

Housing Wealth and Tax Preferences Across Europe: Experimental Evidence

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Abstract

The role of wealth in shaping political preferences is poorly understood, especially in a cross-national perspective. We study the tax preferences of people in 7 European countries, using a novel survey experiment. We focus in particular on the role of housing wealth, which accounts for the bulk of household wealth for most people, in shaping tax preferences. We show that

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TO-DO/Open Questions

1. Fundamentally, do we want to write a housing/wealth paper (impact of (housing) wealth on formation of tax preferences) or a paper about misperceptions of inequality and how this relates to tax preferences (or perhaps more suitably, about fairness views)? We have the data for both, but it would be good to focus on one for the time being.
2. Can we make a descriptive contribution as well by documenting rigorously what people think about income and wealth inequality across Europe and how it corresponds to reality? I think so - there isn't much comparative evidence from Europe, what we have are surveys from the US and from Europe for social mobility.
3. How to best display results in the non-experimental section? (Table with different panels showing only variables of interest or figures? Table might be more economical in terms of space.) Which model to use? (Linear model for dependent variables on 1-5 scale or create dummies and use logit?)
4. Exclude respondents who spend an unreasonably short amount of time on the survey? (e.g. less than 5min/300s)
5. If we run a follow-up survey with a similar treatment as in the EU survey, we might want to ask some questions pre- and post-treatment to see more directly whether correcting over-/underestimates of inequality has an effect.
6. In conjoint analysis, comment on weight accorded to different groups (greater elasticity of support for taxes on lower income/inheritance bands). Hence: raising taxes on the rich generates little additional support among the public but may be extremely costly in terms of interest group support (Ballard-Rosa et al. 2017)

1 Introduction

2 Theory

2.1 Housing Wealth and the Formation of Tax Preferences

IF we focus on the the role of housing wealth for the formation of tax preferences, we could for example argue that patterns of preference formation should differ between taxes on stocks (inheritance, wealth) and flows (income, to some extent capital gains) and that housing wealth should have a more visible effect on the former. This seems to be borne out by the evidence and at least I am not aware of a huge amount of literature making this explicit argument.

A second line of argument could distinguish between different types of housing tenure and for example investigate the differences between homeowners who have paid off their mortgage and those who haven't yet. The argument here would be that having paid off their mortgage should make homeowners even less supportive of progressive/wealth taxation, as they now have full ownership of the asset value of their house. The critique that we don't distinguish between those with and without mortgages came up in the reviews of the efficacy paper, but it would be instructive to study this across Europe too.

2.2 (Mis)Perceptions of Inequality and Tax Preferences

IF we focus on the role of perceptions of inequality, we may argue along similar lines as Alesina, Stantcheva and Teso (2018) in their paper on intergenerational mobility and redistribution preferences: people who are more "pessimistic" about levels of inequality have more progressive tax preferences, appraisal of information differs based on homeownership status, political orientation, etc. Even at the descriptive level, we don't have a precise idea of how bad people in Europe perceive inequality to be, so we can definitely address a gap there. On the other hand, to write a full paper around this question, we might need additional measures of inequality, not just top 10% shares.

2.3 Does Information about Income or Wealth Inequality Shift Tax Preferences?

2.4 Hypotheses

In our pre-registration¹, we formulated the following hypotheses pertaining to the observational data in our survey:

H1a: People who estimate a higher income/wealth share of the top 10% have more progressive tax preferences.

H1b: People who believe that they are higher up in the income/wealth distribution have less progressive tax preferences.

H1c: People who are homeowners prefer less progressive inheritance taxes and they are less likely to support wealth taxation than non-owners.

We furthermore pre-registered a set of hypotheses regarding the expected effects of our information treatments:

H2a: People who underestimated (overestimated) top income/wealth shares adjust the progressivity of their tax preferences upwards (downwards).

