Do attitudes towards policy changes depend on beliefs about policy levels?

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1 Overview

In theory, voter attitudes towards policy *changes* (e.g., whether to increase the minimum wage) ought to depend on their beliefs about the *level* of the relevant policy variable. To illustrate, consider Meltzer and Richard's (1981) influential model of redistribution under political competition. In that model, each voter has an ideal tax rate, which depends both on their individual productivity as well as the deadweight loss of taxation. As a result, whether a voter would like taxes to be higher or lower depends on whether they believe that the *actual* tax rate exceeds their *desired* tax rate. Similar remarks apply to any model in which voters have stable, well-defined preferences over policy levels.

In practice, however, one may doubt whether voter attitudes towards changes are as responsive to policy levels as simple models may suggest. First, determining optimal levels is cognitively taxing: even a trained economist may struggle to decide the rate at which marginal income should be taxed at a particular income level, or the level at which the minimum wage ought to be set. Second, although voters often do have strong beliefs about how policy ought to be changed, one can think of reasons why these might be rather disconnected from beliefs about the underlying policy reality. For example, if an individual is eager to signal their nationalistic credentials, they may demand that the number of immigrants be reduced — and may continue to demand this almost regardless of what the current level of migration happens to be.

This all raises a simple question: do attitudes towards policy changes depend on beliefs about policy levels? For example, does changing perceptions about the number of refugees alter support for changing migration; does changing perceptions about marginal tax rates alter support for tax cuts; and does altering perceptions about current levels of unemployment benefits influence support for increasing such benefits? In this project, I plan to answer such questions using the relatively new tool of information provision experiments (see Haaland, Roth, and Wohlfart, 2023 for discussion). Such experiments generate exogenous variation in beliefs through randomised information provision, which can then be used (as an instrument) to identify the impact of such beliefs on political attitudes.

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2 Experimental design

Structure. Experimental subjects will be randomly allocated into 1 of 3 treatment groups: the information provision treatment (roughly 50% of participants), the qualitative treatment (roughly 25% of participants) and a control group (the remainder). The information provision treatment studies the main question of the paper, namely whether changing beliefs about policy levels affects attitudes towards policy changes. The qualitative treatment benchmarks these results by studying the extent to which policy attitudes can be influenced by more qualitative information. Finally, the control group directly elicits participants' 'ideal points' (i.e. preferences over policy levels) to see if these are consistent with the results obtained from the information provision treatment.

Sample. The experiment will be conducted online using the Prolific platform. I will restrict the sample to UK residents with a Prolific approval rate of at least 99%; respondents will be representative of the population in terms of gender and age. In total, I will recruit $n = 5000$ respondents, which means that roughly 2500 respondents will participate in the main experiment. This in turn implies that roughly 1250 respondents will participate in each treatment arm, which exceeds the 700 minimum recommended by Haaland et al. (2023).

Topics. I will study beliefs about and attitudes towards the following topics:

1. The National Living Wage
2. The top marginal tax rate on income
3. The number of refugees that are accepted per year
4. The level of unemployment benefits

I have selected the third topic because it is currently very salient within British political discourse, as documented by YouGov surveys. I have selected the remaining topics since they are naturally quantitative policies (in the sense that they are parameterised by certain numbers) and of general interest to economists.

Information manipulation. As mentioned above, half of the participants will be channelled into the information manipulation treatment (the main experiment). In this treatment, participants will be asked about each of the four policy topics in a random order. For every topic:

1. Beliefs will be randomly shocked. Specifically, half of respondents will be randomly selected to receive a low signal and the remaining half randomly selected to receive a high signal. The signals have been carefully chosen so that they manage to systematically shift beliefs while remaining truthful, as in Akesson, Hahn, Metcalfe, and Rasooly (2022) (see below).

2. Beliefs about policy levels will then be elicited, e.g. 'What do you think that

the UK's National Living Wage is right now (in pounds per hour)?' Subjects are told that they will have a larger chance of winning a bonus if their answer is roughly correct. In addition to measuring beliefs about policy levels, I will also measure confidence in these beliefs (using a five-point scale).

3. Attitudes towards policy change will then be measured. Specifically, participants are asked whether they would like to increase the 'policy level' (e.g. the minimum wage), decrease the policy level, or for it to remain the same. Participants will also be asked for their confidence in these beliefs.

At the end of the survey, I will ask participants for some basic demographic information. Specifically, I will ask about their: age, gender, country of residence (England, Scotland, Wales or Northern Ireland), highest level of education, employment status, average monthly post-tax income, views towards economic policy (left-wing, centrist, right-wing), whether they voted in the 2019 election, and (if so) which party they supported. I will also ask respondents if both of their parents were born in the UK.

