage is governed by a parameter ω:[4]

$$\widetilde{\pi}_{it+1|t} = \omega\bar{\pi}_i + (1-\omega)\rho\widetilde{\pi}_{it} \tag{6}$$

Equation (6) characterizes a baseline model of the cross section of near term inflation forecasts. The tests following Coibion and Gorodnichenko (2012) rely on observing past average forecasts (or forecast revisions), so the structure of our data precludes directly applying their specifications. However, we can estimate a cross-sectional version of (6) directly.

4 Details of the survey

4.1 General information about the survey

Our data is part of a module from the Cooperative Election Study (formerly the Cooperative Congressional Elective Survey) (Schaffner et al. (2023)). The CES is a nationally representative survey of adults administered by YouGov, a public opinion and data firm. Our module includes one thousand respondents in the pre-election wave, although some of them are dropped due to non-response to particular questions. The specific questions in the module we used to elicit beliefs about inflation and monetary policy are included in appendix A. Histograms of the raw responses are shown in figure 3. In appendix A, we also

[4]In the Patton and Timmermann (2010) setup, this parameter is a function of the expected mean square error of the agents' forecast and an exogenous parameter that governs the strength of the long-run prior. While the distinction is important for their application to identify forecast heterogeneity, we adopt the more reduced form here for simplicity.

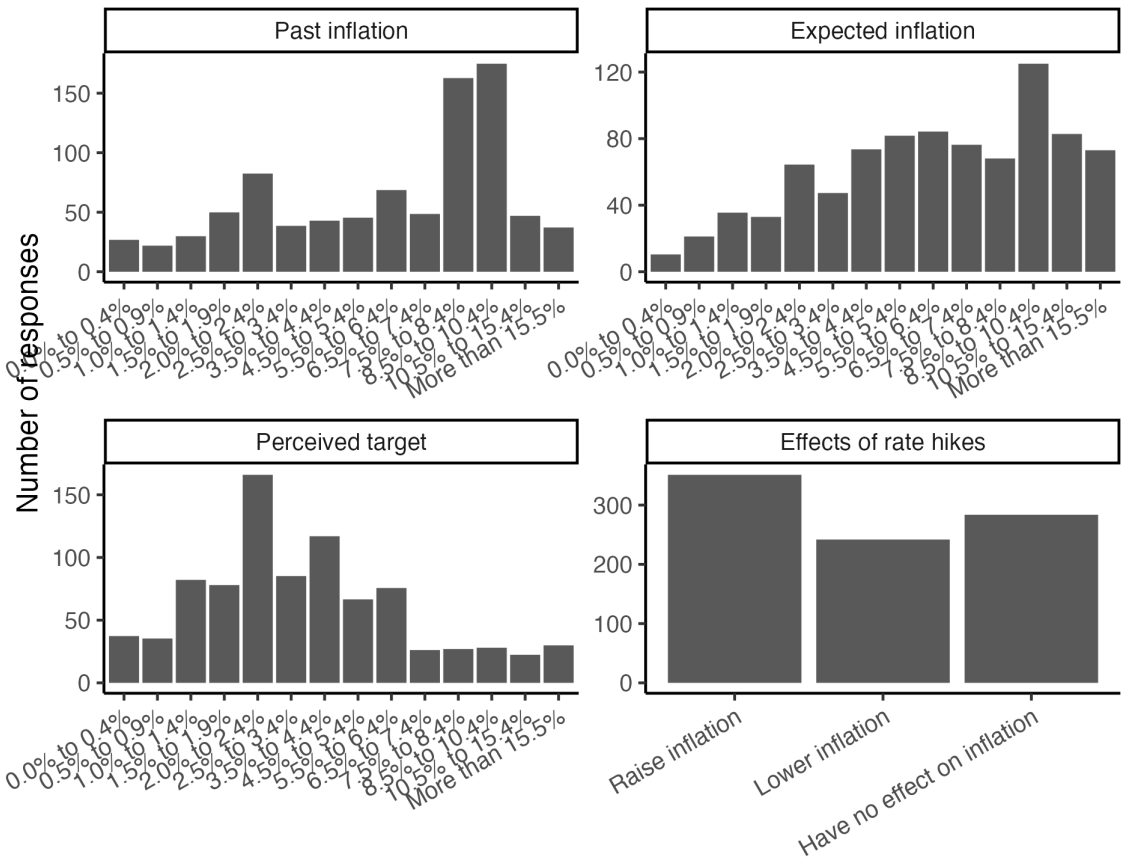

Figure 3: Histogram of responses to survey questions about inflation and monetary policy. The text of the questions are reported in appendix A.

report some additional raw results and cross-tabulations of responses.

4.2 Are our survey responses sensible?

Before moving to the main empirical model, we first examine whether survey responses are internally consistent, as well as consistent with other surveys. To address the former, we compare the *quantitative* descriptions of past inflation provided by respondents to their *qualitative* characterization of prices changes over the past year. The latter simply asks respondents to qualitatively describe price changes on a five-point scale from "Decreased a lot" to "Increased a lot". The cross-tabulated responses are displayed in table 1. The bulk of responses seem sensible; most responses are located in the first two columns ("increased a

-	Increased a lot	Increased somewhat	Stayed about the same	Decreased somewhat	Decreased a lot
0.0% to 0.4%	1.4	1.4	0.3	0.0	0.0
0.5% to 0.9%	1.1	1.4	0.1	0.0	0.0
1.0% to 1.4%	2.2	0.9	0.1	0.2	0.0
1.5% to 1.9%	2.2	2.9	0.6	0.0	0.0
2.0% to 2.4%	5.0	3.8	0.3	0.2	0.1
2.5% to 3.4%	1.9	1.9	0.3	0.0	0.1
3.5% to 4.4%	2.9	1.4	0.6	0.0	0.0
4.5% to 5.4%	3.3	1.9	0.1	0.0	0.0
5.5% to 6.4%	5.7	1.7	0.5	0.0	0.0
6.5% to 7.4%	3.8	1.6	0.1	0.0	0.0
7.5% to 8.4%	13.0	5.5	0.1	0.0	0.0
8.5% to 10.4%	14.6	4.4	0.2	0.5	0.1
10.5% to 15.4%	5.2	0.2	0.0	0.0	0.0
More than 15.5%	4.1	0.1	0.0	0.0	0.0

Note:
Weighted percentages of sample. Ex-post correct price increase bin for survey window is 7.5 to 8.4 percent

Table 1: Cross-tabulation of responses to questions about perception of price changes over the past year . Each entry is the percentage of the sample falling in a bin characterized by a quantitative statement about inflation over the previous year (rows) and a qualitative description of price changes in the previous year (columns).

lot" or "increased somewhat") and are concentrated in bins with inflation exceeding 5.5%.

We also compare the responses to our survey to similar forecast surveys that were conducted at approximately the same time. In particular, we convert responses to the question about inflation expectations to numerical responses by using the midpoints of the bins (except for the top bin, which is top coded at 15.4%), and compare those numerical responses to the price expectations question from the October and November rounds of the Michigan Consumer Survey and the survey of Professional Forecasters and the Federal Reserve Bank of New York Survey of Consumer Expectations (SCE) from September and October. Numerical features of the distributions are reported in table 2 and raw responses are plotted in figure 4. The raw responses from the Michigan survey are top- and bottom-coded at different values from our survey, while the SCE does not remove any outliers, which accounts for differences in ranges of responses. However, the median and interquartile range of our survey is similar to the Michigan survey and SCE, which gives us confidence that the household expectations we elicit are broadly consistent with those surveys. Professional forecasters' implied inflation expectations were much lower than those of household surveys; the 75th percentile of the SPF is below the 25th percentile of either our results or those from the Michigan survey,

	Survey	Range	Mean	Median	Std. Dev	IQR
Point forecast	CES	[0.2, 15.5]	6.82	5.95	4.25	[3.95, 9.45]
	Michigan, Oct 2022	[1, 50]	9.04	6.00	8.60	[4, 10]
	Michigan, Nov 2022	[1, 50]	9.35	6.00	9.55	[4, 10]
	SPF, 4Q 2022	[1.71, 7.06]	3.67	3.35	1.21	[3.06, 3.85]
	SCE, Sept 2022	[-80, 100]	7.52	6.00	13.43	[3, 10]
	SCE, Oct 2022	[-55, 100]	8.96	6.00	14.78	[3, 10]

Table 2: Comparison of point forecasts of expected 12 month change in consumer prices. CES responses are converted to numeric score by taking midpoint of bin.

and just barely above that of the SCE. The standard deviation of SPF forecasts is barely a quarter of the next-least dispersed household forecast. This is consistent with the qualitative comparison of household and professional forecasts reported in Weber et al. (2022).

5 Empirical model

Our basic regression model is a version of equation (6):

$$\widetilde{\pi}_{i,t+1|t} = \beta_0 + \beta_1 \bar{\pi}_i + \beta_2 \widetilde{\pi}_{it} + \boldsymbol{\gamma}' \mathbf{X_{it}} + \varepsilon_{it} \tag{7}$$

Here, $\mathbf{X_{it}}$ is a vector of additional controls. The strongest interpretation of the theory outlined above implies the joint hypothesis that $\beta_0 = 0$ and $\boldsymbol{\gamma}' = 0$. The reason is that individual characteristics – age, differences in media diet, quantitative sophistication, and other facets of demographic and political identity – may impact the history of signals observed by agents, but those effects should be subsumed in beliefs about current inflation or priors about the long run. This is true even if agents are "behavioral" in the sense of suboptimally over-emphasizing recently-observed signals.