H2b: People who are presented information about national income and/or wealth inequality are more supportive of progressive taxation than people in the control group.

H2c: People who received the income treatment have more progressive income tax preferences than people in the control group and in the wealth or combined treatment groups. People who received the wealth or combined treatment have more progressive inheritance tax preferences than people in the control group and in the income treatment group.

3 Data

We test our arguments using data from an original survey that we conducted in 7 European countries (Denmark, France, Germany, Ireland, Italy, Netherlands, Sweden) in the summer of 2022. The survey was conducted online with nationally representative samples by the survey company Kantar. With approximately 1250 respondents per country, our total sample comprises 8699 people. The average time for completion of the survey was 14 minutes and the median time was 13 minutes. The full survey in English is reported in

¹Haslberger, Matthias, Ben Ansell, Mads A Elkjær, Laure Bokobza, Jacob Nystrup, and Asli Cansunar. 2022. "WEALTHPOL Europe Survey." OSF. May 29. osf.io/zteyu.

Appendix B. The questionnaires were professionally translated to the six other languages and checked by the researchers for consistency and appropriate use of technical terms.²

In the first part of the survey, we asked about socio-demographic characteristics of our respondents and their parents. Crucially, we also asked them to provide information about their own and their parents' housing situation, as well as to estimate their position in the wealth and income distributions and the share of income/wealth going to the top 10%. After answering these questions, the respondents in each country were randomly assigned to one of four information treatments: one quarter was assigned to a control group and did not receive any information, while one quarter each were shown the share of income, wealth, or both income and wealth that accrued to the top 10% in their country in 2019. After the information treatment, we asked the respondents a range of questions about their tax preferences, and the survey concluded with a forced-choice conjoint experiment to assess their preferred tax rates on different income and inheritance bands. We provide more detailed information about the survey questions, as well as the information treatment and the conjoint, as we move through the empirical analysis.

4 Results

4.1 Housing Wealth Across Europe

This section shows some descriptive evidence regarding housing wealth in the countries in our sample.

4.2 (Mis)Perceptions of Inequality

Immediately before the treatments we showed all respondents (including the control group) two hypothetical income distributions that circumscribe the range of theoretically possible distributions: one with perfect equality, where the top 10% receive 10% of all income, and a condition of perfect inequality, where the top 10% receive all income. Following this, we asked all respondents to estimate first the share of income and then the share of wealth that accrues to the top 10% in their country. The results are intriguing: in a nutshell, people vastly overestimate income inequality and then give more or less the same estimate for wealth inequality. Since wealth is everywhere much more unequally distributed than income, they inadvertently end up being more or less correct about the share of wealth owned by the top 10%.³ Interestingly, the range of average estimated top wealth shares in our 7 countries is much narrower than the observed range of top wealth shares. Germans estimate that the top 10% own 60% of all wealth in the country, while the

²The authors themselves are native in three of the languages and have working knowledge of the remaining three.

³Extreme answers that are logically impossible (e.g. the top 10% owning 10% or less OR complete inequality) were recoded to missing. Table C2 shows that including these answers leads to the same substantial conclusions.

Dutch think on average that the share is 67%; in other countries, the estimates are in between. Meanwhile, the actual top 10% wealth shares range from 54% in Italy to 75% in Sweden (which has neither wealth nor inheritance tax). Actual top income shares are more similar across countries but between 22 and 34 percentage points lower than estimated.

The very similar estimates that our respondents provide for top income and wealth shares⁴ suggest that they may struggle to properly distinguish between the two concepts. If this is true, it means that it would be incorrect to assume, based on these data, that people are better informed about wealth inequality than about income inequality. Rather, the correct interpretation would be that people are generally uninformed about matters related to inequality, but have a vague notion that inequalities are high. This is in line with what similar research has found in the past (Alesina, Stantcheva and Teso, 2018; Kuziemko et al., 2015).