As mentioned above (see point 1), beliefs will be randomly shocked using a series of 'signals'. Specifically, participants will be given a 'hint' that the true answer lies in a certain interval. While the answer does invariably lie in this interval, the intervals have been chosen to systematically alter subject beliefs. The intervals are as follows:

1. Living wage: £5/hour to £11/hour *vs* £10/hour to £20/hour.

2. Taxes: 10% to 50% *vs* 40% to 90%.

3. Refugees: 400 to 40,000 *vs* 30,000 to 3,000,000.

4. Benefits: £10/week to £90/week *vs* £80/week to £800/week.

As discussed in the next section, the point of these signals is to generate exogenous variation in beliefs about policy levels; which in turn allows one to study how these beliefs about policy levels influence attitudes towards policy changes.

Control group. Participants in the control group will also be asked about the topics, again in random order. For each topic:

1. Prior beliefs about policy levels will be measured (in an incentivised way, as before). As usual, I will also measure confidence in these beliefs.

2. Preferences over policy levels will be elicited, e.g. 'What do you think that the National Living Wage *should* be (in pounds per hour)?' I will also measure how confident subjects are in these attitudes.

One use of the control group is to provide information on prior beliefs and their accuracy. More importantly, the control group also allows one to estimate what the results of information provision should be under the assumption that all individuals have well defined, stable preferences over policy levels (see below).

Qualitative treatment. As mentioned above, the purpose of this treatment is to

benchmark my results by investigating the impact of more qualitative information. As usual, participants will be asked about each of the topics in randomised order. For each topic:

1. Half of the participants will be given a qualitative argument in favour of a policy (see below), and the other half will not.

2. Participant attitudes towards policy changes will then be measured. As usual, I will also measure how confident subjects are in these attitudes.

The 'qualitative' arguments aim to push respondents' attitudes in a particular direction without attempting to resolve the more difficult (and quantitative) question of what the optimal level of each policy should be. Often, these arguments are drawn from basic economic theory. The full list of qualitative arguments is below:

1. Some economists argue that, although minimum wages are intended to help working people, they can actually harm them by destroying their jobs.

   Their logic can be illustrated with a simple example:

   - Suppose that an employee generates £5 of revenue for every hour that they work.

   - Suppose that a minimum wage is introduced which forbids them from working for less than £10/hour.

   - Since the minimum cost of hiring the employee (£10/hour) now exceeds the amount of revenue that the employee generates (£5/hour), it is now in the firm's interests to fire the employee.

   More generally, these economists argue that a sufficiently high minimum wage will not just destroy jobs but also prevent firms from posting job vacancies in the first place.

2. If we were to raise taxes on those who earn above £130,000/year, some very rich individuals might need to make some small sacrifices. For example, they might need to buy less expensive wines, or to take fewer exotic holidays.

   However, the money raised by these tax increases could be used to help people who are truly struggling and unable to pay for basic necessities like food or rent. This suggests that the benefits of raising taxes on the very rich greatly exceed the costs.

3. There is currently no legal way for the overwhelming majority of asylum seekers to claim refugee status in the UK.

   For example, a gay person trying to escape persecution in Uganda, a person trying to escape civil war in Syria, and a Christian convert trying to escape religious persecution in Pakistan have no way to legally enter the UK for the purposes of making an asylum claim.

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For this reason, the only way for such people to apply for asylum is to first enter the UK illegally, which usually requires making a dangerous crossing of the Channel by boat.

4. Unemployment benefits encourage people not to work: after all, these benefits are stopped (or reduced) the moment that a person starts working.

   For this reason, cutting unemployment benefits would encourage some unemployed individuals to return to the workplace.

Survey link. The exact wording of the questions can be viewed here.

3 Analysis plan

Dropping participants. As a preliminary, I will (provisionally) drop participants whose answers suggest that they have paid insufficient attention to the survey. More specifically, I will drop all participants who provide at least two 'very implausible' answers, which are defined as follows:

1. Living wage: £0/hour or at least £50/hour

2. Taxes: 0% or 100%

3. Refugees: 5,000,000 or more

4. Benefits: £0/week or at least £2,000/week

In addition, I will (provisionally) drop participants in the information provision treatment who ignore at least two of the hints.

Finally, I will drop any participants who fail to complete the survey.

Accuracy of beliefs. I will then study how accurate subject beliefs are about the levels of the various policy variables by examining data from the control group. For every policy variable, I will:

1. Plot the distribution of subject beliefs and test the null hypothesis that this distribution's mean is equal to the true value (using a t-test).

2. Compute the average error, defined as the average absolute difference between a subject's belief and the true value.

3. Compute the share who overestimate the true value, and the share who underestimate the true value.

In addition to studying the accuracy of subject beliefs, I will study what predicts subject beliefs and what predicts belief accuracy. To study what predicts subject beliefs, I will regress subject beliefs on all demographic variables collected (all categorical variables will first be converted into dummy variables that track the respective categories). As usual, this will be done separately for each policy area. To study what

predicts belief accuracy, I will regress the absolute difference between a subject's belief and the true value (a measure of accuracy) on these same demographic variables.

