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Abstract

The overconfident, who do not actually earn what they think they can, may attribute such cognitive gap to the unfairness of the economy and become favorable of public redistribution when they realize their cognitive bias. We conducted an online survey experiment in the US, where the treatment emphasizing each respondent's self-perception on the income-ability gap is randomly assigned. We found that the treatment lowers overconfident respondents' perception on the fairness of the economy among both left-wing and right-wing people. However, it did not increase the support for reducing income inequality. Instead, this increased support for government intervention to correct the unequal society among the leftists with high trust in the US government.

JEL classification: D31; D72; H23; H24

Keywords: Preferences for redistribution, Overconfidence, Political ideology, Political distrust, Meritocracy

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1 Introduction

Enormous evidence has shown that people tend to be overconfidence about their ability (e.g., Moore and Healy, 2008).[1] For example, Svenson (1981) famously finds that 88% of the US respondents consider themselves to be safer than the median driver. The prevalence of the overconfident underlines the importance of understanding their political attitudes. This paper aims to understand how the political preferences of the overconfident, specifically those regarding equality, change when they realize a gap between their economic status and the self-evaluation of their ability.

Overconfident people do not actually earn what they think they can, implying that overconfident people may be informed of a gap between their economic status and the self-evaluation of their ability at some point in the course of their life. As they strongly hold a bias belief about their ability, they would not attribute this gap to their low ability. Instead, they would think that their economic status does not appropriately reflect their talent and effort, which implies that society is non-meritocratic and unfair. As such, overconfident people would attribute the income-ability gap to the unfairness of the economy, which is, in turn, expected to increase overconfident people's support for reducing income inequality. They may also change the preferred measures to correct social unfairness.[2] While several recent studies have emphasized the role of personal economic experiences as a determinant of the view on fairness and preferences for redistribution (e.g., Deffains et al., 2016; Fehr et al., 2020; Fehr and Vollmann, 2020; Ng and Semenov, 2019), the effect of realizing the income-ability gap has been understudied despite its prevalence. In particular, there is no evidence beyond lab experiments because manipulating the income-ability gap is hard beyond hypothetical situations in the labs.

We explore how the overconfident change their political preferences after realizing their income-ability gap in real economic environments by running an unique experiment. We conducted an online survey experiment in the US with roughly 2500 participants. At the

[1] Moore and Healy (2008) classify overconfidence into three categories. The first one is over-estimation, where people believe that their performance is better than what it actually is. The second one is over-placement, where people wrongly believe that their performance is better than others. The third one is to be overconfident about the precision of information, which is called over-precision. Our focus is on the first and second types of overconfidence. For the effect of the third type on political attitudes, see Ortoleva and Snowberg (2015).

[2] Another effect of overconfidence is over-placement of their income. Overconfident people might overestimate the relative location of their current incomes, which reduces the support for redistribution. This channel has been verified by various empirical studies (e.g., Buser et al., 2020; Cruces et al., 2013; Fernández-Albertos and Kuo, 2018), but it is not our focus.

beginning of the survey, respondents were asked to tell their income and self-evaluation on their ability, which gives us their self-perception of the income-ability gap. For a majority of the respondents, self-evaluation on their ability is higher than the location of their income, and they are coded as overconfident people. Then, respondents were randomly assigned to the treatment that emphasizes the income-ability gap constructed by their previous answers.[3]

The unique structure of our survey is that this treatment is customized for each respondent. For example, consider respondents who chose "very high ability" as the self-evaluation of ability and chose "low" as the relative location of their household income. On the one hand, half of these respondents were randomly assigned to the treatment question, which reminds them that their income is low in spite of their very high ability. On the other hand, the other half of these respondents were assigned to the control where no such question was given. By exploiting this feature of our survey design, we explore the causal effect of realizing the income-ability gap on preferences for reducing inequality.

We obtained two main results. The first result is regarding the effect on the perceived degree of unfairness. We found that realizing the income-ability gap makes overconfident people think that ordinary people earn incomes lower than their ability. That is, overconfident people attribute the income-ability gap not to the low ability but to the unfairness of the economy. We obtained this effect for both left-wing and right-wing people.

The second result is regarding preferences for reducing income inequality. As a result of the aforementioned effect on the view about the unfairness of the economy, realizing the income-ability gap might be hypothesized to increase the overconfident people's support for income equality. In contrast, we do not find that realizing the income ability gap enhances the support for reducing inequality. Instead, we uncovered that the preferred measure to address the social unfairness changed. We found that it increases the support for the government's intervention to reduce inequality among those who are left-wing and has high political trust level. We think this result is reasonable as only those with the trust in governments might count on public interventions in tackling the unfairness of the social structure. This result suggests the importance of political trust, which is consistent with the existing empirical findings that lower political trust reduces the support for redistribution (e.g., Kuziemko et al., 2015; Rudolph and Evans, 2005).

[3]Respondents evaluate their income position based on the information of the real income distribution in the US. Thus, their self-evaluation of income-position is not subjective though the one of their ability is subjective.

Overall, the results indicate that after realizing the income-ability gap, overconfident people are more likely to think that the society is unfair, but it does not necessarily increase the support for reducing income inequality. However, it might change the desired measure to reduce inequality, depending on the political stance and trust.

Related literature: Whether causes of inequality are meritocratic or not significantly affects preferences for reducing inequality (e.g., Alesina and Angeletos, 2005; Alesina and La Ferrara, 2005; Krawczyk, 2010; McCoy and Major, 2007). Given this fact, it is important to explore under what conditions people change their understanding of the meritocratic or non-meritocratic causes of inequality. As a determinant of beliefs on the causes of inequality, several recent studies have emphasized individual economic experiences such as individual economic success and failure (e.g., Deffains et al., 2016; Fehr et al., 2020; Fehr and Vollmann, 2020; Ng and Semenov, 2019). We contribute to this strand of the literature by showing the novel interplay between overconfidence and the individual income-ability gap.

