Economists and Public Opinion: Expert Consensus and Economic Policy Judgments

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Abstract

Given an increasing presence in the public sphere, what role do economic experts play in shaping public opinion on economic issues? In this paper, we examine the responsiveness of American public opinion on five economic policy issues to real information regarding the distribution of opinion on these issues among economists. We also examine the extent and role of trust in economists within the public. On average, we find meaningful changes in public opinion in the direction of expert consensus when citizens are given explicit information about expert opinion. However, we also find heterogeneity in citizen responsiveness across issues, such that aggregate opinion change is smaller on symbolic policy issues relative to technical ones. Further, on symbolic (but not technical) issues we find that citizens use judgments of the trustworthiness of economic experts in a motivated fashion, as a means of reinforcing prior opinions.

What this says is that in practical terms the professional consensus *doesn't matter*… If policymakers ignore professional consensus, and if views about how the world works are completely insensitive to evidence and results, does knowledge matter. [sic] If a tree falls in the academic forest, but nobody in Brussels or Washington hears it, did it make a sound?

Paul Krugman, "Useless Expertise"

Introduction

Economists and other economic experts increasingly occupy prominent roles as public commentators on salient economic issues of the day. Sparking a national discussion, Thomas Piketty's massive treatise *Capital in the Twenty-First Century* spent eleven straight weeks on the *New York Times* bestseller list, including one week as the bestselling non-fiction book. Several academic economists write regularly for high-profile blogs and national newspapers, and there is a growing trend toward analytics-heavy news websites that spend much space on economic policy, including *Vox.com*, *The Upshot* at the *New York Times*, *Wonkblog* at the *Washington Post*, and *FiveThirtyEight: Economics* at *ESPN*. In the business world more broadly, the *Washington Post* argues that "a chief economist is the new marketing must-have."[1]

Given their increasing presence in the public sphere, what role do economic experts play in shaping public opinion on economic issues? Despite its growing importance, almost no research exists on this question (but see Sapienza and Zingales 2013). In the present paper, we begin an investigation into the public's use of economic experts as sources of information for forming preferences over complex issues of economic policy. To organize our inquiry theoretically, we draw on standard dual-process models of political judgment. Empirically, we

[1] http://www.washingtonpost.com/news/storyline/wp/2014/07/28/chief-economists-are-the-new-marketers/.

experimentally examine citizen responsiveness to economic experts on issues where there is near-consensus.[2]

Such issues are useful for an initial investigation for a few reasons. First, consensus among economists on key policy issues may be more prevalent than the often vitriolic debate of recent years suggests. Stevenson and Wolfers, drawing on the Booth survey data, state the following:

> Watching Democrats and Republicans hash out their differences in the public arena, it's easy to get the impression that there's a deep disagreement among reasonable people about how to manage the U.S. economy. Nothing could be further from the truth. In reality, there's remarkable consensus among mainstream economists, including those from the left and right, on most major macroeconomic issues. The debate in Washington about economic policy is phony. It's manufactured. And it's entirely political.[3]

Research suggests, however, that a substantial gap exists between economic experts and the public on many of these issues (Caplan 2007; Sapienza and Zingales 2013).[4] These are of particular importance, because the expected social gains from elite-driven opinion change should be particularly large when experts and the public strongly disagree (e.g., vaccinations and autism; climate change). Second, to the extent that economic experts *can* influence public opinion, we should expect that influence to be largest when experts largely agree. As an initial investigation into the influence of economic experts, it is reasonable to consider conditions most favorable to finding effects in order to estimate the upper bounds of expert influence on aggregate opinion. Third, the role of expert consensus and opinion in shaping public attitudes is a topic of substantial interest across several domains of public policy, including public health (Nyhan et al. 2014; Nyhan, Reifler and Ubel 2013), the environment (e.g., Kahan et al. 2012; Kahan, Jenkins-Smith, and Braman 2011; Malka, Krosnick and Langer 2009), and the risks and

[2] These data come from a recent survey of about forty academic economists of varying ideological persuasions and home institutions conducted by the Chicago Booth School of Business. We describe the survey further below.
[3] http://www.bloomberg.com/news/2012-07-23/the-u-s-economic-policy-debate-is-a-sham.html.
[4] Our own data—reported below—confirm these gaps.

benefits of technology (Kahan et al. 2008; Scheufele and Lewenstein 2005). As citizens give more weight to economic issues in their voting behavior than to any other domain on average (Ansolabehere, Rodden and Snyder 2006; Bartels 2006), and regularly cite economic concerns as the country's "most important problem" (Smith 2007), the investigation of citizen responsiveness to *economic* consensus is especially important to American politics. Fourth, this literature suggests substantial pessimism regarding the ability of experts to persuade the public, and thus little incentive for political representatives to respond with consensus-consistent policies. As indicated by the epigraph to this paper, while it might be intuitive to believe this pessimism should extend to the economic domain, only one study to date has approached this question empirically (Sapienza and Zingales 2013), and there are reasons to believe that expert opinion may be more influential in the domain of economic policy.

Our core conclusions are three. First, despite existing pessimism regarding the efficacy of using expert opinion as a tool for changing public opinion, we find meaningful aggregate responsiveness to expert consensus in the economic domain. Second, there is heterogeneity in responsiveness across different issues, and this variation appears to be related to issue politicization. Issues that are more symbolic show less responsiveness to expert consensus, while more technical questions over which fewer citizens hold prior opinions are very responsive. Finally, our results suggest that citizen attitudes toward economists as trustworthy sources of information are mixed, but relatively uncrystallized. While there is a slight partisan bias in trust judgments—with right-wing affiliates somewhat less trusting on average—demographic and political factors explain very little variance in trust. Consistent with this claim, we find that citizens use trust judgments more as a tool for reinforcing priors (Kahan et al. 2011) than as a heuristic guide for forming opinions on complex policy issues (Lupia and McCubbins 1998). In

other words, at present, trust judgments seem more likely to be rationalizations of a preferred policy than a latent propensity to follow economics experts across varied contexts. More generally, our empirical findings of aggregate responsiveness averaging across issues, large responsiveness on technical issues of low salience, and motivated skepticism on salient and symbolic issues, suggest both the ability of experts to change public opinion and important bounds on this ability. This implies a need for those wishing to use such experts as tools for persuasion to consider strategic issues of message timing and framing in crafting their appeals to the public.

Theory

Contemporary dual-process models of political judgment posit that citizens are motivated by three primary goals: efficiency, belief perseverance, and justifiability. Put another way, all else equal, citizens would prefer to make political judgments with minimal effort, to maintain prior opinions and positive identities, and be able to convince dispassionate others that their opinions are reasonable and fit the facts (Druckman 2012; Groenendyk 2013; Kunda 1990; Lavine, Johnston and Steenbergen 2012; Lodge and Taber 2013; Tetlock 2002). Politics is a peripheral concern to most people; in turn, citizens typically seek to minimize the expenditure of resources on preference formation when possible. This suggests that they rely on heuristics—rather than extensive information gathering—to make judgments about political matters (e.g., Lau and Redlawsk 2006; Lupia 1994; Popkin 1991), and these often take the form of cues from information sources deemed both knowledgeable and, perhaps more importantly, *trustworthy* (Lupia and McCubbins 1998). To the extent that economic experts are considered trustworthy sources of information within their area of expertise, heuristic models of policy judgment suggest a meaningful role for expert consensus in shaping public opinion.

Much research, however, suggests that citizens are not only concerned with forming "accurate" judgments efficiently; they are also motivated to form judgments that minimize the need for changes to their prior opinions. In the presence of information that threatens preexisting beliefs, most people are quite willing to expend cognitive effort to justify resistance to this information and thus continuity of opinion. This dynamic is captured by the term *motivated skepticism*, or the differential critical treatment of counter-attitudinal information relative to information supportive of priors (e.g., Ditto and Lopez 1992; Groenendyk 2013; Lodge and Taber 2013; Taber and Lodge 2006).