We are particularly interested in an alternative hypothesis drawn from the political psychology literature. That literature suggests that partisans may differ in their expressed forecasts because of a combination of partisanship and motivated reasoning. Particularly, high-knowledge partisans know the "correct" partisan answer (e.g., Democrats downplaying

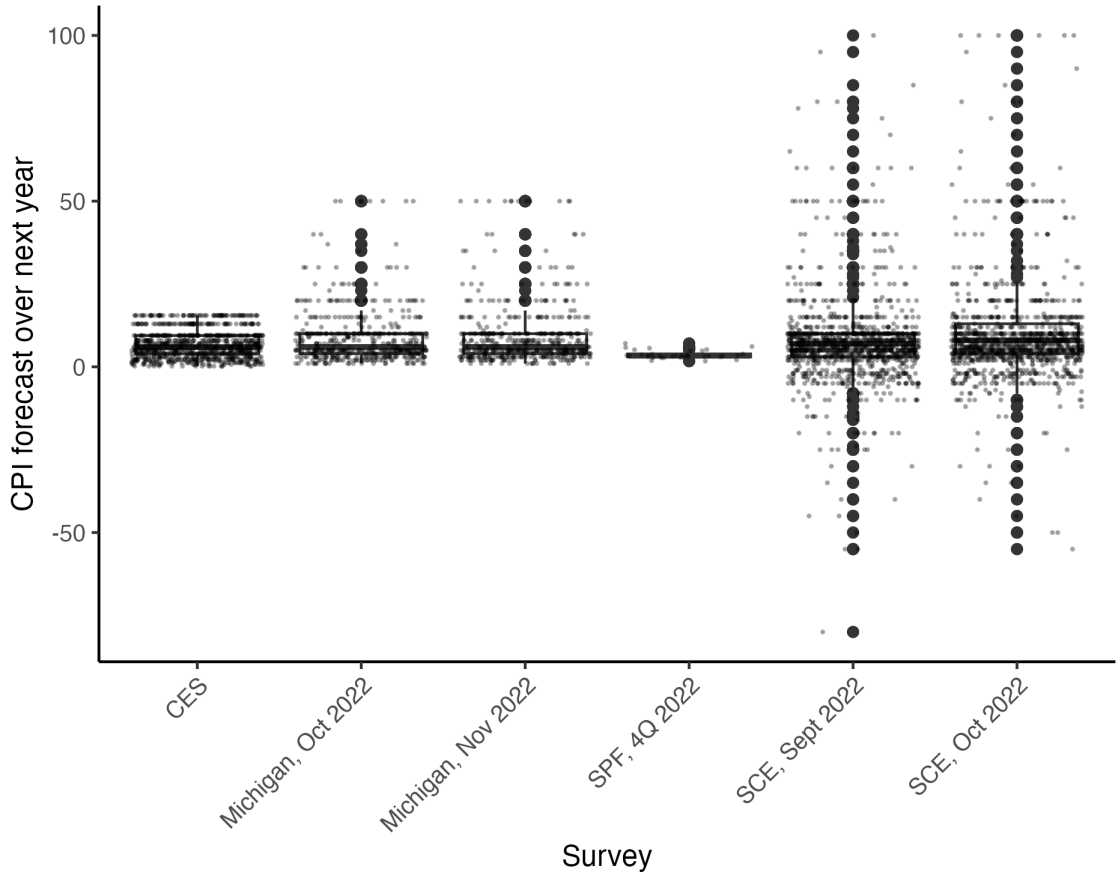

Figure 4: Comparison of survey forecasts for 12 month consumer price changes with overlapping survey windows. CES responses are from September 29-November 8. University of Michigan, Survey Research Center (2022) ("Michigan") dates are September 28-October 24 (October survey) and October 26 to November 19 (November survey). Survey of Professional Forecasters (SPF) dates are October 27 to November 8. SCE responses are from throughout the survey month.

inflation risks when a Democrat controls the White House), so they may be more likely to state a forecast that reflects well on (or badly on) the political party in power. The political psychology literature on endorsement (Miller et al. (2016)) has found that it is precisely high-knowledge, low-trust individuals that are likely to endorse political misinformation in the form of conspiracy theories. In light of those results, we investigate whether high- and low-trust partisans respond differently to the forecast survey even conditional on their stated beliefs about the present.

We report results from estimating equation (6) in table 3. The first column of the table omits the long-run inflation forecast and any additional controls from the estimate of equation (6); this regression confirms that beliefs about inflation over the past twelve months are positively correlated with beliefs about its likely evolution over the next 12 months. Column 2 adds responses to the question about the Federal Reserve's inflation target without additional controls. This attenuates the coefficient on past inflation somewhat, and the sum of the coefficients is close to 1, which is consistent with a (perceived) autoregressive coefficient on inflation close to 1. Although the exact time series process for inflation is debated in the literature, a unit root forecast often performs quite well (Atkeson and Ohanian (2001); Stock and Watson (2008)). In other words, our model-consistent benchmark does not imply that the survey respondents have *prima facie* unreasonable beliefs about inflation dynamics.

Columns 3 and 4 report estimates of the model incorporating information about the political ideology and party affiliation of the respondent, as well as whether they express "high trust" (an average response of 2 or above on the different trust-related questions described in appendix A.2).[5] Column 3 adds the political variables alone, while column 4 adds a set of economic and demographic controls; the results are similar. Here, although the

[5]While ideology and party identification are correlated, the political science literature has emphasized that they are distinct concepts; "social" polarization, tied to identity, is distinct from "issue polarization." Ideology and party identity in the United States have become more aligned over time (Mason (2015)). Table 8 displays cross-tabulations of the disaggregated party identification and the more coarse party lean variable used in our analysis with ideology scores. While those identifying with the Republican party more frequently describe themselves as (very) conservative and Democrats as (very) liberal, members of both parties self-identify as moderate and there are Republicans who describe themselves as liberal and Democrats as conservative. We show in appendix B that our results are insensitive to including ideology as a regressor.

Table 3: Cross-sectional forecasting regressions and political attitudes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Past inflation	0.748***	0.672***	0.620***	0.624***	0.606***	0.603***	0.605***	0.603***	0.604***
	(0.043)	(0.045)	(0.049)	(0.049)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
Belief about long-run inflation target		0.328***	0.306***	0.305***	0.310***	0.321***	0.310***	0.322***	0.323***
		(0.044)	(0.051)	(0.050)	(0.049)	(0.048)	(0.050)	(0.049)	(0.049)
Ideology			−0.193	−0.180	−0.197	−0.102	−0.213	−0.123	−0.110
			(0.138)	(0.154)	(0.160)	(0.171)	(0.160)	(0.170)	(0.174)
Republican			1.465***	1.424***	1.483***	−1.090	1.477***	−1.295	−1.687
			(0.387)	(0.432)	(0.454)	(1.289)	(0.468)	(1.322)	(1.527)
Independent			0.902*	0.717	0.941*	−0.698	1.169**	−0.553	−1.004
			(0.522)	(0.515)	(0.566)	(1.302)	(0.590)	(1.302)	(1.473)
Not sure party			0.081	−0.208	0.121	−0.205	0.119	−0.267	−0.476
			(1.419)	(1.618)	(1.687)	(11.326)	(1.692)	(11.311)	(11.371)
$\mathbb{I}$(High trust)			−0.236	−0.144	−0.203	−0.074	0.009	0.042	−0.706
			(0.321)	(0.339)	(0.345)	(0.353)	(0.369)	(0.362)	(1.531)
Registered voter			0.492	0.328	0.177	−0.022	0.119	−0.092	−0.109
			(0.528)	(0.567)	(0.563)	(0.587)	(0.565)	(0.586)	(0.596)
Consumed media in past 24 hours					−0.414	−0.454	−0.403	−0.428	−0.393
					(0.610)	(0.617)	(0.615)	(0.627)	(0.645)
Pays attention					0.321	0.329*	0.331*	0.339*	0.322
					(0.196)	(0.196)	(0.197)	(0.197)	(0.203)
Correct partisan order					−0.597	−0.510	−0.570	−0.439	−0.400
					(0.717)	(0.737)	(0.713)	(0.713)	(0.717)
Political knowledge (0-5)					0.066	−0.249	0.075	−0.249	−0.294
					(0.187)	(0.257)	(0.189)	(0.256)	(0.294)
Republican × Political knowledge						0.695**		0.730**	0.831**
						(0.310)		(0.313)	(0.364)
Independent × Political knowledge						0.430		0.448	0.563
						(0.338)		(0.334)	(0.379)
Not sure party × Political knowledge						−0.210		−0.209	−0.162
						(4.283)		(4.275)	(4.294)
Republican ×$\mathbb{I}$(High trust)							0.089	0.605	2.706
							(1.187)	(1.260)	(3.197)
Independent ×$\mathbb{I}$(High trust)							−2.218**	−2.264**	1.195
							(0.896)	(0.924)	(2.324)
Political knowledge ×$\mathbb{I}$(High trust)									0.188
									(0.360)
Republican × Knowledge Score ×$\mathbb{I}$(High trust)									−0.668
									(0.818)
Independent × Knowledge Score ×$\mathbb{I}$(High trust)									−0.873
									(0.549)
Constant	2.033***	1.203***	1.145	0.813	1.502	2.336	1.401	2.228	2.285
	(0.247)	(0.234)	(0.775)	(1.350)	(1.534)	(1.610)	(1.541)	(1.610)	(1.640)
N	911	911	843	842	826	826	826	826	826
R2	0.46	0.53	0.55	0.56	0.57	0.58	0.57	0.58	0.58
R2 Adj.	0.46	0.52	0.55	0.55	0.55	0.56	0.56	0.56	0.56
Demographic and Economic controls	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes

* p < 0.1, ** p < 0.05, *** p < 0.01

Note:

Heteroskedasticity-robust standard errors shown in parentheses. Partisan categories (Republican, Democrat (excluded), Independent) obtained by consolidating self-identified partisan lean, including "Lean" and "not very strong" Democrats and Republicans as partisans of those respective parties; "Not sure party" indicates the respondent answered "Not sure" or "Don't know" about which party they leaned towards. "Ideology" is a self rating from 1-5 where 1 is very conservative and 5 is very liberal. Trust is measured as the average response to questions about whether the Federal government, law enforcement, scientists, media, and people in general can be trusted of is on a scale of 0-3 where 0 indicates almost never and 3 indicates they can always be trusted; "High Trust" is an average score of 2 or above. "Pays attention" is self rated attention paid to current affairs, where 0 is "hardly at all" and 3 is "most of the time". "Correct partisan order" takes on a value of 1 if respondent said Democratic party was as or more liberal than the Republican party. "Political knowledge" is the sum of how many factual questions about government and current affairs were answered correctly by the respondent. Specifications with "Demographic and Economic controls" include: an indicator variable for White respondent, indicator for Hispanic, categorical variables for educational attainment, age, categorical variables for annual family income, indicator for having a child under 18, owning a home, and whether they can obtain money needed for a 400 dollar emergency expense).

coefficient estimates on past and long-run inflation do not change much compared to column 2, party affiliation becomes significant. All else equal, the model implies a Republican would predict inflation 1.4% higher than a Democrat would. This explains a significant proportion of the raw differences in forecasts documented in the Michigan survey shown in figure 1.