The most related study is Ng and Semenov (2019), who also analyze the role of overconfidence.[4] Specifically, they conducted a lab experiment where participants were randomly assigned income based on task performance and chance, but how much income depends on task performance is uncertain. Overconfident participants overestimate their task performance, and thus after receiving low income, they think that economic system in the lab is not based on task performance. Consequently, overconfident participants choose less redistribution when they experience failure. The novelty of our study is to test the theory not in an artificial context of lab experiments but in a real economic environment by using respondents' real incomes. Our results differ from Ng and Semenov (2019) in two important ways. First, we did not find the evidence that realizing the income-ability gap promotes the support for reducing inequality. Instead, we find the heterogeneous impact on the preferred mode of correcting social unfairness depending on political ideology and political trust level, both of which do not play important roles in abstract lab experiments.[5]

[4]Another related work is Fehr and Vollmann (2020), which conducted an incentivized experiment where the success of each one's effort task is randomly determined. They analyzed how economic success changes view on the role of effort in the task and preferences for redistributing the reward of the task across subjects. In the analysis, they considered potential heterogeneous effects in terms of political ideology and found that political ideology does not play a role. Since they considered redistribution of the reward in the effort task, they did not identify preferences for redistribution in a real economic context.

[5]Our potential avenue for partially reconciling our results with Ng and Semenov (2019) is to note that Ng and Semenov (2019) conducted their experiments using undergraduate students of Brown University as subjects. So long as these students tend to be left-wing and exhibit higher trust in governments (Hastie 2007), our results are in line with their findings.

2 Theoretical Framework

2.1 Hypothesis

To fix the idea, let us consider the following simple theoretical framework.[6] Suppose that individual i's income is $y_i \in \{y_H, y_L\}$ where $y_H > y_L$, and her ability is given by $a_i \in \{a_H, a_L\}$ where $a_H > a_L$.[7] The economic environment determines how income depends on ability, but whether the economic environment is meritocratic is uncertain. Let the economic environment be $\theta \in \{G, B\}$. When $\theta = G$, economy is meritocratic so that one gets income commensurate with ability; that is,

$$\Pr(y_i = y_H | a_i = a_H) = \Pr(y_i = y_L | a_i = a_L) = p > 0.5.$$

In this case, the economy is referred to be fair. On the other hand, when $\theta = B$, economy is non-meritocratic so that income has nothing to do with ability; that is,

$$\Pr(y_i = y_H | a_i = a_H) = \Pr(y_i = y_L | a_i = a_L) = 0.5.$$

In this case, the economy is referred to be unfair. The prior probability of θ being G is $q \in (0, 1)$.

Now suppose that person i believes that $a_i = a_H$, but $y_i = y_L$. Then, once the individual realizes the gap between income and ability, she updates the belief on the fairness of the economy as follows:

$$\Pr(\theta = G | a_i > y_i) = \frac{q(1-p)}{q(1-p) + (1-q)0.5},$$

which is lower than the prior q because $p > 0.5$. Since individual i believes that her ability is high, she attributes the income-ability gap to the unfairness of economy. As a result, realizing the income-ability gap lowers the perceived degree of fairness of the economy.

This simple theoretical framework yields the following hypothesis:

Hypothesis 1. *Suppose that one believes that her ability is high, but her income is low. Realizing this income-ability gap makes her think that ordinary people do not get income commensurate with their ability. That is, realizing the income-ability gap increases the perceived degree of the unfairness of the economy.*

[6] We consider a binary outcome, but our argument can be easily extended to a more general setting.

[7] This ability is not necessarily equivalent to innate talent because investing the own human capital improves one's ability from a dynamic perspective. It depends on effort as well as talent.

As shown in both theoretical and empirical studies, one's belief on whether the economy is fair (e.g., whether the society offers the equality of opportunity) determines her preference for income equality (e.g., Alesina and Angeletos, 2005; Alesina and La Ferrara, 2005; Krawczyk, 2010; McCoy and Major, 2007). In particular, the view that society is unfair (i.e., non-meritocratic) increases the support for reducing income inequality. In addition, it would be natural to expect that this increases the support for government intervention. Hence, as a direct consequence of Hypothesis 1, we obtain the following hypothesis:

Hypothesis 2. *Suppose that one believes that her ability is high, but her income is low. Realizing this income-ability gap increases the support for reducing income inequality. In addition, when realizing the income-ability gap, she demands for public intervention in reducing inequality as the private society would yield unfair outcomes.*

So far, the model does not incorporate each individual's political attitudes. However, in practice, political attitudes would matter. First, in general, conservatives attribute greater responsibility than liberals to an individual. Hence, the treatment might not increase the perceived degree of unfairness of economy among right-wing people. Furthermore, conservatives believe that governments' intervention is undesirable, whereas liberals are willing to invite governments' intervention as needed. Hence, the effect on preferences for government intervention is expected to be larger among left-wing people than among right-wing people. For example, Alesina et al. (2018) find that pessimistic information about social mobility increases the support for redistribution only among left-wing respondents. From this consideration, we obtain the following hypothesis:

Hypothesis 3. *Hypotheses 1 and 2 are more saliently applied to people with a left-wing ideology.*

Lastly, regarding the support for government intervention, another dimension of political attitudes is also important. Those with political distrust might oppose any type of government's involvement and seek other ways to address the unfairness. As a result, realizing the income-ability gap might increase the support for government intervention only for those tusting the government. Indeed, existing studies find that lower political trust reduces the support for redistribution (e.g., Kuziemko et al., 2015; Rudolph and Evans, 2005). Thus, we obtain the following hypothesis

Hypothesis 4. *The effect on the support for government intervention is salient only for those trusting the government.*

2.2 Discussion

Role of overconfidence: For our theory, the key is the presumption that individual i believes that her ability is high, but her income is low. When do people face this income-ability gap? The first possibility is that she wrongly believes that $a_i = a_H$ in spite of the low ability, which can be regarded as *overconfidence*. Such cognitive bias induces a large fraction of individuals to face the income-ability gap. The second possibility is that individual i correctly recognizes that her ability is a_H, but she happens to get a low income because ability and income are not perfectly aligned with each other in reality. Indeed, the high-ability individual can have y_L with probability $1 - p$ even if $\theta = G$ in our model.