Indeed, recent research finds that the communication of scientific consensus with the goal of changing public opinion is fraught with difficulties, and citizen responses to uncongenial information are typically characterized by resistance (Taber and Lodge 2006). Kahan and colleagues (Kahan 2013; Kahan et al. 2010; 2011) demonstrate that citizens judge the characteristics of experts as a function of the relationship between expert opinion and their core values. For example, those whose values predispose them to oppose concealed carry laws judged a criminology expert to be less trustworthy when the expert suggested that such laws lower violent crime rates than when he suggested they raise violent crime rates. In another study, greater knowledge of scientific findings regarding climate change increased concern among Democrats and Independents over time, but not among Republicans (Malka et al. 2009).

Such differential treatment of uncongenial information not only makes persuasion difficult, but can actually lead to *greater* disagreement as skeptical citizens attempt to generate compelling reasons to remain dubious (e.g., Ditto and Lopez 1992; Garretson and Suhay 2014; Lodge and Taber 2013; Lord, Ross and Lepper 1979; Nyhan and Reifler 2010; Nyhan et al. 2014; Nyhan, Reifler and Ubel 2013; Taber and Lodge 2006). For instance, Nyhan et al. (2014)

find that a variety of strategies for communicating expert consensus about the lack of a link between vaccination and autism all failed to increase intent to vaccinate, and led to a *decrease* in this intent among those with strong anti-vaccination priors. Similarly, Taber and Lodge (2006; Lodge and Taber 2013) find that when citizens are exposed to counter-attitudinal information, they invest significant cognitive effort to delegitimize the evidence and maintain their priors (see also Cohen 2003; Kahan et al. 2012). This line of work suggests that simple heuristic models may overestimate the persuasive power of consensus information on public opinion by failing to consider the influence of citizen motives beyond efficiency and accuracy.

Nonetheless, motivated skepticism is not unbounded, and citizens are expected to show greater responsiveness to new information under certain conditions (e.g., Druckman 2012; Groenendyk 2013; Kunda 1990; Lavine et al. 2012). First, contemporary research suggests that the negative affect elicited by exposure to counter-attitudinal information is a primary impetus driving motivated skepticism (Lodge and Taber 2013; Westen et al. 2006). This suggests that resistance to new information in the aggregate is more likely on affect-laden symbolic issues for which many citizens have prior opinions. In contrast, technical issues with little affective resonance are less likely to evoke biases. This claim is reinforced by recent research demonstrating that motivated skepticism is tempered when citizens are prompted to consider the means by which a given policy will achieve desired policy ends (Fernbach et al. 2013). In considering the technical aspects of a given policy, citizens become aware of their lack of expertise, and thus their inability to justify their prior opinion. This should generate more openness to persuasion by area experts.[5] Second, motivated skepticism is more likely on issues

[5] Additional empirical support for the importance of justifiability comes from Groenendyk (2013), who finds that partisans will continue to identify with their favored party when they disagree with the party on an important issue, but only to the extent that they have the cognitive resources available to construct a reasonable justification for

that are salient at the elite level, and thus invested with the symbols of partisan and ideological conflict. Issues of low political salience are less likely to evoke affective biases rooted in partisan and ideological self-identifications. Indeed, Druckman et al. (2013) demonstrate that such biases are more prevalent on issues over which elite partisans are divided (see also Pollock, Lilie and Vittes 1993).

Taken together, these theoretical considerations suggest the potential for economic experts to move public opinion in the direction of consensus, but also suggest bounds on their ability to do so. On the one hand, expert consensus is a highly informative cue requiring little effort to process, and thus provides an easy route to judgment on relevant issues. Moreover, economic policy is often quite technical, involving the best means to achieve widely shared ends (Carmines and Stimson 1980; Ellis and Stimson 2012; e.g., economic growth, financial stability, high quality affordable healthcare). In this way, the economic domain may be distinct from previous investigations of expert influence, and we might expect more movement of opinion in response to consensus information (e.g., compared to environmental issues like global warming or gun control). On the other hand—as the recent debates over health insurance reform have made clear—many technical economic issues become politicized and take on a symbolic character. In such cases, the affect elicited by such issues and their partisan and ideological associations should generate motivated skepticism in ways similar to other issues examined in this literature. In this vein, the present paper empirically explores the following hypotheses:

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continued identification. When cognitive resources were experimentally reduced, partisan change was a more likely result in the face of uncongenial information.

H1: Expert Influence*: Exposure to information about expert consensus on economic issues (compared to lack of exposure) will, on average, increase the percentage of the public that agrees with the expert consensus.*

H2: Issue Heterogeneity*: Exposure to information about expert consensus on economic issues (compared to lack of exposure) will have different effects for different issues. On symbolic economic issues—over which most citizens have prior opinions—opinion change will be relatively small or non-existent. On technical economic issues for which most citizens do not have prior opinions, opinion change will be relatively large.*

H3: Motivated Skepticism*: On symbolic economic issues, citizens will use trust judgments of economic experts strategically to reinforce their preexisting opinions. Citizens whose priors are consistent with the expert consensus will show greater trust in economic experts following exposure to consensus information compared to conditions with no exposure to consensus information. Citizens whose priors are inconsistent with the expert consensus will show lesser trust in experts following exposure to consensus information compared to conditions with no exposure to consensus information.*

Methods

We conducted a survey experiment that was fielded in August of 2013 as part of Time-sharing Experiments for the Social Sciences (TESS). TESS is a National Science Foundation funded[6] organization which provides space to social science researchers wishing to conduct

[6] SES-0818839.

population-based survey experiments.[7] The survey experiments are conducted by the research company GfK Group.[8,9]

Experimental Design

The experimental design is between-subjects, and respondents were randomly assigned to one of eleven conditions (see Tables 1 and 2). In conditions one through five (hereafter, "no cue" conditions), respondents received a statement about one of five policies (see Table 1); each was asked, "To what extent do you agree or disagree with the following statement?", with response options "Strongly Agree," "Agree," "Disagree," "Strongly Disagree," and "Uncertain." In conditions six through ten (hereafter, "cue" or "consensus cue" conditions), respondents received policy statements identical to those in the no cue conditions, but each statement was prefaced by the following: "A sample of professional economists with widely varying political preferences was asked whether they agreed or disagreed with the following statement:" Respondents were then asked, "To what extent do you agree or disagree with this statement?" Response options were identical in both the no cue and the cue conditions, except that the distribution of economists' responses to the statement was shown directly beneath each response option in the cue conditions (see Table 2).

Directly following their response to this statement, all respondents in the no cue and consensus cue conditions were asked two questions measuring trust in economists as sources of information about economic policy. The first item read, "When thinking about economic policy issues, generally speaking, to what extent do you trust or distrust the opinions of professional

[7] Space is awarded on a competitive basis. For more information, see http://www.tessexperiments.org/.
[8] GfK is formerly known as Knowledge Networks, http://www.gfk.com/us/Pages/default.aspx.
[9] GfK randomly selects members from its "KnowledgePanel" of available survey respondents for specific studies via a probability proportional to size weighted sampling approach. KnowledgePanel members are chosen via probability-based sampling, and the panel is representative of the entire U.S. population. For additional information, see http://www.knowledgenetworks.com/knpanel/docs/KnowledgePanel(R)-Design-Summary-Description.pdf.

economists?" The six response options ranged from "Trust a great deal" to "Distrust a great deal." The second item read, "When our political representatives in Congress are making public policy on economic issues, generally speaking, to what extent should they rely on the opinions of professional economists?" The four response options ranged from "A great deal" to "Not at all." The final condition served as a clean, control condition (hereafter, "control" condition). Respondents randomly assigned to this condition did not receive a policy statement, and they were *only* given the two trust items.[10]

Source and Selection of Issue Treatments

The five issue statements and the associated data concerning economist opinion are taken directly from the Initiative on Global Markets' (IGM) panel of economists, operating out of the University of Chicago's Booth School of Business. At the time of our study, the panel consisted of forty-one senior economists from elite universities in the United States, and was selected to be reflective of diverse political views and partisan affiliations.[11] Five issue statements were chosen that met two criteria for defining consensus on an issue: (1) all panel economists were on the same side of the issue or were uncertain—that is, among those who were not uncertain, all economists expressed either agreement or disagreement with the statement; and (2) no more than 10% of the sample responded "Uncertain."[12] This ensures 90% or greater agreement or disagreement with the statement, and no conflicting opinions.[13]

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[10] Approximately 200 respondents were assigned to each of the no cue and consensus cue conditions: $n_1 = 217$, $n_2 = 207$, $n_3 = 204$, $n_4 = 195$, $n_5 = 212$, $n_6 = 202$, $n_7 = 206$, $n_8 = 209$, $n_9 = 214$, and $n_{10} = 205$. 323 were assigned to the control condition.