4.2.1 Who Gets Levels of Inequality Wrong?

Finding that people tend to substantially overestimate income inequality (while getting wealth inequality approximately right) raises the question, which factors determine whether respondents overestimate top 10% shares? To answer this question, we construct dummy variables which take the value 1 if a respondent overestimated wealth or income inequality and 0 otherwise. We then regress these dummies on people's housing wealth, their perceived economic position, and other demographics. Table 2 presents the results. Columns 1 and 3 show logit models, while columns 2 and 4 show linear probability models, with very similar results. Housing wealth is not significantly related to the probability of overestimating either income or wealth top shares. Economic variables (perceived wealth and actual household income) only play a role for people's estimate of top income shares. Interestingly, the signs point in opposite directions: as expected, respondents with high household income are less likely to overestimate top income shares, but people who believe they are higher up in the wealth distribution are more prone to overestimating income inequality. Older, female respondents are also less likely to overestimate top income shares, while university education has no impact. In contrast, people's probability of overestimating top wealth shares is unrelated to their subjective and objective economic circumstances. Older, male, and university educated respondents are most likely to estimate that the top 10% own more wealth than they actually do.

This analysis has shown that Europeans tend to misperceive inequality as measured by top 10% income shares and, to a lesser extent, wealth shares. They are overly "pessimistic" in that they believe the richest 10% of income earners receive a much greater share of total income than they actually do, leaving less money for ordinary citizens like themselves (very few people consider themselves part of the top 10%, even if they are). This implies that showing people information about the actual distribution of incomes should,

⁴The individual-level correlation between the two estimates is 0.71.

if anything, make them less concerned about inequality and less supportive of highly progressive taxes on top incomes. Most people who were randomly assigned to the income or income + wealth treatment have learned that the rich earn a lower share of national income than they thought. This contrasts with findings from the US where studies have consistently found that people tend to be unaware of the extent of inequality and information treatments increase concerns about inequality, albeit not always progressive tax preferences (Kuziemko et al., 2015; Norton and Ariely, 2011).

Table 1: Actual and perceived top wealth and income shares

Top 10% share	Denmark		France		Germany		Ireland		Italy		Netherland		Sweden	
	Actual	Perceived	Actual	Perceived	Actual	Perceived	Actual	Perceived	Actual	Perceived	Actual	Perceived	Actual	Perceived
Income	34	62.2 (0.00)	32	62.9 (0.00)	37	58.9 (0.00)	35	67.4 (0.00)	33	61.7 (0.00)	29	63.4 (0.00)	30	62.4 (0.00)
N(NA)		1140(140)		1052(181)		1002(218)		1110(139)		1044(198)		1154(62)		1132(127)
Wealth	67	62.3 (0.00)	55	63.3 (0.00)	65	59.8 (0.00)	63	66.2 (0.00)	54	62.4 (0.00)	68	67.2 (0.17)	75	64.2 (0.00)
N(NA)		1191(89)		1098(135)		1034(186)		1136(113)		1096(146)		1171(45)		1174(85)

Note: P-values for tests of equality of the average perceived top-10% shares to the actual top-10% wealth and income shares are in parentheses.