While both possibilities exist, our data show that more than half of the respondents consider their ability is higher than their incomes. This widely observed income-ability gap is difficult to be explained without cognitive bias because the rational agents are, at least in the aggregate, unlikely to face the income-ability gap. Indeed, in our model, the probability of a rational agent facing the income-ability gap is less than 0.5. Hence, in the following analysis, we emphasize the first possibility, overconfidence, and refer to respondents who consider their income is lower than their ability as *overconfident* respondents.

Having said this, it is important to note that sources of the income-ability gap (i.e., whether it comes from cognitive bias or not) do not matter for our hypothesis and the following analysis.

Updating the belief on ability: Our model implicitly assumes away the belief updating on ability by positing that the overconfident people have a hard-wired belief that their ability is high. Arguably, they might be actually unsure of their ability and update their belief on their ability after realizing the income-ability gap.[8] We, however, believe that our setting, where individual i never updates the belief about a_i, reasonably approximates the reality. Various empirical researches reveal self-serving bias that people attribute positive events to their own character but attribute negative events to outside factors for negative events (e.g., Mezulis et al., 2004). Given this cognitive bias, it is reasonable to assume that the belief about a_i is not updated. Reassuringly, we found no statistically significant impact of our intervention on the belief about her own ability.

[8]Formally, $\Pr(a_i = a_H) = 1$ induces no Bayes updating on the ability after realizing the income-ability gap, while $\Pr(a_i = a_H) < 1$ induces the updating.

3 Experimental Design

Our online survey experiment was implemented in December 2020.[9] The survey had the following structure. At the beginning of the survey, respondents were asked to answer (i) questions on demographics and political attitudes and (ii) questions on income and ability. Then, they were randomly assigned to (iii) the treatment question. After that, they were asked to answer (iv) questions on views on inequality and redistribution. Respondents were forced to answer all the questions. The experiment was conducted using Qualtrics survey software.

3.1 Data Collection

The survey was openly posted on Amazon Mechanical Turk (MTurk) with a description stating that the survey paid $1.50 for approximately 8 minutes. To ensure the quality of the survey respondents, we took several attempts.[10] First, we had Amazon show the survey only to workers who had US addresses to exclude foreign workers. Second, to exclude robots, only workers with a past completion rate of at least 85 percent were allowed to take the survey. Third, to exclude any unexpected cheating, respondents could not receive payment unless they use a password visible only at completion.

To implement large-scale online survey experiments, various studies in psychology and political science have used MTurk. Recent studies in economics have also used this platform (e.g., Kuziemko et al., 2015). While MTurk participants are not nationally representative samples, they are demographically diverse (e.g., Buhrmester et al., 2011)[11] and existing studies have indicated that results obtained in MTurk are similar with those of representative samples (e.g., Mullinix et al., 2015; Snowberg and Yariv, 2020).

3.2 Substantiating the Income-Ability Gap

To construct each respondent's self-perception of the income-ability gap, at the beginning of the survey, all the respondents were asked to answer the questions on the relative location of their incomes and their ability.

[9] Our survey was started on December 19, 2020.

[10] These are the standard ways to ensure the quality of surveys using MTurk (e.g., Kuziemko et al., 2015).

[11] Moss et al. (2020) report that COVID-19 pandemics do not change the demographics of participants of this platform much: race, income, and gender of people on MTurk have remained constant.

First, we presented the table of the US income distribution. Based on this table, respondents were asked to answer the relative location of their household incomes by a 7-point scale from "very high" (top 15 %) to "very low" (bottom 15%). As the literature has shown, overconfident people tend to overestimate the relative location of their household incomes (e.g., Cruces et al., 2013; Fernández-Albertos and Kuo, 2018). Since our interest is not in this channel, we need to exclude it. For this purpose, in the question, the true income redistribution was provided, which made respondents realize the correct location of their incomes.

Second, we asked respondents to evaluate the relative location of their ability by a 7 point-scale from "very high" (top 15%) to "very low" (bottom 15%).

From these two questions, we construct each respondent's income-ability gap. If the self-evaluation on ability is higher than the income location, a respondent is coded as being *overconfident*.

The choice of using the raw household income as a measure of the wealthiness may induce misclassification. First, since the household income tends to increase with the household size, this coding might disproportionally code small households as "overconfident." Second, the household income depends on a respondent's ability as well as other family members' ability. Having said this, note that the aim of this paper is to understand how the overconfident people might change their political views when they realize their biased belief about their ability.[12] So long as our experiment succeeds in creating the situation in which people face the information that their ability might be worse than what they think, our experiment is resembling the situation of interest and the misclassification is irrelevant for our purpose. Therefore, despite the risk of misclassification, we view that our experiment sheds a light on the behavior of the overconfident people in a real society.

3.3 Treatment: Realizing the Income-Ability Gap

Respondents were randomly assigned to the treatment question. The aim of this treatment is to emphasize the income-ability gap. To this end, this question is customized for each respondent depending on her self-perception of the income-ability gap.

Suppose that a respondent chose "low" as the relative location of her household income, whereas she chose "very high" as the self-evaluation of her ability. This implies that her

[12] Arguably, although theoretically transparent and widely adopted, measuring the elusive concept "ability" is quite difficult in practice. Recognizing that any measure can entail its own issues, we adopt the raw household income as the wealthiness measure by virtue of its simplicity.

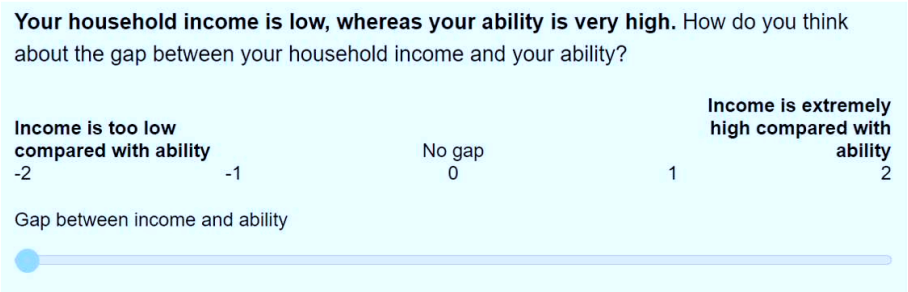

Figure 1: Treatment

income is much lower than the self-evaluation of her ability. However, she might not realize this income-ability gap. As in Figure 1, our treatment question is designed to make the respondent realize the income-ability gap based on their answers to the previous questions.