[11] For further information, and to see all questions to date, see http://www.igmchicago.org/home.

[12] We use the certainty-weighted responses reported by IGM. This has the advantage of removing the small percentage of non-responses, so that the percentages add to 100 and respondents required no further instructions on how to interpret the distribution.

[13] These conditions constrained the potential issues available, but there were more than five. We chose five total issues as a compromise between maximizing the potential for issue heterogeneity and maximizing statistical power for hypothesis testing. We narrowed down the set to a final five on the basis of the theoretical considerations discussed next, and in consultation with reviewers at TESS.

Finally, we wanted to select issues that vary in terms of their technicality and association with salient political symbols, thus allowing for the potential for heterogeneity in opinion change and motivated resistance. The "immigration" and "China" issues were obvious choices for symbolic issues. Immigration is a salient and highly symbolic issue in American politics (Citrin et al. 1990; 1997) that touches on issues of race, ethnicity, and culture, and over which the two major parties are associated with distinct stands (e.g., Ha 2008; Hood and Morris 1997; Newman 2013; Newman, Hartman, and Taber 2012; Sides and Citrin 2007; Sniderman, Hagedoorn, and Prior 2004). Similarly, issues of free trade and economic protectionism evoke considerations of country-level competition, and thus of race, ethnicity, patriotism and nationalism; even more so as China has become a prominent symbol in valence appeals during political campaigns. For example, in the second Presidential debate in 2012, both Barack Obama and Mitt Romney devoted substantial time to China and the threats it poses—sometimes speaking of very explicit threats. Romney stated, "China's been cheating over the years, one, by holding down the value of their currency, number two, by stealing our intellectual property, our designs, our patents, our technology. There's even an Apple store in China that's a counterfeit Apple store selling counterfeit goods. They hack into our computers." Similarly, Obama stated, "When he talks about getting tough on China, keep in mind that Governor Romney invested in companies that were pioneers of outsourcing to China and is currently investing in countries — in — in companies that are building surveillance equipment for China to spy on its own folks. That's — Governor, you're the last person who's going to get tough on China."[14] There is also individual-level variation in whether citizens respond positively to symbolic appeals to nationalism (e.g., Baughn and Yaprak 1996; Chirumbolo et al. 2004; Schatz, Staub and Lavine 1999). Finally, we selected the issue concerning funding for Medicare and Medicaid because these are among the

[14] http://www.npr.org/2012/10/16/163050988/transcript-obama-romney-2nd-presidential-debate.

most well-known social welfare programs in the country, and thus ones for which many citizens are likely to have prior opinions, interests, or symbolic attachments (e.g., Mettler 2011).

Table 1. Policy Items

Issue	**To what extent do you agree with the following statement?**	**Consensus Position**
Immigration	"The average US citizen would be better off if a larger number of highly educated foreign workers were legally allowed to immigrate to the US each year."	Agree
Medicare/Medicaid	"Long run fiscal sustainability in the U.S. will require cuts in currently promised Medicare and Medicaid benefits and/or tax increases that include higher taxes on households with incomes below $250,000."	Agree
Trade with China	"Trade with China makes most Americans better off because, among other advantages, they can buy goods that are made or assembled more cheaply in China."	Agree
Taxes and Tax Cuts	"A cut in federal income tax rates in the US right now would raise taxable income enough so that the annual total tax revenue would be higher within five years than without the tax cut."	Disagree
Gold Standard	"If the US replaced its discretionary monetary policy regime with a gold standard, defining a 'dollar' as a specific number of ounces of gold, the price-stability and employment outcomes would be better for the average American."	Disagree

Table 2. Example of No Cue and Cue Conditions

No Cue	To what extent do you agree or disagree with the following statement? "The average US citizen would be better off if a larger number of highly educated foreign workers were legally allowed to immigrate to the US each year."					
		Strongly Agree	Agree	Disagree	Strongly Disagree	Uncertain
		1	2	3	4	5
Consensus Cue	A sample of professional economists with widely varying political preferences was asked whether they agreed or disagreed with the following statement: "The average US citizen would be better off if a larger number of highly educated foreign workers were legally allowed to immigrate to the US each year." To what extent do <u>you</u> agree or disagree with this statement?					
		Strongly Agree	Agree	Disagree	Strongly Disagree	Uncertain
	Choose one:	1	2	3	4	5
	% of economists who gave this response:	49	46	0	0	5

The categorization of these as symbolic economic issues seems reasonable given actual responses in our data. In the no cue conditions, with no information about opinion among economists, over 70% of all respondents expressed an opinion rather than choosing "Uncertain." In contrast, for the last two issues chosen (taxes/tax cuts and the gold standard) about 60% of respondents selected "Uncertain" rather than expressing an opinion, strongly suggesting that these two issues are substantially more technical. Indeed, both issue statements use economic jargon that may be unfamiliar to many citizens (e.g., "discretionary monetary policy regime"). The gold standard is also a fairly obscure issue that is not clearly tied to major party divisions.

While “taxes” as a general issue is quite symbolic in American politics, note that the statement here is atypical as it concerns a prediction about the effect of such cuts on revenue.

We fully recognize that the categorization of the first three as “symbolic” and the last two issues as “technical” is both relative and an oversimplification. We nonetheless see the distinction as theoretically useful for an initial exploration into the influence of economic experts. At a minimum our choice of issues for these two categories appears to be confirmed empirically in terms of prior distributions of uncertainty within the public, which allows for the explicit testing of issue-based heterogeneity in motivated skepticism and the influence of elite consensus on public opinion.

Analytic Strategy

The empirical portion of our paper proceeds as follows. First, we consider the distribution of trust in economists within the mass public, both overall and across several individual differences. Second, we examine our core research question: the responsiveness of the public to consensus information across the five issues. We test whether support for the consensus position differs between the no cue and cue conditions, and the extent to which such change is heterogeneous across issues. Third, we examine evidence for the use of asymmetric skepticism of economic experts with the goal of defending one’s prior beliefs. In the cue conditions, we asked about trust *after* respondents answered the policy items. By examining how trust judgments vary between the control condition and the cue conditions across different subcategories of respondents, we are able to examine whether there is greater motivated skepticism on issues for which consensus information has smaller effects. We end with a discussion of the implications of our findings for the literature.

Trust in Economists

We begin with a simple examination of the extent to which citizens trust professional economists' opinions regarding economic policy.[15] Figure 1 shows the distribution of responses to our two trust items, and suggests two conclusions. First, on aggregate, individuals only seem to trust economists to a modest extent as sources to inform their own judgments about economic policy. While 59% fall within one of the three "trust" categories, the modal response to this item is "trust a little." Only 1% trust economists "a great deal," and over 20% of the sample display "somewhat" or "a great deal" of distrust. This mixed pattern of trust is reinforced by the distribution of beliefs for the extent to which Congress should rely on economists, for which the modal response is a hesitant "somewhat." Only 15% believe policy makers should rely on economists "a great deal," and 37% believe that they should rely on economists "only a little" or "not at all."

While trust in professional economists is thus tepid, it is also variable, suggesting the potential for trust to vary systematically as a function of individual-level political and demographic characteristics. We regressed a scale constructed from the two trust items[16] on age, gender, race, education, income, southern residency, and right-wing political affiliation.[17] We display the coefficient estimates and respective uncertainty bounds from this regression in Figure 2. All variables were recoded to the interval [0,1], so each coefficient estimate in Figure 2 can be interpreted as the percentage point change in trust for a change in each independent variable from its minimum to its maximum value.