We may be concerned that partisan differences in forecasts are proxies for differences in attention to economic news. In column 5, we add controls for whether the respondent consumed media (of any kind) in the past day, whether they describe themselves as someone who pays attention to politics, and whether they correctly answer a set of factual questions about government and political institutions. These additions do not markedly change coefficient estimates or significance, except perhaps shifting the weight on past inflation slightly. However, in column 6 we show the results of interacting political party with political knowledge score. The indicator variable for Republican (e.g., the difference, all else equal, between the responses of a Democrat and Republican who answered none of the political knowledge questions correctly) becomes insignificant, but the the interaction term is significant. In other words, Republicans with higher political knowledge report higher expected inflation than Republicans with low political knowledge, all else equal. Column 7 replaces this interaction terms with interactions between the trust indicator and party affiliation, and column 8 incorporates both; Republican party lean alone is only significant in specifications where we ignore the interaction between party affiliation and political knowledge (as seen by comparing columns 7 and 8). Finally, column 9 incorporates a triple interaction between party affiliation, political knowledge, and trust. Although the triple interaction term alone is insignificant, figure 5 shows differences between predicted inflation forecasts implied by column 6 (the top panel) and 9 (bottom panel). In the top panel, the predicted inflation forecast of two identical respondents with different party affiliations and levels of knowledge are shown. Only for high-knowledge partisans are the two forecasts statistically different from one another (the 99% confidence bands include zero). The lower panel uses the implied forecasts from column 9, for low-trust (left) and high-trust (right) partisans with different

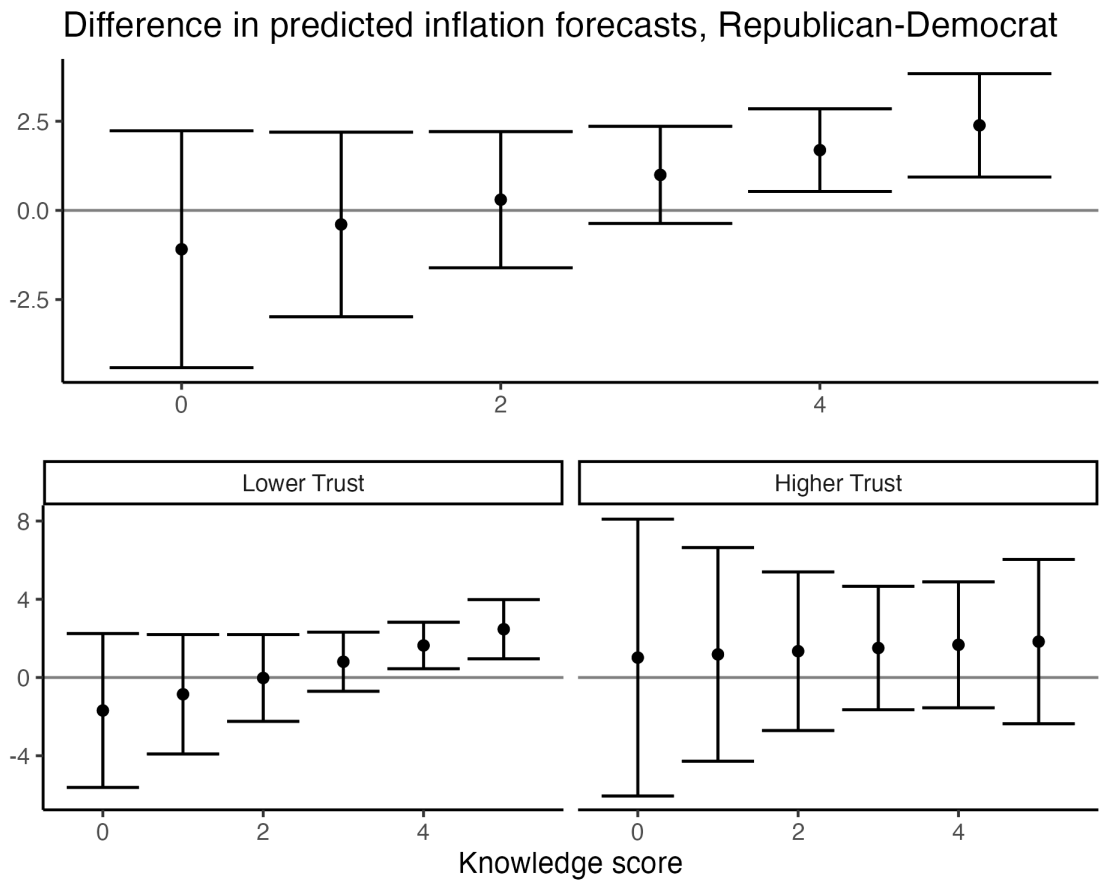

Figure 5: Differences in predicted inflation forecasts (Republican - Democrat). Top panel estimates difference in predicted inflation forecasts, all else equal, for a Republican minus the predicted inflation forecast for a Democrat at different levels of political knowledge score, where predictions are generated using the model shown in column (6) of table 3. Bottom panel shows shows predicted inflation forecasts across party status and political knowledge for low-trust (left) and high-trust (right) respondents who are otherwise identical, using the results shown in column (9) of table 3. 99% error bands calculated using the delta method.

levels of political knowledge. High-trust Republican and Democrat forecasts are statistically indistinguishable (at the 99% level) at all levels of political knowledge, but low-trust, high-knowledge Republicans predict consistently higher inflation than low-trust, high-knowledge Democrats, *conditional on their perceptions about recent inflation.*

Discussion The signal-extraction model in equation (6) implies a null hypothesis that is rejected in our sample. After conditioning on respondents' beliefs about current rates of inflation and its long-run tendency, we find that a particular set of variables relating to

political attitudes and expressed trust are significantly associated with differences in near-term forecasts of inflation. The fact that this holds even conditional on reported beliefs about recent inflation and its long-term tendency is a challenge for some explanations. For example, if Republicans and Democrats shop at different stores, we would expect that to be reflected in their assessments of recent inflation.[6]

The nature of our rejection of the null hypothesis that $\boldsymbol{\gamma}' = 0$ is informative. We find that not only does partisan identification matter, but it is a particular group of partisans – those who have relatively higher levels of political knowledge, and express the least (generalized) trust – that differentially respond to the forecast question, over and above what would be predicted by the simple theory. High trust partisans, by contrast, give virtually indistinguishable forecasts at any given level of political knowledge, and low-trust, low-knowledge partisans do not express detectable differences in opinion.

What to make of this divide? Our interpretation is that survey respondents are engaging in a form of motivated reasoning. Kunda (1990) reviews the psychological literature on motivated reasoning and distinguishes between motives for accuracy and "directional" reasoning (cognitive processes mediated by the desire to arrive at a particular conclusion). Kunda argues that motivated reasoning is not arbitrary endorsement of conclusions, but rather particular conclusions that can be rationalized. A sizeable literature in political psychology has found evidence of motivated reasoning in the interpretation of factual information. Kahan et al. (2017) find in a lab experiment that more numerate individuals are more likely interpret data in a way that is consistent with their partisan outlook (at the expense of accuracy). Prior et al. (2015) find in a survey experiment that accuracy incentives and appeals reduce partisan differences in reported economic conditions. In the context of studying partisan patterns of conspiracy theory endorsement, Miller et al. (2016) argue that endorsement of political misinformation is driven by three factors: (1) having the ability to attach the a

[6]Of course, it is possible that our simple canonical model is incorrect about the time series process for inflation or how agents form beliefs. This is still interesting because some version of this model is a widely-used alternative to full-information rational expectations.

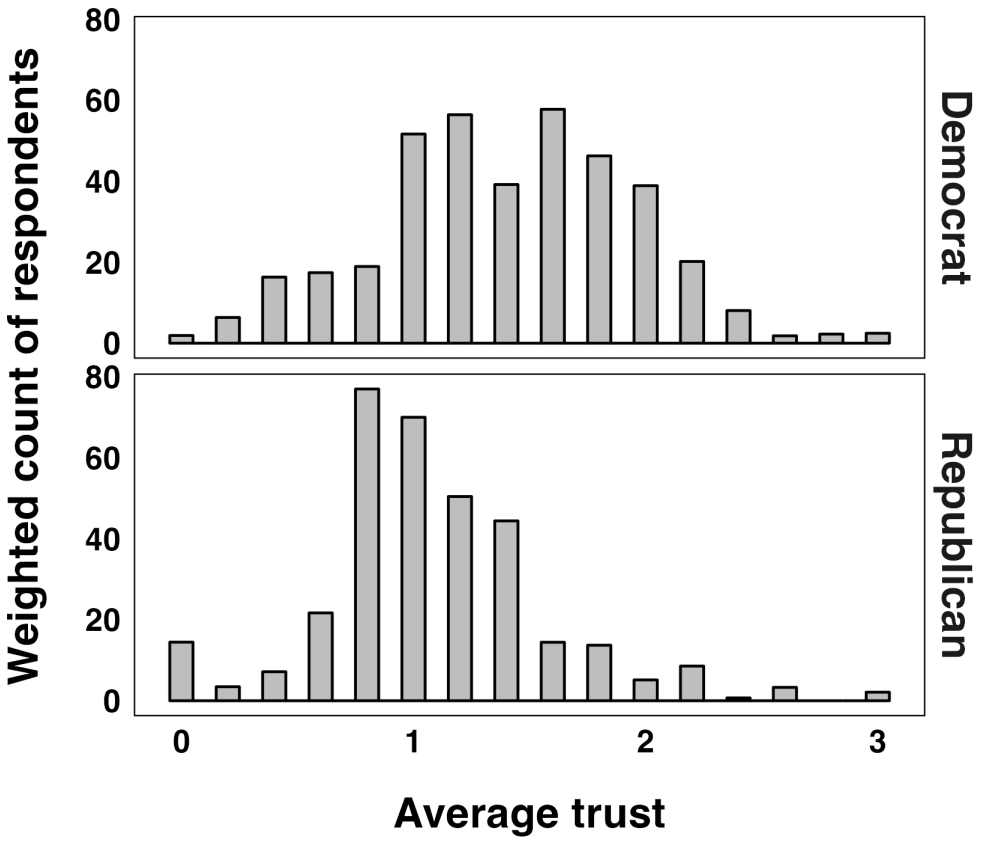

Figure 6: Histogram of respondents' average trust score by party lean. Counts are weighted using survey weights.

theory to a particular identity (e.g., a partisan ideology) (2) have a motive to protect that worldview and the ability to see how endorsing a conspiracy serves that purpose and (3) believe that the world is the type of place in which actual conspiracies are not just possible, but likely. Although inflation forecasting is obviously distinct from the conspiracy theories directly studied in Miller et al. (2016), we see a similar dynamic at play. Partisans who understand *how* responding to the survey serves a partisan end (and have less generalized trust) appear to use forecasts as an endorsement, or non-endorsement, of the party in power.