In this question, first, the respondent was told that their income is low, whereas their ability is very high. The provided information is customized depending on the answers to the previous questions on income and ability. However, solely providing this information might not be enough because respondents might skip the information without serious reading. To prevent this, we asked the respondent to evaluate her income-ability gap based on the provided information by a 5-point scale. As such, for the overconfident, the treatment works as a stimulus reminding that what they actually earn is lower than what they think they can earn.

3.4 Main Outcomes

We explore the effect of the treatment on views on inequality and preferences for reducing inequality. For this purpose, we use answers to the following questions as our main outcomes.

Unfairness of economy: When society is meritocratic, economic status should be based on ability (i.e., talent and effort). If not, society is non-meritocratic and unfair. Based on this view, we asked respondents to answer whether the incomes of ordinary people in the US are higher than, equal to, or lower than their abilities. The answer to this question is used as the perception of the unfairness of the economy.

Preferences for reducing income inequality: We asked the following two questions. The first question is about whether to reduce income inequality in general. In particular, respondents

were asked to answer whether the US society should reduce income inequality by a 4-point scale from "strongly disagree" to "strongly agree".

Since there are various ways to reduce income inequality, it is not necessarily the case that the support for reducing inequality leads to the support for governments' intervention. The second question is, therefore, designed to ask the support for governments' intervention. In particular, respondents were asked to answer whether "the task for reducing income inequality should be delegated to the US government" or "the US government cannot be entrusted with the task for reducing income inequality."

4 Data

2,714 individuals accessed the survey, and 2520 individuals completed it (the attrition rate is 7.15%). We excluded samples completing the survey in a too short time (107 seconds or less) or too long time (1322 seconds or more). This corresponds to dropping samples with the completion time below the 1st percentile or above 99th percentile of the distribution of the completion time. The number of the remaining respondents is 2469.

Table 1 demonstrates the data of income-ability gap. According to the data, 1385 respondents considered their abilities higher than their incomes, which consists of more than a half of all the respondents. This result indicates that a majority of our respondents are apparently overconfident. While our survey is not based on representative samples of the US, this descriptive statics provides interesting insight into how the US people consider the income-ability gap.

The presence of apparent overconfidence can be also seen from another perspective. The existing literature on overconfidence has shown that a majority of people tend to rank themselves as better than average in various skills such as driving skills (e.g., Svenson 1981). We find the same pattern for earning abilities. Figure 2 reports the marginal distributions of income and ability for each of the full-sample and the overconfident sample. As seen there, the income distribution for the full-sample is close to be symmetric and only 870 respondents earn incomes higher than the average. Nonetheless, the distribution of the self-perception of ability is skewed toward the right for the full-sample. Indeed, the number of respondents who considered their ability is higher than the average is 1460, which again consists of a majority of our respondents.

In sum, our data indicate that a majority of respondents are apparently overconfident.

While it does not necessarily come from cognitive bias, as discussed in Section 2.2, this widespread overconfidence is difficult to be explained without cognitive bias.[13] Given this wide existence of apparent overconfidence, from now on, we will exclusively focus on overconfident respondents who considered their abilities higher than their incomes.

The characteristics of overconfident respondents are reported in Table 2. For the characteristics of the full-sample, see Table A.1 at Appendix. Interestingly, the overconfident sample seems comparable to the full-sample in various aspects such as gender, age, race, education, living areas, and political attitudes. The experimental literature of both psychology and economics has shown that men are more likely to be overconfident than women in terms of their task performance (e.g., Deaux and Farris, 1977; Niederle and Vesterlund, 2007). Contrary to these previous findings, we do not find such evidence regarding the self-evaluation of the earning ability.

Differences exist only in their income levels and their marital status. Overconfident respondents tend to earn less and they are less likely to be married. These two differences are likely to come from not cognitive bias but simply our classification strategy of the overconfident sample. By construction of the income-ability gap, higher-income earners are less likely to be classified as overconfident people. In addition, since we asked the household income, the married one's income level tends to be higher than singles. These two natures of our income-ability gap create such differences. However, as discussed in Section 3.2, these issues would not be essential for our purpose.

5 Results

5.1 Views on the Unfairness of Economy

How does realizing the income-ability gap affect the views on the unfairness of the economy? As stated in Hypothesis 3, the effect can be heterogeneous depending on political ideologies. To account for this potential heterogeneity, before the treatment assignment, we asked respondents about their political orientation ranging from "far right" to "far left" on a 5-point scale. Respondents who indicated that they are either "far right" or "moderately right" (resp.

[13]The literature has demonstrated that a majority of people rank themselves as better than average, and has interpreted it as the evidence of cognitive bias. While this is the standard approach in the literature, Benoît and Dubra (2011) theoretically argue that this empirical pattern can be consistent with rational Bayesian updating, and thus might not be the evidence of cognitive bias. A recent study by Jin and Okui (2020) empirically test Svenson (1981)'s data by using the framework of Benoît and Dubra (2011) and find that his data cannot be explained by rational Bayesian updating.

Income	Ability						
	very high	high	relatively high	average	relatively low	low	very low
very high	58	47	19	15	0	2	0
high	27	98	89	41	5	1	0
relatively high	28	135	187	114	10	3	0
average	26	110	186	262	25	5	1
relatively low	22	70	122	157	28	21	6
low	19	45	77	120	27	22	7
very low	16	35	44	83	20	16	18

Notes: The overconfident people, who considered their abilities higher than their received incomes, are presented in shadowed cells.

Table 1: Income-ability gap

Figure 2: Income distribution and distribution of respondents' self-assessment of their ability

	mean	sd	min	max	count
Treatment	0.48	0.500	0	1	1385
Age	40.62	13.304	18	83	1385
Female	0.48	0.500	0	1	1385
Urban	0.38	0.486	0	1	1385
Race: European American/White	0.76	0.429	0	1	1385
Race: African American/Black	0.10	0.296	0	1	1385
Race: Hispanic/Latino	0.06	0.235	0	1	1385
Race: Asian/Asian American	0.06	0.247	0	1	1385
Race: Other	0.02	0.148	0	1	1385
Married	0.46	0.498	0	1	1385
BA or more	0.61	0.489	0	1	1385
High income	0.21	0.406	0	1	1385
Left	0.46	0.499	0	1	1385
Right	0.30	0.458	0	1	1385
Government trust	0.32	0.467	0	1	1385
Observations	1385				

Table 2: Descriptive statistics of overconfident people

"far left" or "moderately left") are classified as being right-wing (resp. "left-wing"). We run an OLS regression including the interactions of political ideologies with the treatment (see Appendix A.2 for specific details).