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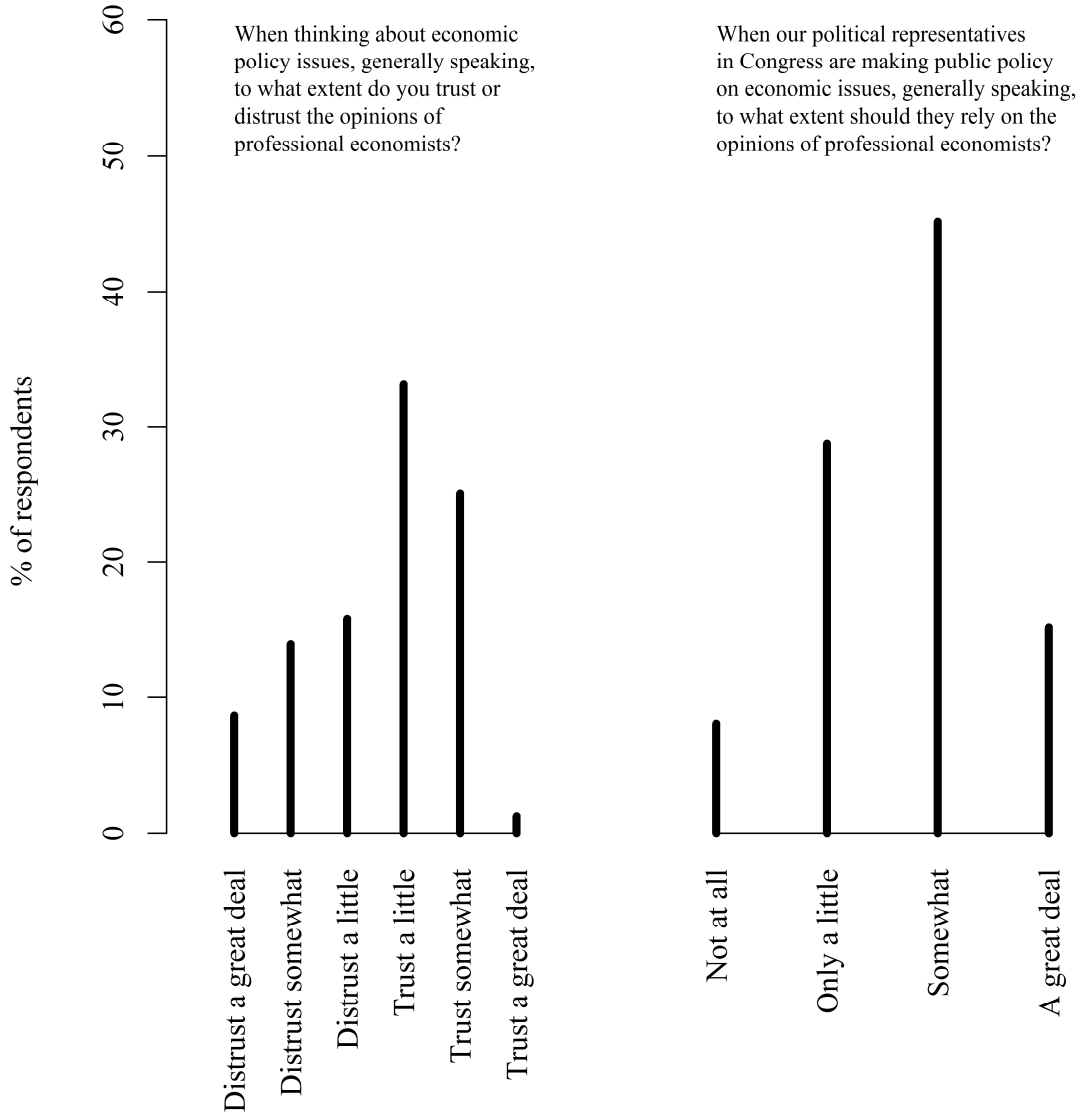
[15] To ensure that our findings here are uncontaminated by our experimental treatments, this section only includes those respondents assigned to the control condition.

[16] We combined and averaged the values for each trust item. The correlation between the two trust items was (r = .47). Results are similar when the two items are examined separately, though males are significantly less likely than females to say that Congress should rely on professional economists when making policy.

[17] Right-wing affiliation is measured as the average of partisan and ideological self-identification. Both of these are operationalized in the common manner, as seven-point scales.

Figure 1. Trust in economists in the mass public



The results suggest an overall lack of systematic variation in trust judgments: the explained variance is 7%, and only one predictor—right-wing political identification—is statistically significant. Specifically, strongly left-leaning citizens are about 12 percentage points more trusting of economists than strongly right-leaning citizens. This is an intriguing finding given the typical association of both the economics profession and the political right with support for the free market in American politics. The pattern of coefficients for education also suggests a

potential gap between citizens with and without a college degree. To explore this further, we re-estimated the model including a dummy variable for having a college degree in lieu of the extended operationalization. The estimate is positive and statistically significant (β=.08, p<.01), indicating that college-educated citizens are 8 percentage points more trusting, on average, than non-college-educated citizens. Overall, however, these results indicate that trust in economists does not appear to be strongly rooted in common socio-demographic characteristics or political leanings.

These empirical findings for trust hold two potential implications for opinion change. First, given the tepid levels of trust, even when provided consensus information (as in the following section), opinion change may not be large because citizens either do not believe that economists are valid sources of information (even on economic policy). Second, trust in economists may simply be an uncrystallized attitude for many citizens—a topic few have previously considered in any depth—and instead may serve as a means of legitimizing preferred conclusions and delegitimizing non-preferred conclusions, rather than as a predisposition to trust or distrust economic experts. In other words, citizens may engage in asymmetric skepticism of expert credibility as a function of their priors. As we will discuss further below, there is strong evidence for this interpretation and the motivated use of trust judgments. This is consistent with the work of Kahan et al. (2011).