The fact that the generalized measure of trust influences the effects of knowledge on forecast responses points to our "expressive beliefs" explanation. If it were simply a measure of "more or less informed," we would not expect generalized trust to matter at all.

An additional piece of suggestive evidence supporting our interpretation comes from our

question regarding the efficacy of Federal Reserve policy. The survey took place in the middle of a series of Federal Reserve target interest rate increases (in response to heightened inflation). We asked "The Federal Reserve raised its interest rate target by 2.25 percentage points between March and August of 2022. Do you think those decisions will raise inflation, lower inflation, or have no effect on inflation overall?" Responses to this question were mixed, and display essentially no relationship to partisanship. We estimate linear probability models and probit regressions where the dependent variable takes on the value of 1 when the respondent indicates that raising interest rates will *worsen* inflation.[7] The resulting estimates are shown in table 4. High trust Republicans are significantly less likely to say that increasing the Fed Funds target will cause inflation to go up than low trust republicans, but as the marginal effects displayed in 7 show, Democrats and Republicans do not have statistically detectable differences in their responses regardless of their level of knowledge, conditional on being high- or low-trust.[8]

We argue these results are consistent with an endorsement interpretation of inflation forecasts. Monetary policy decisions are, by design, less easily associated with the party in power because of the political independence of the Federal Open Market Committee, so we would expect less of an "endorsement" motive of their actions (or efficacy) by partisans. Second, the question is more complicated and trying to identify the partisanship-consistent response is more difficult than reporting an inflation forecast. Hence, we might expect that agents are less strategic in answering this question, and are more likely to express something like their true beliefs. Moreover, the regression reveals at least somewhat internally consistent beliefs; forecasting higher inflation and belief that the long-run inflation target is relatively higher are both associated with a higher probability of thinking rate hikes increase inflation.

It is possible to rationalize this type of expressive forecast disagreement through a game-

[7]We group "will lower" and "will have no effect" responses in part because the counterfactual respondents might have in mind is not clear; while mainstream macroeconomic theory suggests that raising the Fed Funds target should decrease inflation *all else equal* it is possible respondents might have thought that interest rate hikes would not be sufficient or that inflation would rise for other reasons.

[8]These results are robust to removing the inflation beliefs from the set of conditioning variables.

Table 4: Beliefs that increasing interest rates would worsen inflation and their association with beliefs about inflation, ideological characteristics, and political knowledge.

	(1)	(2)	(3)	(4)
Inflation belief error	−0.029***	−0.018	−0.019*	−0.061***
	(0.009)	(0.011)	(0.011)	(0.020)
Inflation forecast	0.029***	0.018*	0.019*	0.058***
	(0.009)	(0.011)	(0.011)	(0.019)
Belief about long-run inflation target	0.023***	0.024***	0.023***	0.073***
	(0.007)	(0.008)	(0.009)	(0.018)
Ideology		0.009	0.012	0.043
		(0.028)	(0.028)	(0.064)
Republican		0.036	0.186	0.521
		(0.158)	(0.182)	(0.399)
Independent		−0.327*	−0.271	−0.909
		(0.167)	(0.183)	(0.565)
Not sure party		−0.629	−0.570	−5.557
		(0.745)	(0.734)	(201.365)
$\mathbb{I}$(High trust)		−0.072	0.196	0.566
		(0.057)	(0.213)	(0.555)
Registered voter		0.138	0.136	0.447***
		(0.092)	(0.095)	(0.169)
Consumed media in past 24 hours		0.128	0.118	0.455
		(0.092)	(0.092)	(0.316)
Pays attention		−0.056*	−0.052*	−0.145**
		(0.030)	(0.030)	(0.064)
Correct partisan order		0.037	0.010	−0.020
		(0.112)	(0.123)	(0.236)
Political knowledge (0-5)		−0.016	−0.005	−0.021
		(0.031)	(0.034)	(0.070)
Republican × Political knowledge		0.020	−0.009	−0.015
		(0.037)	(0.043)	(0.096)
Independent × Political knowledge		0.067	0.060	0.203
		(0.044)	(0.049)	(0.138)
Not sure party × Political knowledge		0.354	0.347	4.972
		(0.295)	(0.291)	(120.947)
Republican ×$\mathbb{I}$(High trust)			−0.667*	−2.109**
			(0.376)	(0.947)
Independent ×$\mathbb{I}$(High trust)			−0.218	−0.208
			(0.482)	(1.659)
Political knowledge ×$\mathbb{I}$(High trust)			−0.049	−0.149
			(0.048)	(0.135)
Republican × Knowledge Score ×$\mathbb{I}$(High trust)			0.115	0.370
			(0.083)	(0.267)
Independent × Knowledge Score ×$\mathbb{I}$(High trust)			0.017	−0.145
			(0.111)	(0.452)
Constant	0.024	0.040	0.011	−1.583**
	(0.077)	(0.254)	(0.272)	(0.625)
N	911	826	826	826
R2	0.08	0.20	0.21	
R2 Adj.	0.08	0.17	0.18	
Demographic and Economic controls	No	Yes	Yes	Yes

* p < 0.1, ** p < 0.05, *** p < 0.01

Note:
Model estimates from linear probability model (cols 1-3) and probit (column 4). Dependent variable is whether respondent indicated that the Fed's policy of increasing interest rates was likely to raise inflation (versus keep it the same or lower it).

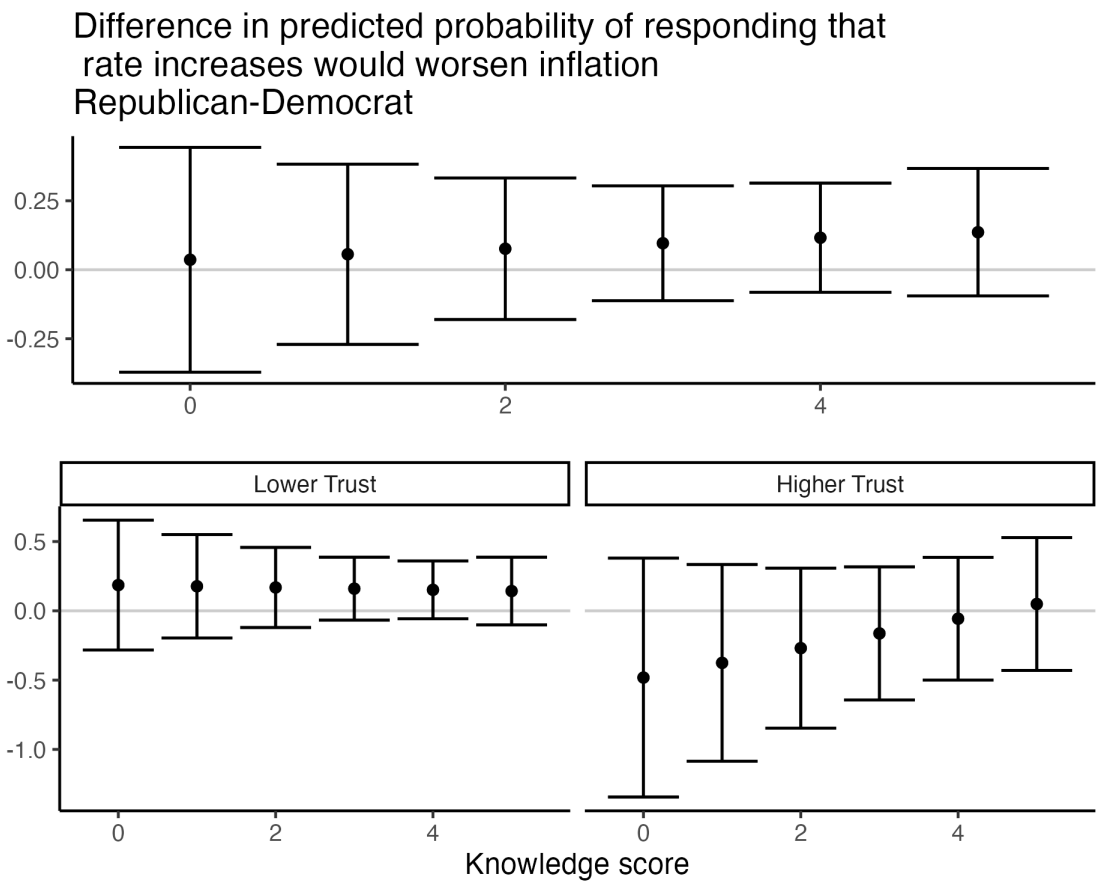

Figure 7: Differences (Republican-Democrat) in predicted probability of respondent saying that Federal Reserve interest rate increases would increase inflation. Top panel estimates predicted probability for a Republican minus an otherwise identical Democrat at different levels of political knowledge score, where predictions are generated using the model shown in column (2) of table 4. Bottom panels show differences in predicted probability that interest rate increases would increase inflation for low-trust (left) and high-trust (right) respondents who are otherwise identical, using the model shown in column (3) of table 4. 99% error bands calculated using the delta method.

theoretic lens. Appendix C constructs a simple two-person non-cooperative game where agents receive common and idiosyncratic signals and choose an action that minimizes a quadratic loss function with two elements: accuracy relative to a fundamental (e.g., having an objectively accurate forecast) and the distance from the action of the other player (e.g., distinguishing oneself from an opposed partisan). Agents' best response functions depend on the quality of signals and both players' preferences for or against coordination. An increase in desired coordination (or less loss from coordination) will tend to increase weight on common signals in the best response function – in other words, inflation forecasts will be closer to what everybody knows. On the other hand, if agents desire to not coordinate (or if the weight on coordination is positive, but small enough), an increase in the quality of their idiosyncratic signal will lead to a forecast closer to their idiosyncratic signal and greater survey disagreement between types in equilibrium. Agents may provide something different from their "true" (MSE-minimizing) forecast if they have partisan motives, regardless of the precision of their information. In other words, the partisan divide could be partially attributable to strategic behavior. This does not rule out, for example, that survey responses at least partially reflect "actual" forecasts that impact economic behavior.