Table 2: Probability of overestimating inequality

	<i>Probability of overestimating:</i>			
	Top income share		Top wealth share	
	(Logit)	(LPM)	(Logit)	(LPM)
House value (Ref.: Don't own)				
€200k and under	-0.039 (0.085)	-0.007 (0.014)	0.097 (0.073)	0.023 (0.017)
€200k to €400k	-0.041 (0.082)	-0.006 (0.014)	0.023 (0.068)	0.005 (0.016)
€400k to €600k	-0.029 (0.117)	-0.005 (0.019)	0.044 (0.096)	0.010 (0.023)
€600k to €1m	-0.045 (0.154)	-0.009 (0.025)	0.047 (0.125)	0.011 (0.029)
€1m and over	0.359 (0.317)	0.048 (0.046)	-0.066 (0.231)	-0.016 (0.054)
Perceived economic position				
Perceived wealth quintile	0.167* (0.046)	0.027* (0.008)	0.018 (0.038)	0.004 (0.009)
Perceived income quintile	0.056 (0.051)	0.009 (0.008)	0.023 (0.042)	0.005 (0.010)
Other demographics				
HH income	-0.039* (0.013)	-0.006* (0.002)	-0.005 (0.010)	-0.001 (0.002)
Age	-0.007* (0.002)	-0.001* (0.0003)	0.011* (0.002)	0.003* (0.0004)
Female	-0.222* (0.059)	-0.036* (0.010)	-0.100* (0.050)	-0.023* (0.012)
University degree	0.037 (0.065)	0.007 (0.011)	0.305* (0.054)	0.072* (0.013)
Constant	1.355* (0.173)	0.789* (0.029)	-0.745* (0.144)	0.324* (0.034)
Observations	7,200	7,200	7,200	7,200
R ²		0.036		0.056

*Note:**p<0.05; **p<0.01; ***p<0.001
Country dummies omitted from output.

4.2.2 How Does People's Perception of Inequality Affect Their Preferences And What Happens When People Learn That They Overestimated Inequality?

We have now established that people are not well informed about inequality and we have learned which factors make people prone to overestimating top income and wealth shares. But what is the importance of this, to which extent does people's perception of inequality affect their tax preferences and attitudes regarding inequality? According to our hypothesis 1a, people who estimate higher top income and wealth shares should have more progressive tax preferences. Panel A of Table 5 provides evidence in favour of this hypothesis. It shows that people who estimated that the top 10% own a higher share of their country's wealth, are significantly more likely to support a net wealth tax and aligning capital gains and income tax. They are also less likely to consider inheritance taxes on inheritances greater than €1m too high. Similarly, respondents who estimate that the top 10% earn a higher share of their country's annual income, are less likely to consider taxes on top incomes too high. However, higher estimated top shares are not associated

with support for tax cuts on small inheritances or low incomes, perhaps because in many countries these are already mostly exempt (but note that in Elkjaer et al. (2022) this did not stop a substantial share of respondents from stating that taxes on low inheritances are too high). Overall, we find clear evidence that people who believe that the rich own a larger share of their country's wealth and national income support range of progressive tax policies.

Thus, in the next step of our analysis we investigate what happens when people learn that they overestimated (or underestimated) top income and wealth shares, compared to individuals in the control group whose estimates were left unchecked. Based on existing research, we expect people to become more concerned about inequality and less positive about fairness in society, but not necessarily more supportive of progressive taxes when they learn that inequality is lower than they thought. Our problem is that we only ask people about their attitudes after making their guess and seeing the treatment. Therefore, we cannot really measure change directly. However, we can still assess whether people adjust their preferences in response to new information by comparing the difference between respondents who got the income/wealth shares approximately correct and over-/underestimators in the four treatment groups. If people adjust their views to new information, people in the control group, whose estimates were not corrected, should show the largest difference between over-/underestimators and those who got it right.

To this end, we construct a variable that captures whether a respondent's estimate was within 5 percentage points of the actual top income/wealth share in their country or whether they over- or underestimated it substantially. Comparing coefficients across treatment groups, we get an indication whether people change their view based on having their misperceptions corrected. Based on this argument, we expect coefficients in the treatment groups to be closer to zero, as both over- and underestimators should move closer to the people with accurate guesses (who serve as the reference category), while people in the control group receive no additional information. Tables 3 and 4 show that this is not generally the case. Based on the finding that top share estimates are strongly predictive of support for wealth and capital gains taxes, and of opposition to tax cuts for the rich, we expect that in the control group overestimators are more supportive of wealth and capital gains tax and less likely to say taxes on large inheritances and high incomes are too high, compared to the reference group. The opposite should be true for underestimators. This is indeed largely true for wealth estimates, but not for income estimates.