Figure 2. Predictors of citizens' trust in economists

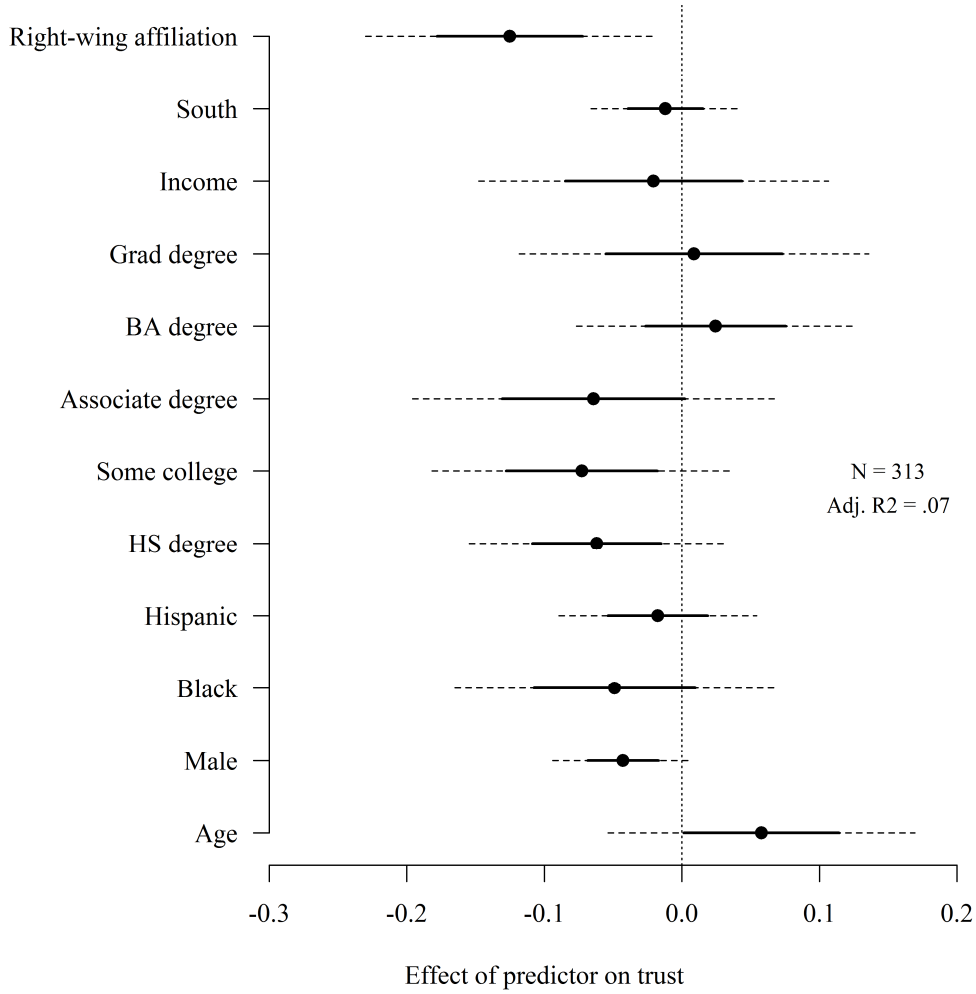


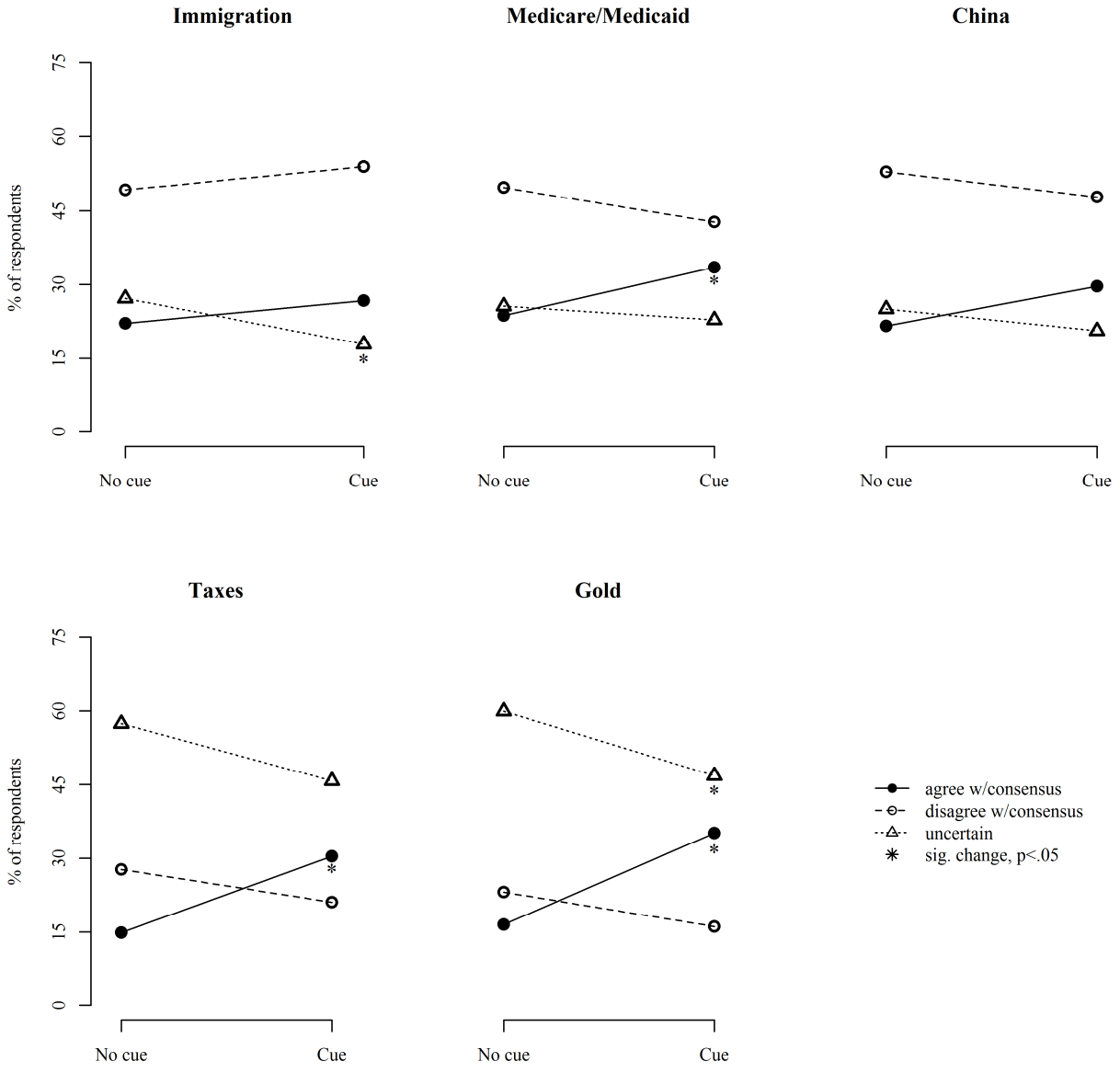
Figure notes. For dichotomous independent variables, points represent the difference in average trust between citizens who possess the characteristic listed and the excluded category. For all other variables, points represent the difference in average trust for citizens at the maximum and minimum values of the variable. Extended dotted lines are 95% confidence bounds, and extended solid lines are 68% confidence bounds.

Consensus and Opinion Change

We now turn to the core question of our paper: does the provision of information regarding expert consensus on economic issues alter the distribution of public opinion on those issues? The raw percentages of respondents falling in each response category across issues and experimental conditions are shown in Figure 3. The five blocks represent the five policy issues, the y-axis represents percentages of respondents, and each line represents a distinct category of

response to a particular issue: agree with the consensus (solid dots), disagree with the consensus (empty dots), and uncertain (empty triangles). For each issue, Figure 3 shows how the percentage of respondents in each response category changes between the "no cue" and the "consensus cue" conditions of the experiment. There are a number of patterns that are worth exploring in greater depth.

Figure 3. Percentages of respondents in response categories across conditions and issues



First, we confirm a gap between the mass public and experts on five economic issues of substantial importance. In the no cue conditions, a majority of respondents express an opinion *opposite* to the expert consensus on the three symbolic issues: immigration, Medicare/Medicaid, and trade with China; this echoes the findings of Caplan (2007) and Sapienza and Zingales (2013) using a distinct methodology. Further, in each of these three cases, uncertain respondents outnumber those who agree with the consensus. On these three issues, only about 20% of the sample in the no cue condition expressed a belief consistent with the expert consensus.

We find a distinct pattern when looking at the final two issues—taxes and the gold standard. Here, the majority of respondents (about 60%) in the no cue condition state that they are uncertain about these issues. Still, among those willing to state a belief, only about 15% of respondents agreed with the experts. Consistent with a primary goal of the paper, our findings suggest meaningful heterogeneity in public beliefs across issues, even within a single broad domain of public policy.

The slope of each line in Figure 3 represents the percentage point change for each response category between the no cue and consensus cue conditions. We observe substantial opinion change in the presence of consensus information for both taxes and the gold standard, such that the percentage of respondents agreeing with the consensus increases by 16 percentage points for the taxes issue and 19 percentage points for the gold standard. This gain appears to be driven by a decline in both uncertain *and* disagreeing respondents, though the decline in uncertainty is greater than the decline in disagreement, again suggesting the importance of issue technicality and lack of prior opinions to aggregate responsiveness to experts. The symbolic issues (immigration, China, Medicare/Medicaid) show smaller changes in agreement across conditions, and in all cases the increases are less than or equal to 10 percentage points.

Moreover, we find evidence for a backfire effect (e.g., Nyhan and Reifler 2010; Nyhan et al. 2014) on the issue of immigration—perhaps the most politicized issue examined—such that the percentage of respondents who disagree with the consensus *increases* (though non-significantly) in response to information about consensus for the issue. For each of the three symbolic issues, even in the presence of clear information regarding consensus, explicit disagreement with experts remains above 40%.