Relationship to polarization of consumption Kamdar and Ray (2023) document a number of important facts about party identity, its relationship to economic sentiment, and how sentiment and consumption of partisans are affected by political events. We view our results as complimentary to the facts documented in that paper. Our results suggest partisan identity to is an important driver of expressed survey beliefs about inflation in particular. In particular, Kamdar and Ray show using rolling regressions of higher-frequency data that partisans' inflation expectations tend to respond differentially to elections and CPI releases. This is consistent with our finding that Republicans and Democrats have differential expectations of inflation. However, we also are able to show that this is *not* explained by differences in perceptions of recent inflation or its long-run tendency. This confirms Kamdar

and Ray's conclusion that existing models of expectation formation are hard to reconcile with the relationship between political identity and expectations. Where we go further is to show that the facts are consistent with the political science literature on motivated reasoning. That literature and the model presented in appendix B, further suggest that what Kamdar and Ray (2023) refer to as a "cheerleading" motive can co-exist with motives for accuracy and may help explain the conflicting evidence on the effects of partisan sentiment on consumption behavior.

6 Conclusions

We survey a nationally representative sample of adults about their beliefs about past and future inflation, as well as their social and political views. Although our sample is a single cross-section, the forecasts are broadly consistent with other panel surveys of household expectations. We show that party lean predicts respondents' inflation forecasts, conditional on a number of demographic characteristics and their beliefs about recent inflation and its long-run tendency. The influence of partisan identity, over and above the information encoded in their "nowcasts" is difficult to reconcile either with canonical full information rational expectations models and common alternatives such as Bayesian learning and diagnostic expectations. When we investigate the partisan divide, we find that it is driven by respondents who are knowledgeable about politics, and express low generalized trust in others. To be clear, our argument is not that household surveys of inflation (or economic sentiment generally) are not useful for understanding the state of the economy. Rather, our claim is that the apparently-widening partisan divide in economic assessments of the economy is likely to be driven, in part, by strategic responses to surveys, combined with behavioral motives that encourage respondents to offer responses that are colored by their partisan priors. This finding is consistent with the broader psychological literature on the intersection of partisan identity and directed motivated reasoning.

Our results suggest that the partisan divide documented in the Gallup panel and Michigan surveys (Brady et al. (2022); Mian et al. (2023); Binder (2023); Curtain (2018); Kamdar and Ray (2023)) may possibly reflect broader social trends in American politics – particularly, a decline in expressed trust. On the one hand, this result presents a challenge for economists and policymakers attempting to interpret household surveys, because responses are a combination of "true" forecasts and expressive beliefs, with uncertain relative weights. On the other hand, this may imply that partisans' (true) beliefs are actually more similar than survey results imply. This may help explain the mixed results of studies linking election outcomes to spending behavior, the the apparent growing role of partisanship-driven sentiment (Kamdar and Ray (2023)) and the possible disconnect between recent measures of sentiment and the actual state of the economy (Stewart (2023)).

Our survey focused on the interaction of partisanship and trust during a time of particularly high inflation. It would be interesting to understand whether inflation forecast in surveys become less expressive if (and when) it becomes a less salient political concern. Future research could also examine the extent to which survey questions or incentives can be modified to elicit "true" forecasts, or if panel forecasts can be combined with likelihood based methods to extract the actual forecast component of responses.

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A Survey questions

A.1 Questions about inflation and Federal Reserve policy

Our main questions about inflation were presented as part of a module of the CES survey as described in the text. The first three questions were presented on a single screen:

> Now we have a set of questions concerning current economic conditions.
> What do you think inflation was over the last year, i.e. the annual change in the Consumer Price Index (CPI)?
> What do you think the inflation rate will be over the next 12 months?
> What annual inflation rate do you think the Federal Reserve is trying to achieve on average?
>
> 0.0% to 0.4%
> 0.5% to 0.9%
> 1.0% to 1.4%
> 1.5% to 1.9%
> 2.0% to 2.4%
> 2.5% to 3.4%
> 3.5% to 4.4%
> 4.5% to 5.4%
> 5.5% to 6.4%
> 6.5% to 7.4%
> 7.5% to 8.4%
> 8.5% to 10.4%
> 10.5% to 15.4%
> More than 15.5%

Then, on a new screen, survey participants were given the following question and choices for response:

> The Federal Reserve raised its interest rate target by 2.25 percentage points between March and August of 2022. Do you think those decisions will raise inflation, lower inflation, or have no effect on inflation overall?
>
> Raise inflation
>
> Lower inflation
>
> Have no effect on inflation

A.2 Other questions from the Cooperative Election Survey

Questions about trust Our trust measure also comes from our module of the CES survey. On a single screen participants were given the following prompt:

> How much of the time can you trust the following groups to do what is right?

And in a table, asked to select a cell for each of the following rows and columns:

	Almost always	Most of the time	Some of the time	Almost never
The federal government in Washington				
Law enforcement				
The media				
People in general				
Scientists				

To convert this to a numerical value, we assign a score of "3" to "Almost always" and decrease the score by 1 for subsequently lower responses. "High trust" individuals were those that had an average score of 2 or above across the set of five questions.

General module questions: Demographic and political beliefs We make the following adjustments and transformations to demographic, financial, and political variables:

- Due to sample size issues, we drop respondents who list a gender identity other than "man" or "woman."
- Age is calculated as 2022 minus birth year.
- Race responses were consolidated to an indicator variable for "White", and a separate indicator variable for "Hispanic." Respondents were able to either list "Hispanic" as their race or separately, and the indicator for Hispanic takes on a value of one if they did either.
- Political party identify is based on stated party lean, rather than party registration.

- "Ideology" was on a 5-point scale. We set "Very conservative" to 1 and "Very liberal" to 5.

- "Pays attention" is based on the following question:

  > Some people seem to follow what's going on in government and public affairs most of the time, whether there's an election going on or not. Others aren't that interested. Would you say you follow what's going on in government and public affairs...

  Responses were on a 4-point scale from "Hardly at all" (assigned 0) to "Most of the time" (assigned 3). Responses of "don't know" were assigned missing.

- "Political knowledge" was the total correct answers to five multiple-choice questions. These questions asked the name of the current Chief Justice of the Supreme Court, Speaker of the House, and Secretary of State, and whose responsibility it was to nominate judges to Federal courts, and what government body was responsible for determining if a law was constitutional.

- "Correct partisan order" is based on a question asking how the respondent would rate a set of individuals and group on a 7-point scale from "very liberal" to "very conservative." "Correct Partisan order" is coded as 1 if the respondent rated the Democratic Party as being *at least as* liberal as the Republican party.

- Self-indicated employment status was classified to "employed," "unemployed," and "out of the labor force."

A.3 Raw results and cross-tabulations

B Robustness: Dropping ideology

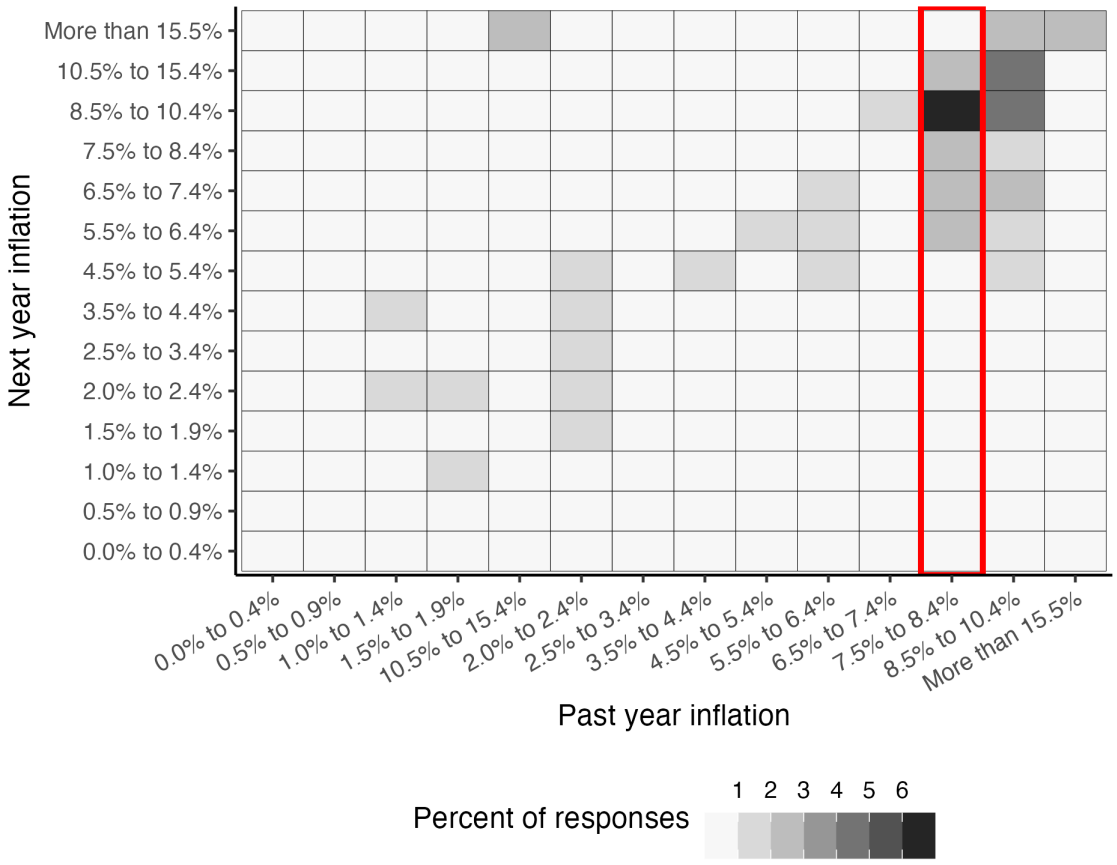

Figure 8: Weighted percentage of responses to question about expected inflation over the next twelve months (vertical axis) and perceived inflation over the past twelve months (horizontal). Correct bin for past inflation highlighted in red.