Table 3: Effect of Over-/Underestimating Top Wealth Shares by Treatment

	<i>Support for:</i>		<i>Taxes too high on:</i>					
	Wealth tax	Cap gains	Small inh	Mod inh	Large inh	Low inc	Mid inc	High inc
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Wealth Treatment								
Overestimate	0.016 (0.081)	0.121 (0.081)	0.171* (0.074)	0.014 (0.076)	-0.113 (0.087)	0.085 (0.065)	0.034 (0.062)	-0.183* (0.075)
Underestimate	-0.126 (0.084)	0.074 (0.084)	0.068 (0.076)	0.122 (0.079)	0.085 (0.090)	0.028 (0.067)	-0.008 (0.064)	-0.009 (0.077)
Observations	1,737	1,651	1,590	1,571	1,563	1,708	1,705	1,689
Panel B: Income Treatment								
Overestimate	0.048 (0.078)	0.113 (0.081)	0.027 (0.073)	0.050 (0.074)	-0.122 (0.083)	0.074 (0.064)	0.056 (0.061)	-0.086 (0.074)
Underestimate	-0.173* (0.080)	-0.161* (0.082)	0.157* (0.075)	0.146 (0.076)	0.142 (0.085)	0.057 (0.066)	0.172* (0.062)	0.184* (0.076)
Observations	1,773	1,677	1,602	1,573	1,587	1,752	1,742	1,718
Panel C: Combined Treatment								
Overestimate	0.153 (0.081)	0.166* (0.081)	0.099 (0.076)	0.037 (0.080)	-0.010 (0.092)	0.094 (0.070)	0.045 (0.068)	-0.106 (0.079)
Underestimate	-0.011 (0.083)	-0.109 (0.082)	0.123 (0.077)	0.094 (0.081)	0.167 (0.093)	0.007 (0.071)	0.005 (0.069)	0.115 (0.080)
Observations	1,687	1,607	1,531	1,481	1,491	1,636	1,647	1,637
Panel D: Control Group								
Overestimate	0.134 (0.077)	0.192* (0.077)	0.014 (0.069)	-0.077 (0.072)	-0.144 (0.081)	0.060 (0.062)	0.066 (0.059)	-0.183* (0.069)
Underestimate	0.038 (0.078)	0.018 (0.079)	-0.003 (0.071)	-0.046 (0.073)	-0.006 (0.083)	0.020 (0.063)	0.123* (0.060)	0.009 (0.071)
Observations	1,829	1,726	1,655	1,637	1,648	1,817	1,811	1,788

Note: All models include individual controls for household income, age, sex, education, as well as country dummies and a constant. *p<0.05; **p<[0.01]; ***p<[0.001].