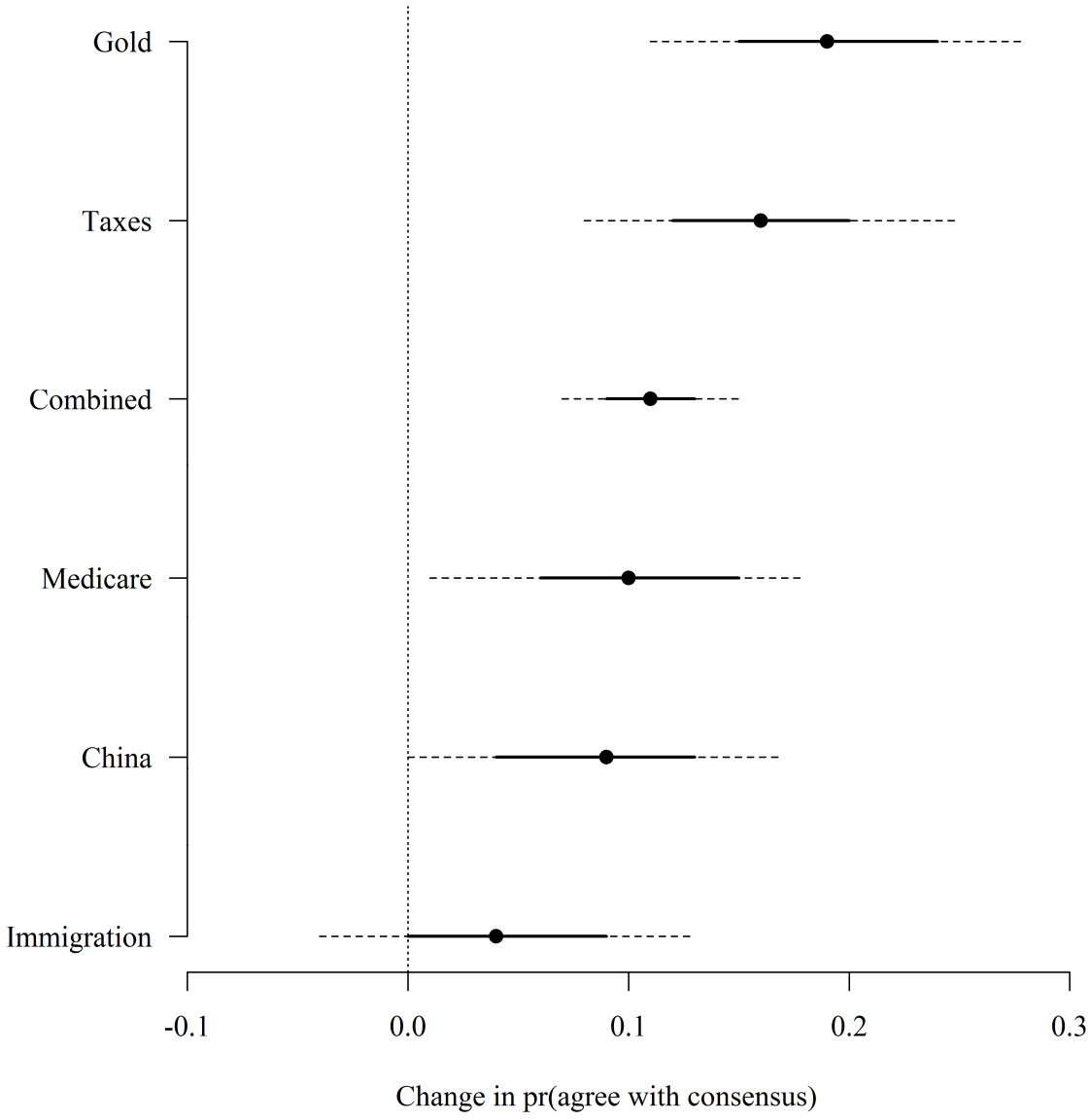
Figure 4 plots the estimated differences in the probability of agreement with the consensus as a function of receiving (versus not receiving) the consensus cue, ordered with respect to effect size.[18] The "combined" estimate averages over issue-specific heterogeneity. The ordering of effect sizes maps nicely onto our theoretical distinction between symbolic and technical issues. The consensus cue was found to be least effective for the immigration issue, for which we find no significant difference in agreement between experimental conditions. The largest differences in agreement across conditions are for gold and taxes, with smaller differences for both Medicare/Medicaid and China, with the latter falling just short of statistical significance. The overall average difference is a positive and statistically significant 11 percentage points.

These results suggest a few broad conclusions. First, consistent with *H1*, the expert influence hypothesis, we observe meaningful opinion change through the communication of consensus information. This change is actually quite substantial for the most technical issues examined. Indeed, for the issue of the gold standard, we observe an increase in agreement with the consensus position of nearly 20 percentage points, using only a single, brief experimental treatment. This is a large experimental effect size by common scholarly standards. Importantly,

[18] These estimates were obtained via separate multinomial logits for each issue, regressing the three-category dependent variable (agree, disagree, uncertain) on a dummy variable for random assignment to the no cue or the consensus cue conditions. Confidence bounds were estimated via simulation (1000 draws for each model).

however, we also find substantial resistance of public opinion to information on expert consensus on the three symbolic issues, and no statistically significant increase in agreement on the issues of immigration and China. This is consistent with our second hypothesis regarding issue heterogeneity, as well as other recent work in the area of expert influence.

Figure 4. Changes in probability of agreement as a function of consensus cues



Empirical Evidence for Motivated Skepticism on Symbolic Issues

Our experimental design is between-subjects, and thus we cannot directly observe motivated skepticism in our respondents.[19] However, the study was designed in such a way as to allow for *indirect* observation of the motivated use of trust judgments across agreement and disagreement with consensus on any given issue. Specifically, after receiving information about the consensus position on their randomly assigned issue, and after stating their own position on the issue, all respondents received the same two trust items as respondents in the control condition. If respondents use judgments of trust strategically, we would expect those who disagree with the given consensus to display lower levels of trust in economists on average as a means of resisting the implications of their disagreement. Conversely, we would expect individuals who agree with the consensus position to display higher levels of trust, on average, as a means of bolstering their preferred position.

We examined these expectations in two ways. First, we utilized our regression estimates from Figure 2 above—which modeled trust as a function of individual-level characteristics in the control condition—to generate predicted values of trust for all respondents in the consensus cue conditions. That is, we used our regression estimates from the control condition and the actual characteristics of respondents in the *cue* conditions to generate predicted values of trust for respondents in the *cue* conditions. These predicted values can be considered imputed values of trust based on a regression model uncontaminated by experimental treatments. We then subtracted *predicted* trust from the *actual* value of trust observed for respondents in the consensus cue conditions. Given the noise in the predicted values (see Figure 2) we should expect a considerable amount of purely random variation in actual trust values around predicted

[19] See Taber and Lodge (2006) and Lodge and Taber (2013) for a number of excellent examples of how one might observe this directly.

trust values. Nonetheless, if respondents in the cue conditions are engaging in the motivated use of trust judgments, there should be a systematic relationship between the direction of the gap between predicted and actual trust and respondents' stated agreement or disagreement with the consensus position. Specifically, respondents who disagreed with the consensus position should show negative predictive errors on average (actual trust less than predicted trust), and respondents who agreed should show positive predictive errors on average (actual trust greater than predicted trust).

In Table 3, we display the difference between actual and predicted trust for respondents in each of the three response categories (agree, disagree, uncertain). We estimated these differences for all issues combined, for the three symbolic issues alone, and for the two technical issues alone. Evidence for motivated use of trust would entail negative coefficients when citizens disagree, positive coefficients when they agree, and insignificant coefficients when they are uncertain. The results are very much in line with our findings regarding opinion change above. Specifically, we see evidence for the motivated use of trust judgments averaging over all issues: citizens who agreed with the consensus showed a systematic and positive, 9-percentage-point divergence between actual and predicted trust after exposure to consensus cues (β=.09, p<.01). While the coefficient for disagreement is in the expected negative direction, it is not statistically significant.