The results are reported in the upper panel of Figure 3. Hypothesis 1 predicts that overconfident people attribute the individual income-ability gap to the unfairness of the economy. Consistent with this hypothesis, realizing the income-ability gap increases the perceived degree of unfairness of the economy by 7.2 percent for leftists and 10.2 percent for rightists. The effects are statistically significant at 0.05 level. This result suggests that both leftists and rightists might attribute the fact that they do not earn as much as what their ability to the unfairness of the society.

As we discussed in Hypothesis 3, rightists tend to attribute greater responsibility than leftists to an individual. However, we find that even the right-wing overconfident respondents attribute their income-ability gap to the unfairness of society. Note, however, that centrists exhibit the opposite response to what we expect: they rather decrease the perceived degree of the unfairness of the economy. While we do not have a reasonable explanation for this result, it highlights the heterogeneous effect of realizing the income-ability gap. Identifying the causes for this heterogeneity would be an interesting future study.

We summarize our finding on views about the unfairness of the economy as follows:

Figure 3: Results on main outcomes

Notes: The 95 % confidence intervals plotted are the treatment effects for each group of people, coming from the following regression equation $Outcome_i = (Treatment\ terms) + \beta Covariates_i + \epsilon_i$. The specific details of the specification can be found in the equation (A.1) in Section A.2. The outcome variables of the first and third panels are binary variables: coded as one if the respondent says "in the US society, ordinary people earn incomes that are lower than their abilities" and "the task for reducing income inequality should be delegated to the US government" respectively. The outcome variable of the second panel is a 4-point scale: 0="strongly disagree", 1="disagree", 2="agree", 3="strongly agree".

Result 1. *Consistent with Hypothesis 1, both leftists and rightists have a stronger belief that the economy is non-meritocratic and unfair after realizing their income-ability gap.*

5.2 Preferences for Reducing Income Inequality

We have seen that the view on the unfairness of the economy has changed by the treatment, but does this lead to preferences for reducing income inequality? Both leftists and rightists consider the economy is more unfair after realizing the income-ability gap. As a result, Hypothesis 2 predicts that they increase the support for reducing income inequality. In addition, Hypothesis 3 predicts that this effect is particularly salient for leftists.

The results are presented in the second and third panels of Figure 3. Interestingly, in spite of the large effect on the view of the unfairness of the economy, we do not find any significant effects on preferences for reducing income inequality. Both for leftists and rightists, the effect is close to zero. That is, on average, realizing the income-ability gap does not increase the support for reducing income inequality. However, we argue that this result might mask the important heterogeneity with respect to the trust in governments.

The role of trust in governments: As we discussed in Hypothesis 4, one potential cause for this seemingly zero effect is political distrust. The existing literature has shown that the presence of political distrust decreases the support for public spending and redistribution (e.g., Kuziemko et al., 2015; Rudolph and Evans, 2005).[14] If one has low trust level for the US government, she would not support government interventions even when realizing the necessity for reducing income inequality. Before the treatment assignment, we asked respondents about their trust in the US government ("How much of the time do you think you can trust the government in Washington to do what is right?").[15] To account for the effect of political distrust, we run an OLS regression including the interactions with the political trust level (see Appendix A.2 for details).

The results are presented in Figure 4. Consistent with Hypothesis 4, we find a clear effect on leftists' support for government interventions once accounting for the trust level. The

[14]While this is common view, the recent study by Peyton (2020) finds a possibility that political distrust does not reduce preferences for redistribution.

[15]This question is the most common measure of political trust, which has been used in the American National Election Studies (ANES). It is intended to capture not respondents' support for the current presidency but their support for political institutions. The literature has shown that Democrats more trust the government than Republicans do if the president is the Democrats, and vice versa. However, the relationship between partisan identification and trust is not perfect correlation (see Citrin and Stoker, 2018, Figure 4). The question, at least, partially captures political trust, not evaluation of the current office.

leftists who have high trust level for the US government increases the support for government interventions by 16.3 percent. This effect is statistically significant at 0.05 level. On the other hand, for the leftists who have low trust level, we find the opposite effect: realizing the income-ability gap rather decreases the support for government intervention. This effect is statistically significant at 0.1 level.

On the contrary, consistent with Hypothesis 3, the effect on right-wing respondents is close to zero even if we account for the government trust level. The effect on centrists is also close to zero regardless of the trust level. This null-effect for centrists is reassuring to our hypothesis because the pathological impact on the perceived unfairness (3) does not translate into the preferences for equality.

In summary, realizing the income-ability gap increases the perceived degree of the unfairness of the economy. While its effect on preferences for reducing income inequality is limited, people might still want to correct the unfairness of the society. We have hypothesized the trust in governments is necessary for justifying the government intervention to tackle the unfairness of the economy. Consistent with this, only the leftists who have political trust increase the support for government interventions. The following two results succinctly summarize our findings:

Result 2. *In contrast to Hypothesis 2, the overconfident do not strengthen their preferences for equality after realizing their income-ability gap.*

Result 3. *In line with Hypothesis 3 and 4 , after realizing the income-ability gap, the overconfident people who are left-wing and trust in the government become more in favor of the public intervention to correct inequality.*

5.3 Supplementary Results

We briefly discuss additional results. The details are available at Appendix.