The impact of information on beliefs. As a first step towards the main analysis, I will study how beliefs differ across the treatment groups in the main experiment. For each policy variable, I will:

1. Plot the distributions of beliefs in the high and low signal groups.

2. Regress beliefs on a dummy indicating treatment assignment; this checks whether the 'relevance condition' is satisfied in the instrumental variables analysis below.

The impact of beliefs on attitudes. To study whether beliefs about policy levels alter attitudes towards policy changes, I will use instrumental variables regression. For every policy area:

1. The instrument Z is treatment assignment, i.e. whether a subject is shown a high interval or low interval.

2. The explanatory variable of interest X is the belief about the relevant policy level.

3. The outcome of interest Y is the attitude towards the relevant policy change.

Recall that attitudes towards the policy change Y can take one of three possible values: subjects want to increase the policy level, decrease the policy level, or leave the policy level the same. To simplify the analysis, this variable will be converted into two binary variables which track whether the respondent wants to increase the policy level (the first binary variable) and whether the respondent wants to decrease the policy level (the second binary variable). For each policy area, I will run two separate regressions based on each of these binary variables.

In addition to these exercises, I will also investigate whether treatment assignment influences the confidence with which beliefs about policy levels are held. To do this, I will first convert confidence into a binary variable (which equals 1 if the respondent is quite or very confident) and then regress confidence on treatment assignment. As usual, this will be done separately for each policy area.

Interpretation. Next, I will study whether the impacts of treatment assignment on beliefs are consistent with the distribution of ideal policy levels as estimated from the control group. To see how this works, let I, L and H denote a generic ideal point, belief following the low signal, and belief following the high signal. If voters have stable, well defined preferences over levels, then the shares who want the policy variable to increase should be $\mathbb{P}(I > L)$ and $\mathbb{P}(I > H)$ in the low and high signal groups respectively. Thus, the difference across groups should be $\mathbb{P}(I > L) - \mathbb{P}(I > H)$. One can obtain an empirical estimate of this quantity using its sample counterpart,

namely

$$\frac{1}{nm} \sum_{i=1}^{n} \sum_{j=1}^{m} \mathbb{1}(I_i > L_j) - \frac{1}{nm'} \sum_{i=1}^{n} \sum_{j=1}^{m'} \mathbb{1}(I_i > H_j)$$

Here, n is the sample size of the control group, m is the sample size of the low signal group, m' is the sample size of the high signal group, and $\mathbb{1}$ is the indicator function. One can then compare this to the *actual* difference in attitudes observed between the high and low signal group $\hat{a}_l - \hat{a}_h$. More concretely, I will test the null hypothesis that these differences are the same by computing the difference in differences

$$\hat{d} \equiv \left(\frac{1}{nm} \sum_{i=1}^{n} \sum_{j=1}^{m} \mathbb{1}(I_i > L_j) - \frac{1}{nm'} \sum_{i=1}^{n} \sum_{j=1}^{m'} \mathbb{1}(I_i > H_j) \right) - (\hat{a}_l - \hat{a}_h)$$

I will compute the standard error of $\hat{d}$ using the bootstrap and test the null hypothesis $\hat{d} = 0$, i.e. that the observed treatment effect is exactly what one would expect given the distribution of preferences over levels.

Qualitative treatment. To benchmark my results, I will examine whether qualitative arguments can sway voter attitudes. To do this, I will compare the treatment group (who are presented with an argument) with the control group (who are not) in the qualitative treatment. As before, I will consider the measure of attitudes into two binary variables (leading to two comparisons per policy area). I will test the null hypothesis that qualitative information has no effect on average attitudes towards policy changes by regressing attitudes on treatment assignment.

Additional analyses. I will also conduct some additional analyses. First, I will examine whether ideal policy levels are 'anchored' on beliefs about actual policy levels. To do this, I will regress ideal levels on beliefs about actual levels using data from the control group; I will also plot the relationship between the two variables. Second, I will test whether individuals are more confident in their attitudes towards policy changes than in their attitudes towards policy levels. I will do this using a t-test after first converting confidence into a binary variable (as before).

Multiple test corrections. Given the large number of tests that I will conduct, I will conduct a multiple test correction. Specifically, I will report West-Young step-down adjusted p-values (Westfall, Young, and Wright, 1993). Since the different families of analysis are rather separate, I will calculate the adjusted p-values 'table by table' as in Cullen, Dobbie, and Hoffman (2023).

Robustness checks. I will run the following robustness checks:

1. First, I will repeat the instrumental variables analysis and analysis of the qualitative treatment after controlling for the demographic variables collected at the end of the survey. Although controlling for these variables is not necessary given the randomisation, it can increase power. I will not include stated atti-

tudes towards economic policy as a control since these could (conceivably) be influenced by the treatments and so endogenous.

2. Second, I will examine whether the results of the instrumental variables analysis are consistent with the (possibly biased) results from ordinary least squares. To do this, I will regress attitudes towards changes on beliefs about levels, again controlling for demographics. I will do this separately for each policy area and separately for each treatment group (using data from the main experiment).

3. Third, I repeat all main analyses after including the subjects who were dropped in the initial stage.

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