However, if we look at the second and third sets of columns in Table 3, we see that there is issue-based heterogeneity that is consistent with our hypotheses. On the three symbolic issues, the pattern of coefficients and significance fits with what is expected if citizens are using trust judgments as a tool to reinforce their prior beliefs. Citizens who disagree with the consensus show a negative and significant divergence between actual and predicted trust, while the

difference is positive and significant for those who agree. Uncertain citizens show no evidence for a difference in actual and predicted trust. Interestingly, there is also an asymmetry such that "bolstering" of favored opinions through increased trust is stronger than "resistance" through decreased trust. This, of course, could be idiosyncratic to the issues analyzed in the present study, and further research would be needed to draw any firm conclusions. Overall, the pattern of coefficients between response categories—given random assignment to conditions—is strong evidence that citizens are using trust judgments as a means of reinforcing their priors.

Critically, however, this asymmetric skepticism completely disappears when looking at the two technical issues. Indeed, all three groups of respondents show *greater* trust than predicted after exposure to consensus information. This pattern is consistent with the notion that exposure to highly technical, means-oriented issues makes one's lack of knowledge salient, and perhaps engenders greater respect for experts, though we cannot directly test this mediating mechanism in the present study. These results are consistent with our third hypothesis which posits the motivated use of trust judgments on symbolic but not technical issues.

Table 3. Average difference in actual and predicted trust in consensus cue conditions

Respondent category	All issues combined			Symbolic issues			Technical issues		
	B	SE	p	B	SE	p	B	SE	p
Disagree with consensus	-.01	.01	.25	-.03	.01	.01	.06	.03	.02
Agree with consensus	.09	.01	.00	.12	.02	.00	.06	.02	.01
Uncertain	.02	.01	.19	-.01	.02	.68	.03	.02	.06
Adj. R^2		.05			.10			.03	
N		998			594			404	

Notes: Entries are OLS estimates. The dependent variable is actual minus predicted trust. The trust scale ranges from zero to one. Negative values indicate lower trust than would be predicted independent of experimental treatments, and positive values indicate higher trust than expected.

We can also empirically test for the motivated use of trust judgments by examining how the relationships of individual characteristics to trust in economists—such as political affiliation, income, and education—change between the control condition and the consensus cue conditions, and then estimating the association of these *changes* to the relationships of these same individual characteristics with consensus agreement in the no cues condition. An example may help to clarify this logic. Right-wing affiliation is negatively related to agreement with the consensus in the no cue immigration condition, which means that right-leaning individuals are less supportive of the position economists (implicitly) take on this issue than left-leaning individuals. When *explicitly* exposed to the consensus information, then, we would expect right-leaning individuals to downplay the trustworthiness of economists, and left-leaning individuals to play up their trustworthiness, with the ultimate goal of reinforcing their prior opinions on immigration. This implies that the *change* in the coefficient for right-wing affiliation predicting trust should be negative if we compare the control condition to the cue condition. And we can do this for every independent variable on every issue, and examine the overall pattern. If citizens are using trust judgments to reinforce their priors, we should find a strong association between changes in the relationship of individual differences to trust and the relationship of those same individual differences to agreement or disagreement with elite consensus in the no cue conditions.

We plot this relationship in Figure 5. The y-axis in this figure represents the *difference* in the OLS regression coefficient for a given predictor of trust when comparing the control condition to the consensus cue condition. Positive values on the y-axis indicate that the relationship has become more positive (i.e., higher values of that predictor are now more trusting relative to low values in the cue condition compared to the control condition), and vice versa. The x-axis represents the estimated effect of a given predictor on the probability of agreement

minus the probability of disagreement with the consensus position for respondents in the no cue condition (i.e., the "uncontaminated" relationship to agreement with the consensus).[20]

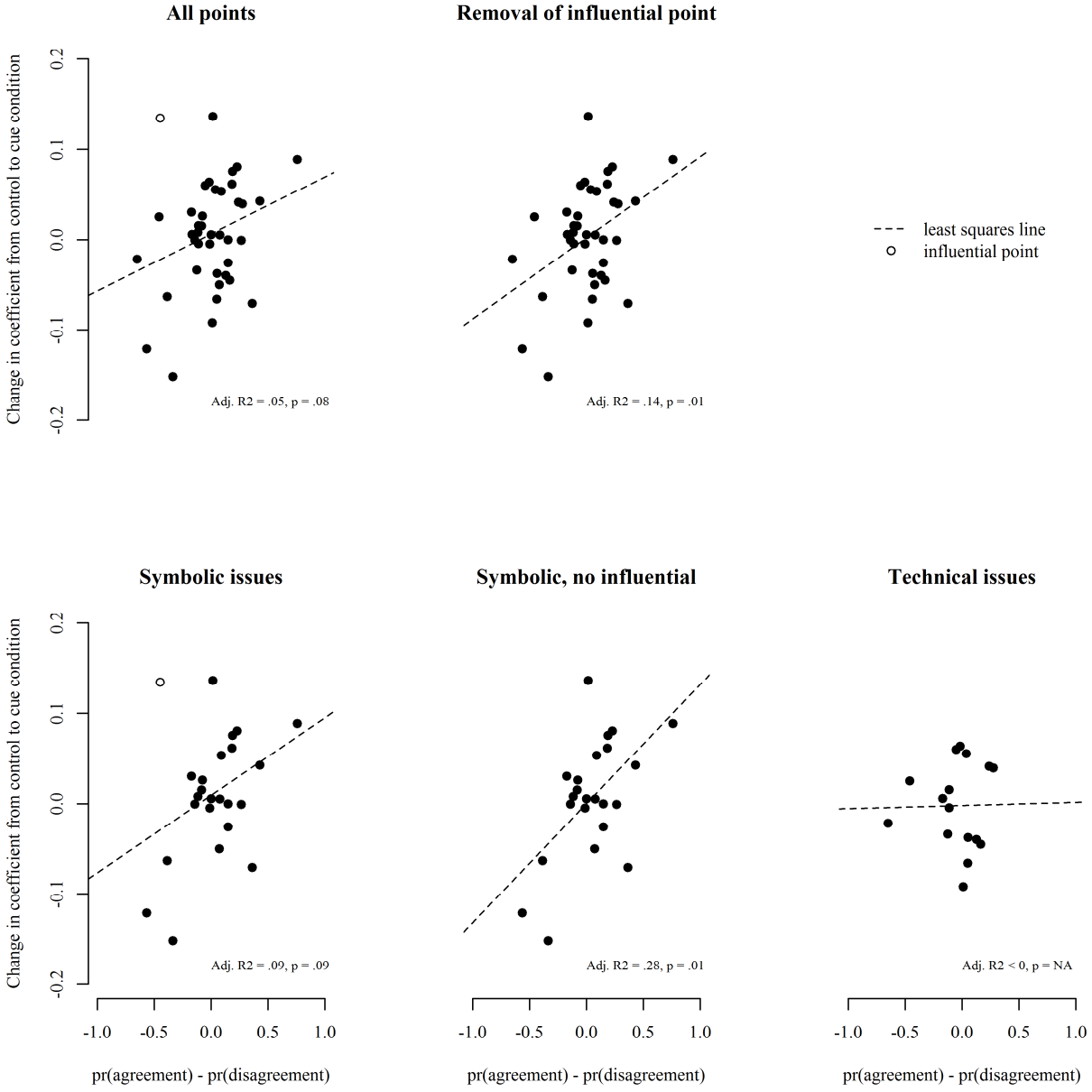
Considering all predictors and issues, the trend is in the expected positive direction, and falls just short of significance (R^2=.05, p=.08). The open circle indicates a highly influential observation.[21] Figure 5 also estimates the trend without this observation, and we find a strong and significant relationship in the expected positive direction (R^2=.14, p<.01). In both cases, predictors associated with consensus agreement in the no cue conditions show a positive change in their relationship with trust from the control to the cue conditions, while those associated with disagreement in the no cue conditions show a negative change on average.