Updating the belief on ability: As discussed in Section 2.2, respondents might attribute the income-ability gap to their lack of ability, inducing the update on the belief about their ability. This is not supported by our data. Both before and after the treatment, respondents were asked to answer about the self-evaluation of their own ability. We take the difference between the evaluations before and after the treatment, where a higher value represents the upward updating on ability. The result shows that the treatment has no significant effect. Combining

Figure 4: Effects of whether respondents trust their government

Notes: The 95 % confidence intervals plotted are the treatment effects for each group of people, coming from the following regression equation $Outcome_i = (Treatment\ terms) + \beta Covariates_i + \epsilon_i$. The specific details of the specification can be found in the equation (A.2) in Section A.2. The outcome variables of the first and third panels are binary variables: coded as one if the respondent says "in the US society, ordinary people earn incomes that are lower than their abilities" and "the task for reducing income inequality should be delegated to the US government" respectively. The outcome variable of the second panel is a 4-point scale: 0="strongly disagree", 1="disagree", 2="agree", 3="strongly agree". The respondent is coded as having government trust if the respondent says either "just about always" or "much of the time" for the question about political trust.

this with the effect on the view on unfairness strongly suggests that respondents attribute the income-ability gap to the unfairness of the economy, not to individual responsibilities.

Policies for reducing income inequality: There are various ways to reduce income inequality, which is not limited to income redistribution. To see if preferences over policy priorities change, we asked respondents about which of the following policies is the most prioritized action to reduce inequality: to redistribute income, to make people earn incomes commensurate with their abilities, and to help the poor improve their skills. While we do not find statistically significant effects, the point estimates indicate a sizable effect that leftists increase the support not for redistribution but for making people earn incomes commensurate with their abilities. That is, even if the support for government interventions increases, it does not necessarily imply the support for income redistribution through taxes and transfers.

6 Concluding Remarks

This study explored what happens to the political preferences of the overconfident people when they realize their income-ability gap. We highlighted the channel that the overconfidence may attribute the income-ability gap to the unfairness of the economy (i.e., the non-meritocratic aspect of the society), rather than correcting their belief on the ability. The enhanced perceived unfairness is hypothesized to increase the support for reducing inequality and the governments' interventions. We conducted a survey experiment in the US to test these hypotheses.

Our survey experiment that makes the overconfident realize the income-ability gap shows that the overconfident people, both rightists and lefties, attribute the gap to the unfairness of the economy. However, it does not lead to increased support for reducing income inequality. Instead, it induced the lefties with political trust to be more favorable of public interventions to correct the unequal society.

Overall, by realizing the income-ability gap, the overconfident do not strengthen their preferences for equality but change the desired way to address the social issues. As the overconfident take up a large population share in the US, this might have a real impact on the policies. Our results also illuminate the importance of heterogeneity according to political ideology and political trust in understanding people's preferences for redistribution, which has been highlighted in recent studies.

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A Online Appendix (Not for Publication)

A.1 Descriptive Statistics of Full-Sample

Descriptive statics of the full-sample is presented at Table A.1. Our sample is close to the typical sample obtained using MTurk (see Snowberg and Yariv, 2020, Online Appendix, Table A.1). Our sample is younger, more educated, more poor and has fewer minorities than the US representative sample.

A.2 Details on the Regression Specification

When we do not include the trust level for the government, the regression specification is

$$\begin{aligned} y_i = & \sum_{position=[left,right,center]} \tau_{position} T_i \times I(position_i = position) \\ & + \sum_{position=[left,right,center]} \alpha_{position} I(position_i = position) + \beta X_i + \epsilon_i. \end{aligned} \tag{A.1}$$

y_i is the outcome variable and T_i represents the treatment dummy. The coefficients of interest are $\tau_{position}$, describing the treatment effect for people with the corresponding political position. X_i includes controls: the income level, age, sex, race, whether a person lives in an urban area, marital status, and whether the person has completed the 4-years college or more. ϵ_i is the error term. We use the heteroskedasticity-robust standard errors.

We also leverage people's trust level on the government. For this purpose, we use the following regression specification:

$$\begin{aligned} y_i = & \sum_{trust=[yes,no]} \sum_{position=[left,right,center]} \tau_{position,trust} T_i \times I(position_i = position) \times I(trust_i = trust) \\ & + \sum_{trust=[yes,no]} \sum_{position=[left,right,center]} \alpha_{position,trust} I(position_i = position) \times I(trust_i = trust) \\ & + \beta X_i + \epsilon_i. \end{aligned} \tag{A.2}$$

Now $\tau_{position,trust}$ is the coefficient of interest, describing the treatment effect for people with the political position given by *position* and the government trust level given by *trust*. The remaining details are the same as the specification (A.1).

A.3 Additional Results

Regression results of our main outcomes: The regression results for Figure 3 and Figure 4 are reported in Table A.2.

	mean	sd	min	max	count
Treatment	0.50	0.500	0	1	2469
Age	40.55	12.831	18	96	2469
Female	0.47	0.499	0	1	2469
Urban	0.40	0.489	0	1	2469
Race: European American/White	0.76	0.426	0	1	2469
Race: African American/Black	0.09	0.281	0	1	2469
Race: Hispanic/Latino	0.06	0.229	0	1	2469
Race: Asian/Asian American	0.07	0.263	0	1	2469
Race: Other	0.02	0.141	0	1	2469
Married	0.57	0.495	0	1	2469
BA or more	0.68	0.466	0	1	2469
High income	0.37	0.483	0	1	2469
Left	0.42	0.494	0	1	2469
Right	0.31	0.462	0	1	2469
Government trust	0.38	0.486	0	1	2469
Observations	2469				

Table A.1: Descriptive statistics of full-sample

Updating the belief on ability: See Figure A.1. The regression table for this analysis is available upon request.

Policies for reducing income inequality: See Figure A.2. The regression table for this analysis is available upon request.

Income shock: Since the data of income distribution only in 2018 was available at the timing of the survey design, we asked the relative location of the household income in 2018 in constructing the income-ability gap. To see whether the income changed after 2018, we also asked the household income in 2019 (Q12 in the questionnaire). We matched this data with the respondents' answer on the relative location of the income in 2018 by a three-point scale (top 30%, top 30-70%, bottom 30%). Around 86% of the overconfident respondents chose the same location, which suggests that the household income did not change much across years. This also suggests that the quality of our data is high. When answering the relative location of the income, satisficers might incorrectly answer the relative location without seriously looking at the table of the income distribution. Our high matched rate indicates that at least more than 80 % of the respondents correctly answered the relative location of their income.