Table 4: Effect of Over-/Underestimating Top Income Shares by Treatment

	<i>Support for:</i>		<i>Taxes too high on:</i>					
	Wealth tax	Cap gains	Small inh	Mod inh	Large inh	Low inc	Mid inc	High inc
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Wealth Treatment								
Overestimate	0.298*	0.156	0.117	-0.038	-0.151	0.066	0.023	-0.068
	(0.114)	(0.115)	(0.105)	(0.110)	(0.123)	(0.092)	(0.087)	(0.105)
Underestimate	0.329*	0.151	0.260*	0.031	-0.103	0.222*	0.091	-0.043
	(0.128)	(0.129)	(0.118)	(0.124)	(0.138)	(0.103)	(0.098)	(0.118)
Observations	1,738	1,651	1,591	1,571	1,564	1,710	1,706	1,690
Panel B: Income Treatment								
Overestimate	0.366*	0.233	-0.180	0.105	0.034	-0.062	-0.180	0.005
	(0.119)	(0.125)	(0.113)	(0.115)	(0.129)	(0.098)	(0.093)	(0.114)
Underestimate	0.216	0.158	0.016	0.275*	0.208	0.145	-0.022	0.140
	(0.132)	(0.137)	(0.125)	(0.127)	(0.142)	(0.108)	(0.103)	(0.126)
Observations	1,771	1,675	1,602	1,572	1,587	1,751	1,741	1,717
Panel C: Combined Treatment								
Overestimate	0.040	0.245*	0.038	-0.023	0.102	0.051	0.024	0.175
	(0.120)	(0.121)	(0.110)	(0.116)	(0.131)	(0.099)	(0.098)	(0.114)
Underestimate	0.104	0.232	0.122	0.014	0.120	0.130	0.085	0.263*
	(0.133)	(0.134)	(0.121)	(0.128)	(0.145)	(0.110)	(0.109)	(0.127)
Observations	1,685	1,605	1,529	1,479	1,489	1,634	1,645	1,635
Panel D: Control Group								
Overestimate	0.067	-0.001	0.031	0.137	0.072	0.145	0.140	0.261*
	(0.112)	(0.113)	(0.103)	(0.108)	(0.123)	(0.091)	(0.085)	(0.101)
Underestimate	-0.039	-0.065	0.119	0.215	0.138	0.172	0.283*	0.318*
	(0.126)	(0.128)	(0.115)	(0.121)	(0.137)	(0.102)	(0.096)	(0.113)
Observations	1,829	1,725	1,655	1,637	1,648	1,818	1,813	1,789

Note: All models include individual controls for household income, age, sex, education, as well as country dummies and a constant. *p<0.05; **p<[0.01]; ***p<[0.001].

4.2.3 Do Political Orientation and Views of Government Condition Reactions to New Information?

In the next step of the analysis, we investigate whether people react differently to information about inequality based on their political affiliation and their view of government.⁵

4.3 Preferences Across Different Tax Types

⁵Ideally, we would use "government wastefulness" as a conditioning variable, but since it was asked post-treatment and may itself be affected by it, this is not strictly possible (Montgomery, Nyhan and Torres, 2018).

Table 5: Perceptions of Inequality and Tax Preferences

	<i>Support for:</i>		<i>Taxes too high on:</i>					
	Wealth tax	Cap gains	Small inh	Mod inh	Large inh	Low inc	Mid inc	High inc
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A								
Est. top wealth share	0.003*	0.004*	0.001	-0.001	-0.004*			
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)			
Est. top income share						0.001	-0.0002	-0.003*
						(0.001)	(0.001)	(0.001)
Observations	6,369	6,042	5,788	5,692	5,711	6,055	6,055	5,990
Panel B								
Perceived HH wealth	-0.113*	-0.089*	-0.036*	0.066*	0.137*			
	(0.015)	(0.015)	(0.014)	(0.015)	(0.017)			
Perceived HH income						-0.089*	-0.003	0.171*
						(0.014)	(0.014)	(0.016)
Observations	6,840	6,486	6,233	6,117	6,146	6,792	6,784	6,721
Panel C: Housing Situation (Ref.: Own with Mortgage)								
Own Outright	-0.105*	-0.089*	0.020	0.019	0.053	-0.066*	-0.091*	0.108*
	(0.039)	(0.039)	(0.035)	(0.037)	(0.042)	(0.032)	(0.031)	(0.037)
Rent	0.143*	0.124*	-0.067*	-0.136*	-0.046	0.007	-0.047	0.021
	(0.036)	(0.037)	(0.034)	(0.035)	(0.040)	(0.030)	(0.028)	(0.034)
Other	0.023	-0.067	0.001	-0.061	-0.009	0.016	-0.056	-0.036
	(0.058)	(0.058)	(0.053)	(0.055)	(0.062)	(0.047)	(0.045)	(0.054)
Observations	7,042	6,674	6,390	6,273	6,300	6,927	6,919	6,846
Panel D: House Value (Ref.: Don't Own)								
House value < €200k	-0.122*	-0.043	0.022	0.056	-0.014	-0.046	-0.035	-0.024
	(0.041)	(0.041)	(0.038)	(0.039)	(0.044)	(0.033)	(0.032)	(0.039)
House value €200k - €400k	-0.153*	-0.170*	0.087*	0.156*	0.051	-0.046	0.045	0.034
	(0.038)	(0.038)	(0.034)	(0.036)	(0.040)	(0.031)	(0.029)	(0.035)
House value €400k - €700k	-0.297*	-0.240*	0.108*	0.239*	0.216*	-0.089*	-0.004	0.134*
	(0.049)	(0.049)	(0.045)	(0.047)	(0.053)	(0.040)	(0.039)	(0.046)
House value > €700k	-0.364*	-0.266*	0.066	0.318*	0.455*	0.046	-0.036	0.378*
	(0.075)	(0.074)	(0.068)	(0.070)	(0.079)	(0.060)	(0.058)	(0.069)
Observations	6,924	6,569	6,286	6,175	6,200	6,823	6,816	6,743