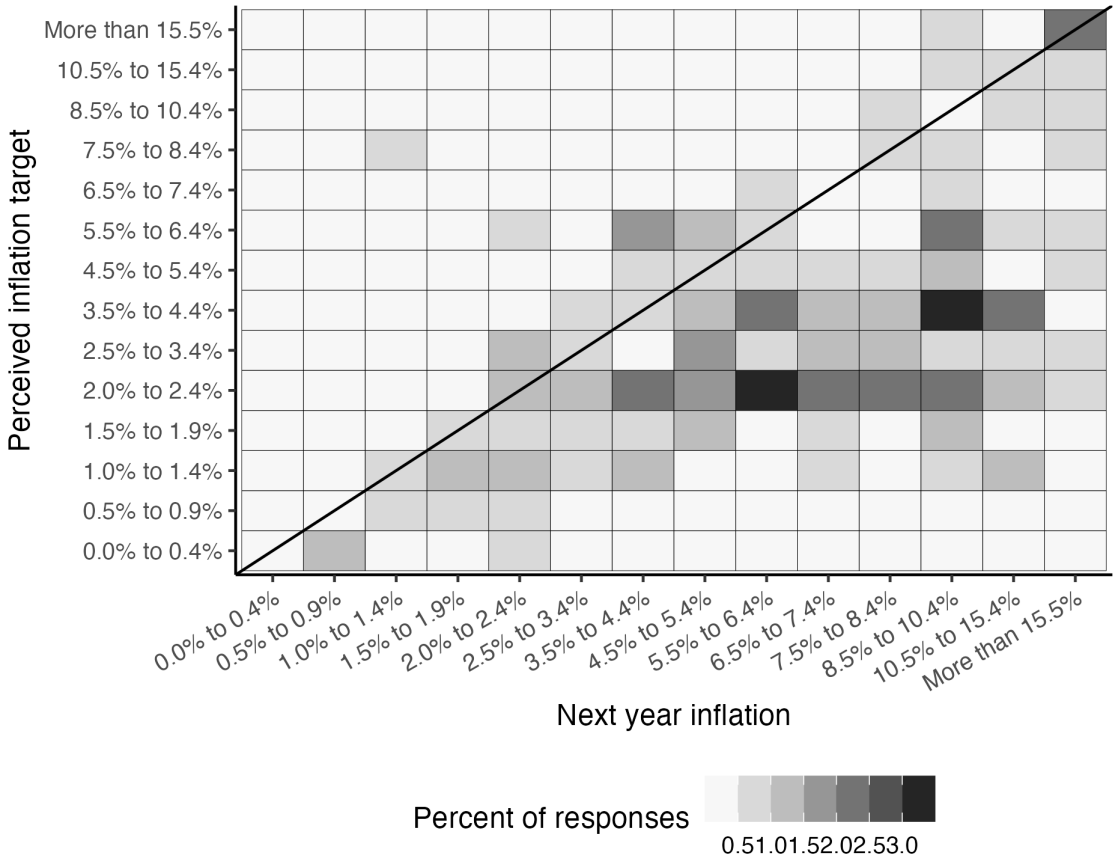

Figure 9: Weighted percentage of responses to question about expected inflation over the next twelve months (horizontal axis) and Federal Reserve's perceived inflation target (horizontal axis). Bins along 45 degree line indicate same response to both questions; bins to the right of the 45 degree line are responses where next year's inflation exceeds perceived target.

Table 5: Demographic, economic, and partisan composition of survey sample

Variable		Percent
Male	FALSE	52.0
	TRUE	48.0
White	FALSE	28.4
	TRUE	71.6
Hispanic	FALSE	87.7
	TRUE	12.3
Education	No HS	6.3
	HS grad	29.0
	Some college	28.7
	Bachelor	23.2
	Post-grad	12.8
Household income	Below 40k	36.7
	40-80k	30.1
	80-120k	23.5
	Above 120k	9.7
No way to pay for 400 dollar emergency	FALSE	79.8
	TRUE	20.2
Has child under 18	FALSE	76.1
	TRUE	23.4
Homeowner	FALSE	40.8
	TRUE	59.2
Media use in past 24 hrs	FALSE	4.8
	TRUE	95.2
Reg. Voter	FALSE	21.5
	TRUE	78.5
Party lean	Democrat	44.0
	Republican	38.4
	Independent	15.2
	Not sure/DK	2.4

Note:
'Hispanic includes survey respondents of any race that indicated they were Hispanic. "No way to pay for 400 dollar emergency" is False for individuals who indicate they either had enough financial resources or could obtain them by selling posessions or borrowing. Party lean categories include those who indicated any lean to a particular party.

Table 6: Responses to questions about political knowledge, attention, and trust in others

Variable	Range	Mean	Median	SD	IQR
Political knowledge score	[0, 5]	3.8	4.0	1.4	[3, 5]
Attention to politics	[0, 3]	2.2	2.0	1.0	[2, 3]
Ideology	[1, 5]	3.1	3.0	1.2	[2, 4]
Avg. Trust	[0, 3]	1.3	1.2	0.5	[1, 1.6]

Note:
'Political knowledge score' indicates number of correct answers to a set of five factual questions about politics and government. 'Media use in past 24 hrs' takes on a value of 1 if respondent indicated they had used social media, watched TV news, read a newspaper, or listened to radio news. 'Attention to politics' is self-assessed frequency of how often respondent follows government and public affairs. 'Ideology' is on a 1-5 point scale where 1 indicates "Very conservative" and 5 indicates "Very liberal." 'Avg. Trust' is the average of response to questions about how often different groups or institutions can be trusted, as described in appendix A.2. Qualitative answers are converted to numerical on a 4 point scale, with 0 indicating 'Almost never' to 3 for 'Almost always.'

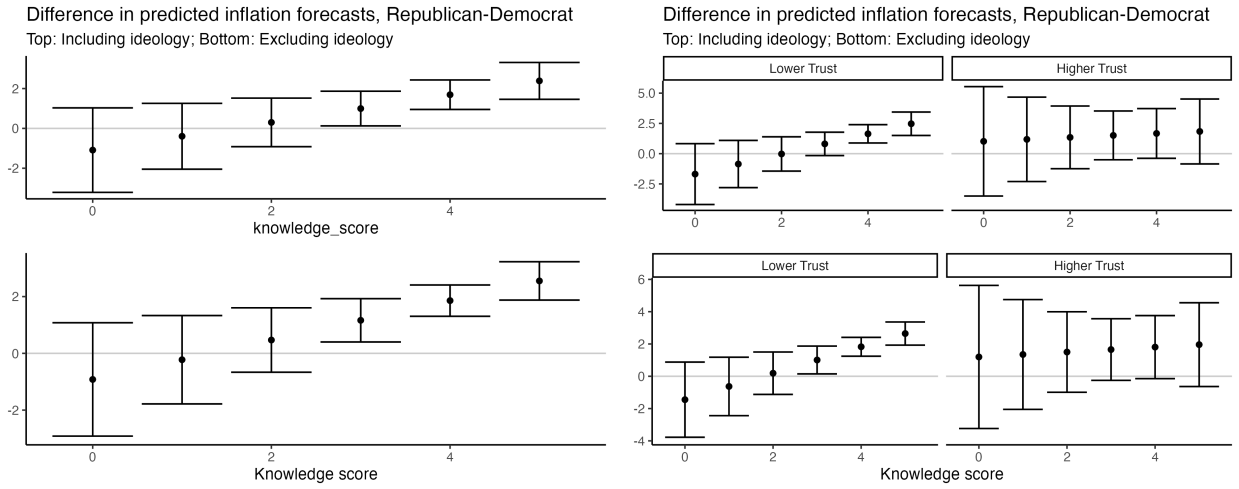

Figure 10: Differences in predicted inflation forecasts.Left two panels show predicted differences generated using columns 1 and 2 of table 9; top left panel shows marginal effects from model (1) in the table (including ideology) and bottom left shows marginal effects excluding ideology. Right panel compares marginal effects of increasing knowledge for high and low trust partisans based on columns (3) (top) and (4) (bottom) of table 9. 99% error bands intervals calculated using the delta method.

Table 7: Partisan lean and beliefs about inflation and monetary policy.

Perceived past inflation	Democrat	Republican	Independent	Not sure/DK
0.0% to 0.4%	0.6	1.2	1.0	0.3
0.5% to 0.9%	1.4	0.7	0.4	0.0
1.0% to 1.4%	2.6	0.5	0.3	0.0
1.5% to 1.9%	2.9	1.4	1.1	0.3
2.0% to 2.4%	4.5	3.2	1.3	0.3
2.5% to 3.4%	2.3	1.4	0.5	0.2
3.5% to 4.4%	3.0	1.1	0.7	0.1
4.5% to 5.4%	2.6	1.7	0.5	0.4
5.5% to 6.4%	5.1	1.4	0.7	0.7
6.5% to 7.4%	2.9	1.9	0.7	0.0
7.5% to 8.4%	6.4	9.2	3.0	0.0
8.5% to 10.4%	8.2	8.5	3.1	0.2
10.5% to 15.4%	0.7	3.9	0.8	0.0
More than 15.5%	0.8	2.3	1.1	0.0

Forecast inflation	Democrat	Republican	Independent	Not sure/DK
0.0% to 0.4%	0.5	0.5	0.0	0.2
0.5% to 0.9%	1.3	0.1	0.6	0.4
1.0% to 1.4%	2.4	0.7	0.9	0.0
1.5% to 1.9%	2.7	0.7	0.4	0.0
2.0% to 2.4%	3.8	1.9	0.9	0.8
2.5% to 3.4%	3.1	1.0	1.1	0.2
3.5% to 4.4%	5.0	2.4	1.0	0.0
4.5% to 5.4%	5.6	2.3	1.1	0.4
5.5% to 6.4%	4.5	3.3	1.7	0.0
6.5% to 7.4%	5.4	2.4	0.8	0.1
7.5% to 8.4%	3.6	3.5	0.7	0.0
8.5% to 10.4%	3.4	8.5	2.2	0.2
10.5% to 15.4%	1.2	5.6	2.5	0.1
More than 15.5%	1.5	5.4	1.3	0.2