	Unfairness of Economy		Support for Reducing Inequality		Support for Government Intervention	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.0959^{+}	-0.155*	-0.0907	-0.182	0.00468	0.0498
	(0.0508)	(0.0648)	(0.0869)	(0.118)	(0.0545)	(0.0671)
Left	0.105*	0.0469	0.490***	0.487***	0.220***	0.295***
	(0.0441)	(0.0511)	(0.0707)	(0.0889)	(0.0460)	(0.0545)
Right	-0.232***	-0.380***	-0.530***	-0.767***	-0.0651	-0.140*
	(0.0470)	(0.0595)	(0.0880)	(0.114)	(0.0499)	(0.0585)
Treatment × Left	0.168**	0.214**	0.0949	0.227^{+}	-0.0195	-0.127
	(0.0623)	(0.0756)	(0.0998)	(0.129)	(0.0668)	(0.0806)
Treatment × Right	0.197**	0.298***	0.126	0.188	0.0184	-0.0274
	(0.0665)	(0.0886)	(0.124)	(0.167)	(0.0717)	(0.0854)
Government trust		-0.478***		-0.255*		0.183*
		(0.0633)		(0.126)		(0.0801)
Treatment × Government trust		0.168^{+}		0.255		-0.123
		(0.0894)		(0.167)		(0.114)
Government trust × Left		0.0632		-0.0751		-0.234*
		(0.0816)		(0.146)		(0.101)
Government trust × Right		0.408***		0.618***		0.176^{+}
		(0.0842)		(0.172)		(0.103)
Treatment × Government trust × Left		-0.0919		-0.400^{+}		0.363*
		(0.119)		(0.205)		(0.143)
Treatment × Government trust × Right		-0.276*		-0.193		0.120
		(0.121)		(0.240)		(0.147)
Age	0.00398***	0.00344***	-0.00260^{+}	-0.00182	-0.00156	-0.000713
	(0.000927)	(0.000903)	(0.00156)	(0.00154)	(0.000986)	(0.000972)
Female	0.0676**	0.0583*	-0.00329	-0.0177	0.0325	0.0292
	(0.0249)	(0.0238)	(0.0412)	(0.0406)	(0.0264)	(0.0259)
Race: African American/Black	-0.0523	-0.0596	0.0971	0.0839	-0.0163	-0.0295
	(0.0430)	(0.0409)	(0.0711)	(0.0686)	(0.0456)	(0.0451)
Race: Hispanic/Latino	-0.0462	-0.0587	0.00665	-0.00165	-0.0221	-0.0110
	(0.0511)	(0.0470)	(0.0829)	(0.0834)	(0.0561)	(0.0544)
Race: Asian/Asian American	-0.0505	-0.0555	0.137^{+}	0.153^{+}	0.0625	0.0726
	(0.0512)	(0.0504)	(0.0772)	(0.0778)	(0.0536)	(0.0526)
Race: Other	0.100	0.0545	0.142	0.111	0.0539	0.0744
	(0.0829)	(0.0790)	(0.137)	(0.141)	(0.0843)	(0.0794)
High income	-0.0116	-0.0334	-0.0979*	-0.104*	-0.00180	0.00223
	(0.0304)	(0.0278)	(0.0495)	(0.0474)	(0.0334)	(0.0326)
Urban	-0.0893***	-0.0507*	0.0745^{+}	0.0755^{+}	0.0428	0.0163
	(0.0252)	(0.0243)	(0.0424)	(0.0428)	(0.0280)	(0.0279)
Married	-0.189***	-0.0935***	-0.121**	-0.0818^{+}	0.0195	-0.0238
	(0.0266)	(0.0275)	(0.0458)	(0.0476)	(0.0281)	(0.0289)
BA or more	-0.126***	-0.0919***	0.0577	0.0398	0.0652*	0.0340
	(0.0269)	(0.0263)	(0.0455)	(0.0455)	(0.0283)	(0.0282)
Constant	0.510***	0.633***	2.145***	2.205***	0.408***	0.359***
	(0.0576)	(0.0595)	(0.101)	(0.111)	(0.0610)	(0.0649)
Observations	1385	1385	1385	1385	1385	1385

Notes: For each row, the coefficient and p-value are from regressions of the form assigned to $Outcome_i = \alpha + \beta Covariates_i + \epsilon_i$, where *Covariates* are listed to the left in the row. $^{+}$ Significant at the 10% level. * Significant at the 5% level. ** Significant at the 1% level. *** Significant at the 0.1% level.

Table A.2: Regression results for Figure 3 and Figure 4

Figure A.1: Respondents do not update the perception about their abilities

Notes: The 95 % confidence intervals plotted are the treatment effects for each group of people, coming from the following regression equation $Outcome_i = (Treatment\ terms) + \beta Covariates_i + \epsilon_i$. The specific details of the specification can be found in the equations (A.1) and (A.2) in Section A.2. The covariates are the same as those in Table A.2. Let p_1 be the self-evaluation of ability before the treatment and p_2 be that after the treatment. p_t is a 7-point scale: 0="very low", 2="low", 3="relatively low", 4="average", 5="relatively high", 6="high", and 7="very high". The outcome variable is defined by $p_2 - p_1$.

Figure A.2: Results about policy priorities

Notes: The 95 % confidence intervals plotted are the treatment effects for each group of people, coming from the following regression equation $Outcome_i = (Treatment\ terms) + \beta Covariates_i + \epsilon_i$. The specific details of the specification can be found in the equations (A.1) and (A.2) in Section A.2. The covariates are the same as those in Table A.2.

A.4 Questionnaire

1. What is your gender?
    - Male
    - Female
2. What is your age?
3. Please indicate your marital status
    - Single
    - Married
4. Do you have children living with you?
    - Yes
    - No
5. How would you describe your ethnicity/race?
    - European American/White
    - African American/Black
    - Hispanic/Latino
    - Asian/Asian American
    - Other
6. Were you born in the United States?
    - Yes
    - No
7. In which state do you live?
8. Which one of the following best describes the area of your home?
    - Urban
    - Suburban
    - Rural
9. Which category best describes your highest level of education?
    - Eighth Grade or less
    - Some High School
    - High School degree/ GED
    - Some College

- 2-year College Degree
- 4-year College Degree
- Master's Degree
- Doctoral Degree
- Professional Degree (JD, MD, MBA)

10. What is your current employment status?

    - Full-time employee
    - Part-time employee
    - Self-employed or small business owner
    - Unemployed and looking for work
    - Student
    - Not in labor force (for example: retired, or full-time parent)

11. How long have you worked for your current employer? **Choose the first item if you are currently not working.**

    - Less than one year.
    - 1-3 years.
    - 3-10 years.
    - More than ten years.