Note: All models include individual controls for household income, age, sex, education, as well as country dummies and a constant.
*p<0.05; **p<[0.01]; ***p<[0.001].

In this section, we investigate hypotheses 1a - 1c with regard to a range of tax-related questions. We ask about support for a net wealth and capital gains tax, as well as views on the level of inheritance and income taxes for various inheritance and income bands. Net wealth taxes have somewhat fallen into disuse (in the recent past they were abolished in Denmark, Germany, and Sweden). Currently, of the countries in our sample, only France and Italy levy a wealth tax on selected assets. Nevertheless, it is one of the most controversial forms of taxation and the idea of (re-)introducing a wealth tax is proposed by left-wing politicians with some regularity (Belgium introduced a "solidarity tax" on securities accounts in 2020). To gauge popular attitudes towards wealth taxation, we asked respondents whether they agree or disagree that there should be an annual tax on the net wealth of the wealthiest households in their country. Capital gains taxation is a similarly contentious topic. Whereas taxes on "unearned income" in many cases used to be much higher than taxes on labour income, the reverse is true in most cases today (Piketty, Saez and Zucman, N.d.). For this reason, we asked respondents whether they agree that realized capital gains should be taxed at the same rate as income in their country. Finally, we asked whether people think taxes are too low, about right, or too high on people who receive small/medium/large inheritances and people who earn low/middle/high incomes. This allows us to gauge attitudes towards progressive taxation of inheritances and income. All variables are measured on a 5-point scale; higher values mean higher support for wealth or capital gains taxes and support for tax cuts in the respective inheritance/income bands. We estimate linear probability models and all models include a set of standard controls: household income, age, sex, university degree, and country dummies.

Panel A of Table 5 provides evidence in favour of hypothesis 1a. It shows that people who estimated that the top 10% own a higher share of their country's wealth, are significantly more likely to support a net wealth tax and aligning capital gains and income tax. They are also less likely to consider inheritance taxes on inheritances greater than €1m too high. Similarly, respondents who estimate that the top 10% earn a higher share of their country's annual income, are less likely to consider taxes on top incomes too high. However, higher estimated top shares are not associated with support for tax cuts on small inheritances or low incomes, perhaps because in many countries these are already mostly exempt (but note that in Elkjaer et al. (2022) this did not stop a substantial share of respondents from stating that taxes on low inheritances are too high). Overall, we find clear evidence that people who believe that the rich own a larger share of their country's wealth and national income support range of progressive tax policies.