Perceived inflation target	Democrat	Republican	Independent	Not sure/DK
0.0% to 0.4%	2.6	0.3	0.9	0.4
0.5% to 0.9%	1.1	2.1	0.8	0.0
1.0% to 1.4%	4.5	3.5	1.2	0.1
1.5% to 1.9%	4.8	2.8	1.3	0.0
2.0% to 2.4%	8.4	6.9	3.0	0.6
2.5% to 3.4%	5.0	4.1	0.6	0.0
3.5% to 4.4%	5.8	5.1	2.4	0.1
4.5% to 5.4%	3.1	2.9	1.4	0.3
5.5% to 6.4%	3.5	3.3	1.5	0.3
6.5% to 7.4%	1.6	1.1	0.3	0.0
7.5% to 8.4%	1.1	1.4	0.4	0.2
8.5% to 10.4%	0.6	2.2	0.4	0.0
10.5% to 15.4%	1.0	1.3	0.1	0.2
More than 15.5%	0.7	1.5	1.0	0.2

Effect of interest rate increases	Democrat	Republican	Independent	Not sure/DK
Raise inflation	14.7	18.2	5.9	1.3
Lower inflation	15.5	8.5	3.1	0.4
Have no effect on inflation	13.8	11.7	6.2	0.7

Party identification	Ideology score 1	2	3	4	5
Not sure	0.0	0.1	0.6	0.0	0.0
Strong Republican	9.7	8.7	2.9	0.1	0.3
Not very strong Republican	0.3	4.5	2.8	0.1	0.0
Lean Republican	1.5	6.3	4.0	0.0	0.0
Independent	0.3	0.9	8.3	1.3	1.1
Lean Democrat	0.0	0.7	4.8	3.5	1.5
Not very strong Democrat	0.0	1.2	4.6	3.5	1.8
Strong Democrat	0.1	1.1	4.4	9.5	9.5

Party lean	Ideology score 1	2	3	4	5
Not sure/DK	0.0	0.1	0.6	0.0	0.0
Independent	0.3	0.9	8.3	1.3	1.1
Republican	11.4	19.5	9.8	0.2	0.3
Democrat	0.1	3.1	13.8	16.4	12.8

Table 8: Party identification and self-rated ideology score. Each cell shows the (weighted) fraction with a given party identification or lean (rows) and ideology score (columns). Top panel shows disaggregated party identification, while bottom table shows party identification where respondents identifying to any degree with a party as members of that party. Ideology is on a 5 point scale, with 1 for "Very conservative" to 5 for "Very liberal."

Table 9: Cross-sectional forecasting regressions and political attitudes

	(1)	(2)	(3)	(4)
Past inflation	0.603***	0.599***	0.604***	0.599***
	(0.053)	(0.050)	(0.053)	(0.050)
Belief about long-run inflation target	0.321***	0.345***	0.323***	0.345***
	(0.048)	(0.047)	(0.049)	(0.048)
Ideology	−0.102		−0.110	
	(0.171)		(0.174)	
Republican	−1.090	−0.919	−1.687	−1.449
	(1.289)	(1.214)	(1.527)	(1.415)
Independent	−0.698	−0.873	−1.004	−1.172
	(1.302)	(1.167)	(1.473)	(1.280)
Not sure party	−0.205	−2.075	−0.476	−2.307
	(11.326)	(3.507)	(11.371)	(3.571)
$\mathbb{I}$(High trust)	−0.074	−0.155	−0.706	−0.666
	(0.353)	(0.345)	(1.531)	(1.514)
Registered voter	−0.022	−0.037	−0.109	−0.113
	(0.587)	(0.489)	(0.596)	(0.495)
Consumed media in past 24 hours	−0.454	−0.444	−0.393	−0.362
	(0.617)	(0.580)	(0.645)	(0.606)
Pays attention	0.329*	0.303*	0.322	0.293
	(0.196)	(0.176)	(0.203)	(0.181)
Correct partisan order	−0.510	−0.211	−0.400	−0.111
	(0.737)	(0.640)	(0.717)	(0.627)
Knowledge Score (0-5)	−0.249	−0.195	−0.294	−0.233
	(0.257)	(0.233)	(0.294)	(0.264)
Republican × Knowledge Score	0.695**	0.694**	0.831**	0.819**
	(0.310)	(0.282)	(0.364)	(0.327)
Independent × Knowledge Score	0.430	0.557*	0.563	0.683**
	(0.338)	(0.294)	(0.379)	(0.322)
Not sure party × Knowledge Score	−0.210	0.392	−0.162	0.449
	(4.283)	(1.300)	(4.294)	(1.313)
Republican ×$\mathbb{I}$(High trust)			2.706	2.645
			(3.197)	(3.088)
Independent ×$\mathbb{I}$(High trust)			1.195	1.714
			(2.324)	(1.775)
Knowledge Score ×$\mathbb{I}$(High trust)			0.188	0.162
			(0.360)	(0.354)
Republican × Knowledge Score ×$\mathbb{I}$(High trust)			−0.668	−0.666
			(0.818)	(0.799)
Independent × Knowledge Score ×$\mathbb{I}$(High trust)			−0.873	−1.015**
			(0.549)	(0.449)
Constant	2.336	2.056*	2.285	1.929
	(1.610)	(1.185)	(1.640)	(1.202)
N	826	882	826	882
R2	0.58	0.59	0.58	0.60
Demographic and Economic controls	Yes	Yes	Yes	Yes
R2 Adj.	0.56	0.58	0.56	0.58

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note:

Heteroskedasticity-robust standard errors shown in parentheses. Columns (1) and (3) are identical to columns (6) and (9) of table 3. Columns (2) and (4) drop ideology as a separate control.

C A simple game-theoretic model of survey disagreement

This section contains a 2-player noncooperative game-theoretic model that rationalizes incorrect survey responses based on partisan identity. In particular, it is a 2-person version of the general static network model elucidated in section VI of Huo and Pedroni (2020) and the exposition and solution technique follow almost directly from their paper.

Model setup Suppose there are two agents, R and D. Each has a common prior about an underlying state of the world, π. Agent i takes an action $\pi_i, i \in \{R, D\}$. Their payoff for the action is related to both the quadratic distance of their action from the true state, and the distance of their action from the other player. Their ex-post loss function is (following Morris and Shin (2002)) are

$$U_R(\pi_R; \pi_D, \pi) = -(1-\alpha)(\pi_R - \pi)^2 - \alpha(\pi_R - \pi_D)^2 \tag{8}$$

Similarly:

$$U_D(\pi_R; \pi_D, \pi) = -(1-\beta)(\pi_D - \pi)^2 - \beta(\pi_D - \pi_R)^2 \tag{9}$$

These loss functions reflect their (possibly competing) motives. For concreteness, suppose the actions players take is answering a survey about their forecast for inflation. They want to give the "correct" answer, but also potentially want to give answers close to (or far from) the answers of the other agent.

We allow the two types to potentially place different weights on strategic motives – i.e., type D players may care relatively more or less about accurately stating their beliefs than type R players. We restrict α and β to be smaller than 1 in absolute value.

We suppose that each agent observes a common (public) signal $\widetilde{\pi} = \pi + \varepsilon$ and an idiosyncratic (private) signal $p_i = \pi + \eta_i$. Each signal (and the fundamental) are zero mean and Gaussian. The fundamental has precision τ_π, the noise on the public signal has precision

τ_ε and the private signal has precision $\gamma_i\tau_\eta$ (where signal precision potentially differs across agent types). Collect the random variables in a vector $\boldsymbol{\varepsilon_i}' = \begin{bmatrix} \pi & \varepsilon & \eta_i \end{bmatrix}$

The loss minimization problem associated with equations (8) and (9) yields best response functions

$$\pi_R = (1-\alpha)E_R(\pi) + \alpha E_R(\pi_D)$$

$$\pi_D = (1-\beta)E_D(\pi) + \beta E_D(\pi_R)$$

We collect these best response functions in the following matrix equation:

$$\begin{bmatrix} \pi_R \\ \pi_D \end{bmatrix} = \begin{bmatrix} 1-\alpha E_R(\pi) \\ 1-\beta E_D(\pi) \end{bmatrix} + \underbrace{\begin{bmatrix} 0 & \alpha \\ \beta & 0 \end{bmatrix}}_{\mathbf{W}} \begin{bmatrix} E_D\pi_R \\ E_R\pi_D \end{bmatrix} \tag{10}$$

where the conditional expectation based on the signals observed by R-type agents E_R (analogous for D-type).

Agent i's signals, in matrix form, are

$$\mathbf{x_i} = \boldsymbol{M_i\varepsilon_i} = \underbrace{\begin{bmatrix} 1 & 1 & 0 \\ 1 & 0 & 1 \end{bmatrix}}_{\mathbf{M}} \underbrace{\begin{bmatrix} \tau_\pi^{-1/2} & 0 & 0 \\ 0 & \tau_\varepsilon^{-1/2} & 0 \\ 0 & 0 & (\gamma_R\tau_\eta))^{-1/2} \end{bmatrix}}_{\boldsymbol{\Sigma_i}} \begin{bmatrix} \pi \\ \varepsilon \\ \eta_i \end{bmatrix}$$

Now, define

$$\phi_R' = \begin{bmatrix} 1-\alpha & 0 \end{bmatrix}$$

$$\phi_D' = \begin{bmatrix} 1-\beta & 0 \end{bmatrix}$$

We look for an equilibrium where actions are a linear combination of the agents' signals, as in Morris and Shin (2002). That is, we try to solve for the vectors $\mathbf{h_i}$ such that $\pi_i = \mathbf{h_i x_i} = \mathbf{h_i M}_i\boldsymbol{\varepsilon_i}$

Define the matrix

$$\mathbf{\Lambda} = \begin{bmatrix} I_2 \\ 0 \quad 0 \end{bmatrix}$$

which selects the elements of $\varepsilon_{\mathbf{i}}$ common to both agents.