12. What was your TOTAL household income (before taxes and transfers) **last year**?

    Note. The household income includes your income as well as other household members' income.

    - $0 - $7,000
    - $7,001 - $15,000
    - $15,001 -$27,000
    - $27,001 - $39,000
    - $39,001 - $52,000
    - $52,001 - $67,000
    - $67,001 - $85,000
    - $85,001 - $107,000
    - $107,001 - $139,000
    - $139,001 - $197,000
    - $197,001 - $262,000
    - $262,001+

13. The following table shows the distribution of the US annual household income (before taxes and transfers) in 2018. Which of the following correctly describes your household **in 2018**?

	Annual Household Income
Top 15%	$ 161561
Top 30%	$ 107003
Top 45%	$ 75706
Top 55%	$ 59950
Top 70%	$ 39410
Top 85%	$ 21000

Source: 2019 Current Population Survey

Note. We ask your income in 2018 because the governmental statistics on the 2019 income have not yet been available.

- Very high: My household earned more than the top 15% household.
- High: My household earned more than the top 30% household, but less than the top 15household.
- Upper middle: My household earned more than the top 45% household, but less than the top 30% household.
- Middle: My household earned more than the top 55% household, but less than the top 45household.
- Lower middle: My household earned more than the top 70% household, but less than the top 55% household.
- Low: My household earned more than the top 85% household, but less than the top 70household.
- Very low: My household earned less than the top 85% household.

14. Who did you support in the presidential election in 2020? If you were not able to vote, just choose the person you wanted to win the election at that time.

- Donald Trump
- Joe Biden
- Other

15. Where do you see yourself in the political spectrum?

- Far left
- Moderately left
- Center
- Moderately right

- Far right

16. Are you registered to vote?

    - Yes
    - No

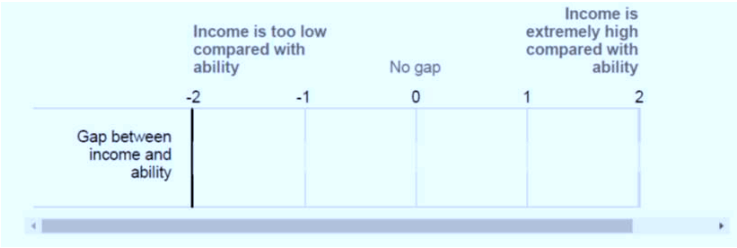
17. How much of the time do you think you can trust the government in Washington to do what is right?

    - Just about always
    - Most of the time
    - Only some of the time
    - Hardly ever

18. How do you think about your ability? Your ability is

    - Very high (in the top 0-14% among the US society)
    - High (in the top 15-29% among the US society)
    - Relatively high (in the top 30-44% among the US society)
    - Average (in the top 45-54% among the US society)
    - Relatively low (in the top 55-69% among the US society)
    - Low (in the top 70-84% among the US society)
    - Very low (in the top 85-100% among the US society)

19. **Your household income is (Answer in Q. 13), whereas your ability is (Answer in Q18)**. How do you think about the gap between your household income and your ability?



20. Which of the following better describes your idea?

    - In the US society, ordinary people earn incomes that are higher than their abilities.
    - In the US society, ordinary people earn incomes that are equal to their abilities.
    - In the US society, ordinary people earn incomes that are lower than their abilities.

21. Agree or Disagree: The US society is unequal.

    - Agree

- Disagree

22. Agree or Disagree: The US society should reduce income inequality.

    - Strongly agree
    - Agree
    - Disagree
    - Strongly disagree

23. When we need to reduce income inequality, what action should we take? Please choose the most prioritized action.

    - Redistribute income from the rich to the poor
    - Make people earn incomes commensurate with their abilities
    - Help the poor improve their skills

24. Agree or Disagree: Regardless of the party that heads the US government, the US governments **DO NOT** implement desirable actions to reduce income inequality.

    - Agree
    - Disagree

25. We will ask the respondents who chose "Agree" in the previous question. Why do you think that the US governments DO NOT implement desirable actions? Due to

    - The lack of the governments' will
    - The lack of the governments' competence
    - Both of them

26. Which of the following better describes your idea?

    - The task for reducing income inequality should be delegated to the US government.
    - The US government cannot be entrusted with the task for reducing income inequality.

27. Suppose you have to spend 1% of your earnings to help the poor. Which choice do you prefer?

    - Paying 1% of my earnings as a tax to the government.
    - Paying 1% of my earnings to private charities.

28. The US society should reduce income inequality because…

    - A. Wealth is concentrated on only a small fraction of people.
    - B. We need to help the poor.

- Both A and B.
- Choose this option if you disagree that the US society should reduce income inequality.

29. How do you think about your future income before the retirement age?

    - My future income will increase compared with the current income.
    - My future income will not change much.
    - My future income will decrease compared with the current income.

30. How do you think about your ability? Your ability is

    - Very high (in the top 0-14% among the US society)
    - High (in the top 15-29% among the US society)
    - Relatively high (in the top 30-44% among the US society)
    - Average (in the top 45-54% among the US society)
    - Relatively low (in the top 55-69% among the US society)
    - Low (in the top 70-84% among the US society)
    - Very low (in the top 85-100% among the US society)

31. How willing are you to give to good causes without expecting anything in return? Please use a scale from 0 to 10, where 0 means "completely unwilling to give to good causes" and a 10 means you are "very willing to give good causes".

32. Imagine the following situation: Today you unexpectedly received $ 1,000. How much of this amount would you donate to a good cause? (Values between 0 and 1000 are allowed.)

33. Please tell me, in general, how willing or unwilling you are to take risks. Please use a scale from 0 to 10, where 0 means "completely unwilling to take risks" and a 10 means you are "very willing to take risks".

34. Agree or Disagree: I assume that people have only the best intentions.

    - Agree
    - Disagree