Lastly, we examine the same pattern but split the conditions between the three symbolic issues and two technical issues as above. The first two panels on the bottom of Figure 5 show the results for the symbolic issues, the first panel with all data points, and the second panel removing the highly influential point as above. The final panel of Figure 5 shows the relationship for the technical issues only. Our findings strongly converge with the predicted values analysis in the previous section. For the symbolic issues, changes in the relationship of predictors to trust across conditions are strongly associated with the relationship of those predictors to issue attitudes and the relationship of those attitudes to the expert consensus (R^2=.09, p=.09 with the influential point, and R^2=.28, p<.01 without the influential point).

[20] These probabilities are derived from separate multinomial logits by issue of respondent opinion on condition membership in the no cue conditions.

[21] This point had both the largest value of Cook's D (Cook 1977) and was associated with a studentized residual of 3, which is almost five times the next largest value. Both statistics suggest the point is an outlier and worthy of additional attention. The point corresponds with the relationship of income to agreement with the consensus position on the China issue (consensus = support for trade with China), which is unexpectedly negative (higher income = less support for free trade). This reinforces our decision to examine the pattern both with and without the influential point. There is no correct answer as to whether this point should or should not be included, but the pattern is largely the same and consistent with expectations regardless of one's preference.

Figure 4. Changes in the relationship of predictors to trust as a function of agreement with the consensus in the no cue condition



As above, predictors that are positively related to the consensus position in the no cue conditions show positive changes in their relationship to trust from the control to the cue conditions, while predictors that are negatively related to the consensus position show negative changes. This is exactly what is expected if citizens are using trust judgments in a motivated

fashion. Furthermore, consistent with the predicted values analysis, this relationship *only holds* for the symbolic issues; as shown in Figure 5, there is no relationship at all for the two technical issues. For both sets of analyses, then, we find strong evidence for *H3*—the motivated skepticism hypothesis. When issues evoke symbolic cues more readily, and citizens are more likely to hold prior opinions, they appear to be both less responsive to scientific consensus at the aggregate and more likely at the individual level to use trust judgments of experts as a tool to reinforce their prior attitudes. By contrast, when issues are more technical and less salient, aggregate responsiveness is larger, and citizens do not adjust trust judgments to fit their priors when they *do* hold prior opinions.

Discussion and Conclusions

In this paper we have provided a systematic investigation into the public's use of economists as tools for opinion formation on economic policy issues. Given the sparse research on this topic, we chose to examine a straightforward question: when economic experts largely agree on an issue, does the public respond in the aggregate? As the epigraph to the paper suggests, and because economic experts occupy increasingly prominent roles in the American media, this is a question of importance to contemporary politics. Our findings do not fit neatly within a simple "responsiveness" or "no responsiveness" framework. Drawing on dual-process models of political judgment, we instead posit and find issue-based heterogeneity in both aggregate opinion change and motivated resistance to expert opinion. Specifically, we find that public opinion is more responsive to consensus information in the aggregate when issues are technical (e.g., the gold standard), and less responsive when issues are symbolic and politically salient (e.g., immigration).

A substantial portion of the gap in responsiveness across all examined issues is due to differences across issues in the percentage of respondents who possess prior opinions, as "uncertain" respondents are more likely than disagreeing respondents to move toward the consensus when provided information about that consensus. Importantly, however, we also find issue-based heterogeneity in the motivated use of trust judgments. For symbolic issues, we find that citizens who already agree with the consensus bolster their prior opinion by judging economic experts as trustworthy sources of information, while citizens that already disagree bolster their prior opinion by deeming experts untrustworthy. For technical issues, in contrast, we find no evidence of such asymmetric skepticism between citizens on the basis of their prior opinions. Indeed, trust in economic experts increased both for agreeing *and* disagreeing respondents after receiving information about the consensus. These results are important, because they demonstrate that the technical issues are not merely different with respect to the percentage of "uncertain" citizens, but also differ with respect to the psychological mechanisms engaged in the process of opinion formation.

These points suggest the need for individuals or groups wishing to use consensus information to think strategically about message timing and framing. With respect to timing, the dissemination of such information will be more effective before elite partisans take visible positions on a given issue. The more partisan discourse surrounding an issue, and the more focus given to it in the media, the more likely it is that citizens will come to view the issue through a symbolic lens (Pollock, Lilie and Vittes 1993), and thus the less likely they will be to assimilate consensus information in an unbiased manner (Druckman et al. 2013; Lodge and Taber 2013). There may be windows of opportunity within which experts may persuade, and thus a need exists to be proactive. Too often, perhaps, it is only *after* an issue becomes politically salient that

experts weigh in with their own perspectives. With respect to framing, it may be possible to increase aggregate opinion change by highlighting the technical aspects of an issue at the expense of the symbolic aspects, thus increasing the salience of citizens' lack of domain-specific knowledge. Citizens do care about the extent to which their opinions fit the facts (see Druckman 2012; e.g., Groenendyk 2013; Lavine et al. 2012), and thus the potential exists for frames to drive a wedge between the often competing motivations of belief perseverance and justifiability. More research is needed within the framing literature to examine this possibility (but see Fernbach et al. 2013).

Our paper also extends research on responsiveness to scientific consensus to the economic domain. Despite the importance of economic policy, this literature has largely neglected economic issues in favor of the environment and public health. Moreover, despite the stereotype of a strongly divided economics profession, there is much on which economists agree, and these points of convergence tend to be in conflict with prevailing public opinion (e.g., Caplan 2007; Sapienza and Zingales 2013). Importantly, notwithstanding the points raised above, we offer a potentially more optimistic set of conclusions than previous work. In this important policy domain, we find substantial responsiveness to expert consensus on two issues, and meaningful levels of responsiveness on at least three of the five issues examined (with a fourth approaching a statistically significant change of similar magnitude). While issue heterogeneity is of theoretical and practical interest, one could read our results more simply as a demonstration of the ability of economic experts to move public opinion on average. While some issues may be beyond such influence due to their exceptionally politicized nature (e.g., immigration), the aggregate distribution of opinion on issues over which partisans are divided may often be up for grabs, even if there *are* a core set of individuals who reject the consensus as

informative on the basis of their prior disagreement. In this way, it is important not to overestimate the reach of motivated reasoning in mass politics by forgetting about the substantial proportion of citizens who are not emotionally invested in politics.

While we believe our experimental design is strong in its simplicity and use of real information with no deception, it is possible that the responsiveness to consensus information we observe is due to a demand effect. That is, it is possible that our consensus cue conditions created a context in which respondents felt pressure to respond consistently with the consensus information, either because such responses are generally considered normative, or because respondents wished to conform to what they perceived as the experimenters' theoretical expectations. We cannot rule out this possibility, but we offer arguments in favor of our design.

First, if respondents do feel pressure to conform to expert consensus, this is itself a result of substantial interest, and not merely an experimental artifact, because it suggests that these effects would not be limited to the laboratory. Second, prior research has found substantial *resistance* to consensus information in experimental contexts, and it is not clear why respondents in our study would feel particularly pressured to conform to the desires of the researchers relative to prior studies. Third, we find heterogeneity in responsiveness across issues, and this variation conforms to theoretical expectations. It would be odd if demand effects operated on responsiveness heterogeneously in just the way predicted by our theory. Finally, we provide substantial evidence for motivated skepticism on symbolic issues, which is exactly opposite what would be expected if demand effects were very prevalent in our data.

Our study is an initial investigation into a topic of growing importance, and the literature on the role of experts in shaping public opinion should be extended to the economic domain. A number of questions beyond the present study are of substantial interest: how much attention do

citizens actually pay to economic experts in political media? Do citizens show tendencies to listen more to economic experts that share their ideological leanings? Do they *perceive* ideological differences at all? Are there specific figures in the public arena that have disproportionate influence? How does the public understand economic expertise—are there differences between responsiveness to *economists* relative to public commentators that possess or claim to possess expertise on economic policy? Can we detect the influence of such economic experts in aggregate public opinion data? How do experts shape the discourse of partisan elites and media figures? Our results suggest that the investigation of such questions is a worthwhile endeavor.

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