By the projection theorem for conditional normal variables, R's conditional expectation of D's *fundamental* ($\beta\pi$) is

$$E_R(\beta\pi|\mathbf{x_R}) = \boldsymbol{\phi}_{\boldsymbol{D}}'\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{R}}'(\boldsymbol{M}_{\boldsymbol{R}}\boldsymbol{M}_{\boldsymbol{R}}')^{-1}\mathbf{x_R}$$

and her forecast of D's *action* is (since she has no information about the private signal of D):

$$E_R(\pi_D|\mathbf{x_R}) = \boldsymbol{h}_{\boldsymbol{d}}'\boldsymbol{M}_{\boldsymbol{D}}\mathbf{\Lambda}\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{R}}'(\boldsymbol{M}_{\boldsymbol{R}}\boldsymbol{M}_{\boldsymbol{R}}')^{-1}\mathbf{x_R}$$

Analogous expressions for D's belief about $R's$ fundamental and $R's$ action also hold. Substituting these expressions and the proposed solution into (10) yields

$$\begin{bmatrix} \mathbf{h_R'x_R} \\ \mathbf{h_D'x_D} \end{bmatrix} + \begin{bmatrix} \boldsymbol{\phi}_{\boldsymbol{R}}'\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{R}}'(\boldsymbol{M}_{\boldsymbol{R}}\boldsymbol{M}_{\boldsymbol{R}}')^{-1}\mathbf{x_R} \\ \boldsymbol{\phi}_{\boldsymbol{D}}'\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{D}}'(\boldsymbol{M}_{\boldsymbol{D}}\boldsymbol{M}_{\boldsymbol{D}}')^{-1}\mathbf{x_D} \end{bmatrix} + \begin{bmatrix} (1-\alpha)\boldsymbol{h}_{\boldsymbol{D}}'\boldsymbol{M}_{\boldsymbol{D}}\mathbf{\Lambda}\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{R}}'(\boldsymbol{M}_{\boldsymbol{R}}\boldsymbol{M}_{\boldsymbol{R}}')^{-1}\mathbf{x_R} \\ (1-\beta)\boldsymbol{h}_{\boldsymbol{R}}'\boldsymbol{M}_{\boldsymbol{R}}\mathbf{\Lambda}\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{D}}'(\boldsymbol{M}_{\boldsymbol{D}}\boldsymbol{M}_{\boldsymbol{D}}')^{-1}\mathbf{x_D} \end{bmatrix} \tag{11}$$

This must hold for any realization of $\mathbf{x_R}, \mathbf{x_D}$ so:

$$\begin{bmatrix} \mathbf{h_R'} \\ \mathbf{h_D'} \end{bmatrix} = \begin{bmatrix} \boldsymbol{\phi}_{\boldsymbol{R}}'\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{R}}'(\boldsymbol{M}_{\boldsymbol{R}}\boldsymbol{M}_{\boldsymbol{R}}')^{-1} \\ \boldsymbol{\phi}_{\boldsymbol{D}}'\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{D}}'(\boldsymbol{M}_{\boldsymbol{D}}\boldsymbol{M}_{\boldsymbol{D}}')^{-1} \end{bmatrix} + \begin{bmatrix} (1-\alpha)\boldsymbol{h}_{\boldsymbol{D}}'\boldsymbol{M}_{\boldsymbol{D}}\mathbf{\Lambda}\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{R}}'(\boldsymbol{M}_{\boldsymbol{R}}\boldsymbol{M}_{\boldsymbol{R}}')^{-1} \\ (1-\beta)\boldsymbol{h}_{\boldsymbol{R}}'\boldsymbol{M}_{\boldsymbol{R}}\mathbf{\Lambda}\mathbf{\Lambda}'\boldsymbol{M}_{\boldsymbol{D}}'(\boldsymbol{M}_{\boldsymbol{D}}\boldsymbol{M}_{\boldsymbol{D}}')^{-1} \end{bmatrix} \tag{12}$$

Right multiplying this expression by $\begin{bmatrix} \mathbf{M_R M_R'} & \mathbf{0} \\ \mathbf{0} & \mathbf{M_D M_D'} \end{bmatrix}$:

$$\begin{bmatrix} \mathbf{h_R'M_RM_R'} \\ \mathbf{h_D'M_DM_D'} \end{bmatrix} = \begin{bmatrix} \boldsymbol{\phi_R'\Lambda' M_R'} \\ \boldsymbol{\phi_D'\Lambda' M_D'} \end{bmatrix} + \begin{bmatrix} (1-\alpha)\boldsymbol{h_D' M_D \Lambda\Lambda' M_R'} \\ (1-\beta)\boldsymbol{h_R' M_R \Lambda\Lambda' M_D'} \end{bmatrix} \tag{13}$$

Then, transposing each row:

$$\begin{bmatrix} \mathbf{M_R M_R' h_R} \\ \mathbf{M_D M_D' h_D} \end{bmatrix} = \begin{bmatrix} \boldsymbol{M_R \Lambda \phi_R} \\ \boldsymbol{M_D \Lambda \phi_D} \end{bmatrix} + \begin{bmatrix} (1-\alpha)\boldsymbol{M_R \Lambda\Lambda' M_D' h_D} \\ (1-\beta)\boldsymbol{M_D \Lambda\Lambda' M_R' h_R} \end{bmatrix} \tag{14}$$

Define

$$S_R = \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$$

$$S_D = \begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix}$$

$$\bar{\mathbf{M}} = S_R \otimes M_R + S_D \otimes M_D$$

$$\boldsymbol{\Sigma} = S_R \otimes \Sigma_R + S_D \otimes \Sigma_D$$

where $\otimes$ is the Kronecker product of the two matrices.

Then (14) can be written

$$\bar{\mathbf{M}}\bar{\mathbf{M}}'\mathbf{h} = \bar{\mathbf{M}}\left(\mathbf{I} \otimes \boldsymbol{\Lambda}\right)\boldsymbol{\phi} + \bar{\mathbf{M}}(\mathbf{W} \otimes (\boldsymbol{\Lambda\Lambda'})\bar{\mathbf{M}}'\mathbf{h}$$

where $\mathbf{h}$ is a column vector that stacks $\mathbf{h_i}$ and ϕ is a column vector that stacks the $\boldsymbol{\phi_i}$

We can directly solve for $\mathbf{h}$ as

$$\mathbf{h} = \left\{\bar{\mathbf{M}}\left(\mathbf{I} - \mathbf{W} \otimes \boldsymbol{\Lambda\Lambda'}\right)\bar{\mathbf{M}}'\right\}^{-1}\bar{\mathbf{M}}\left(\mathbf{I} \otimes \boldsymbol{\Lambda}\right)\boldsymbol{\phi}$$

The policy functions (which amount to weights on the private and public signals) will in general depend in a complicated way on the precision of agents' signals and the weights of

both agents on accuracy versus coordination (or substitution). This is because the optimal action of R type agents depends on their beliefs about what D type agents will do, which depends on higher-order beliefs – R's belief about D's belief about R's belief, and so on. The Bayesian Nash Equilibrium policy functions reflect the impact of these higher-order beliefs because the weights on each signal depends on the parameters governing *both* agents' loss functions and the precision of public signals and the private signals of *both* agents.

Direct calculation yields

$$\begin{aligned}\mathbf{h}'_{\mathbf{R}}\mathbf{x}_{\mathbf{R}} =& \frac{\sqrt{\tau_\pi}\tau_\varepsilon\left(\tau_\pi+\tau_\varepsilon+\tau_\eta(\gamma_D+\alpha\gamma_R)\right)}{(1-\alpha\beta)(\gamma_R\gamma_D\tau_\eta^2)+(\tau_\pi+\tau_\varepsilon)^2+\tau_\eta(\gamma_R+\gamma_D)(\tau_\pi+\tau_\varepsilon)}\left(\pi+\varepsilon\right)\\ &+\frac{\gamma_R\tau_\eta\sqrt{\tau_\pi}\left((\tau_\pi+\tau_\varepsilon)(1-\alpha)+\gamma_D\tau_R(1-\alpha\beta)\right)}{(1-\alpha\beta)(\gamma_R\gamma_D\tau_\eta^2)+(\tau_\pi+\tau_\varepsilon)^2+\tau_\eta(\gamma_R+\gamma_D)(\tau_\pi+\tau_\varepsilon)}\left(\pi+\eta_R\right)\end{aligned} \tag{15}$$

By Theorem 2 in Huo and Pedroni (2020), the equilibrium of the game is unique.

Comparative statics To illustrate the interaction of signal precision and coordination/substitution motives, we use a simple numerical example. Suppose $\tau_\eta=\tau_\pi=\tau_\varepsilon=1$ and $\gamma_D=1$ so that only the parameter γ_R governs the differences in (private) signal precision. In the simple case, the equilibrium best response function for $R-$type agents is

$$\begin{aligned}\mathbf{h}'_{\mathbf{R}}\mathbf{x}_{\mathbf{R}} =& \frac{3+\alpha\gamma_R}{6+3\gamma_R-\alpha\beta\gamma_R}\left(\pi+\varepsilon\right)\\ &+\frac{\gamma_R(3-2\alpha-\alpha\beta)}{6+3\gamma_R-\alpha\beta\gamma_R}\left(\pi+\eta_R\right)\end{aligned} \tag{16}$$

As inspection of the expression makes clear, the weight on the public signal (the first element) and the private signal (the second element) depend nonlinearly on the precision of R's private signal and the weight both agents place on coordination.

Remark (Comparative statics of the simplified policy functions)**.** *When the only difference in information arises from the relative precision of $R-$type signals:*

1. *An increase in the value of coordination for R type agents will always increase the weight on the public signal and decrease the value of the private signal:* $\frac{d\mathbf{h}'_{\mathbf{R}}(1)}{d\alpha}>0$,

$\frac{d\mathbf{h}'_{\mathbf{R}}(2)}{d\alpha} < 0$ *regardless of the sign of* α *or* β.

2. *An increase in the precision of private information may increase or decrease the weight on the public signal. It will always decrease the weight on the public signal if* $\alpha \leq 0$. *It will increase the weight on the public signal if* $\alpha > 0$ *and if* γ_R *is sufficiently precise.*

The first remark follows from the fact that as α increases, R type agents either want to coordinate more with D type agents (if $\alpha > 0$) or suffer less of a loss from that coordination. For a given signal precision, they put more weight on common information when the motive to coordinate more is greater.

An increase in the precision of private information leads to an ambiguous change in the weights on public information versus private information. This is because more precise private information helps them forecast the fundamental better, but they know that D-agents do not have that information. When $\alpha < 0$ these motives work in the same direction for the choice of action. But if signals are sufficiently precise *and* R type agents want to coordinate with D type, then an increase in information quality pushes them to pick an action closer to the public signal, knowing that D type agents will place weight on it as well.