Panel B tests the rational self-interest explanation of preference formation by regressing the tax preference variables on people's self-assessed position in the household wealth or income distribution. The results are consistent with hypothesis 1b. Respondents who believe that they are in a higher wealth quintile are less likely to support wealth and capital gains taxes. The effect size is substantial: moving from the bottom to

the top quintile is associated with 0.45 point reduction in support for a net wealth tax and a 0.36 point reduction in support for aligning capital gains tax with income tax. Regarding inheritance taxation, members of (self-assessed) richer households display a preference for a less progressive inheritance tax system: they are less likely to say that taxes are too high on small inheritances and more likely to say so for moderate and large inheritances.⁶ The same pattern holds true for (self-assessed) high income households and income taxation. Thus, how people assess their relative position in society strongly affects their tax preferences in a way that is consistent theories of rational self-interest.

Finally, Panels C and D show the evidence for hypothesis 1c, that homeowners display less progressive tax preferences. In Panel C, we differentiate between homeowners with and without a mortgage, renters, and a residual category of people with different living arrangements⁷. The results show that owners who have not yet paid off their mortgage occupy an intermediate position between outright owners and renters. More supportive of wealth and capital gains taxation than the former, they are still significantly less likely to support wealth and capital gains taxes than the latter. When it comes to inheritance taxation, they are more like outright owners, whereas their income tax preferences are more aligned with those of renters. Outright owners again display the least progressive income tax preferences, being the least supportive of income tax cuts for lower and middle incomes and most in favour of income tax cuts for people with high incomes. Overall, the impact of people's housing situation appears to be strongest on attitudes towards wealth and capital gains taxes, but there is clear empirical support for hypothesis 1c also with regard to inheritance and income tax preferences.

Panel D presents a different angle on hypothesis 1c. It shows that not only do homeowners have less progressive tax preferences than renters, there is also variation within the group of homeowners. In line with our theoretical expectations, we find that people with more valuable houses – who have the most to lose from such taxes – are more strongly opposed to wealth and capital gains taxes than people with less valuable houses. With regard to inheritance and income taxes, we see that the more valuable a respondent's house, the more likely she or he is to say that taxes on large inheritances and on high incomes are too high. This again shows that people by and large form their tax preferences based on rational self-interest. Table D3 shows that the relationships described here largely hold up if the variables are entered jointly in the same models.

⁶Note that this could also be due to these individuals being better informed and therefore aware that small inheritances are exempt from taxation practically everywhere. **Am I correct that we specified "low incomes" to be up to 0.5x average and "high incomes" above 2x national average? And below €200k and above €1m for inheritances?**

⁷"Living rent-free with family or friends" and "Homeowners with shared ownership", together accounting for just under 9% of all observations.

4.4 Conjoint Analysis: Preferred Income and Inheritance Tax Rates

At the end of the survey, the respondents were asked to complete a forced-choice conjoint survey experiment on preferences over combinations of income and inheritance tax rates for different income and inheritance bands. The income bands are set for each country so as to represent approximately up to 0.5x, 1x, 2x, and >2x the national average income (see Table A1). The inheritance tax bands are set at up to €200k, €500k, €1m, and >€1m, or the approximate equivalent in national currency in Denmark and Sweden. We showed each respondent pairs of randomly generated income and inheritance tax plans and asked them to choose which plan they would rather see enacted. Each respondent was shown five such binary comparisons.

With this setup, we aim to capture the trade-offs people may make between different types of taxes. We hypothesised that people would generally prefer progressive systems of both income and inheritance taxation, but that income tax preferences are better defined. This is because a far larger share of the population has personal exposure to income taxes than to inheritance taxes. In previous work, we have shown that this results in a substantial share of the population in England and Wales having no preferences with regard to inheritance taxation (Elkjaer et al., 2022). If people therefore answer more or less at random in the forced-choice conjoint, this would result in less pronounced preferences compared to the income tax conjoint.

For ease of interpretation, we present the marginal means for income tax preferences in the left panel of the figures below, and preferences over inheritance tax rates in the right panel. Figures including AMCEs are included in Appendix A. This is to avoid overcrowding of the figures. However, it is important to remember that respondents chose combinations of income and inheritance tax schedules.

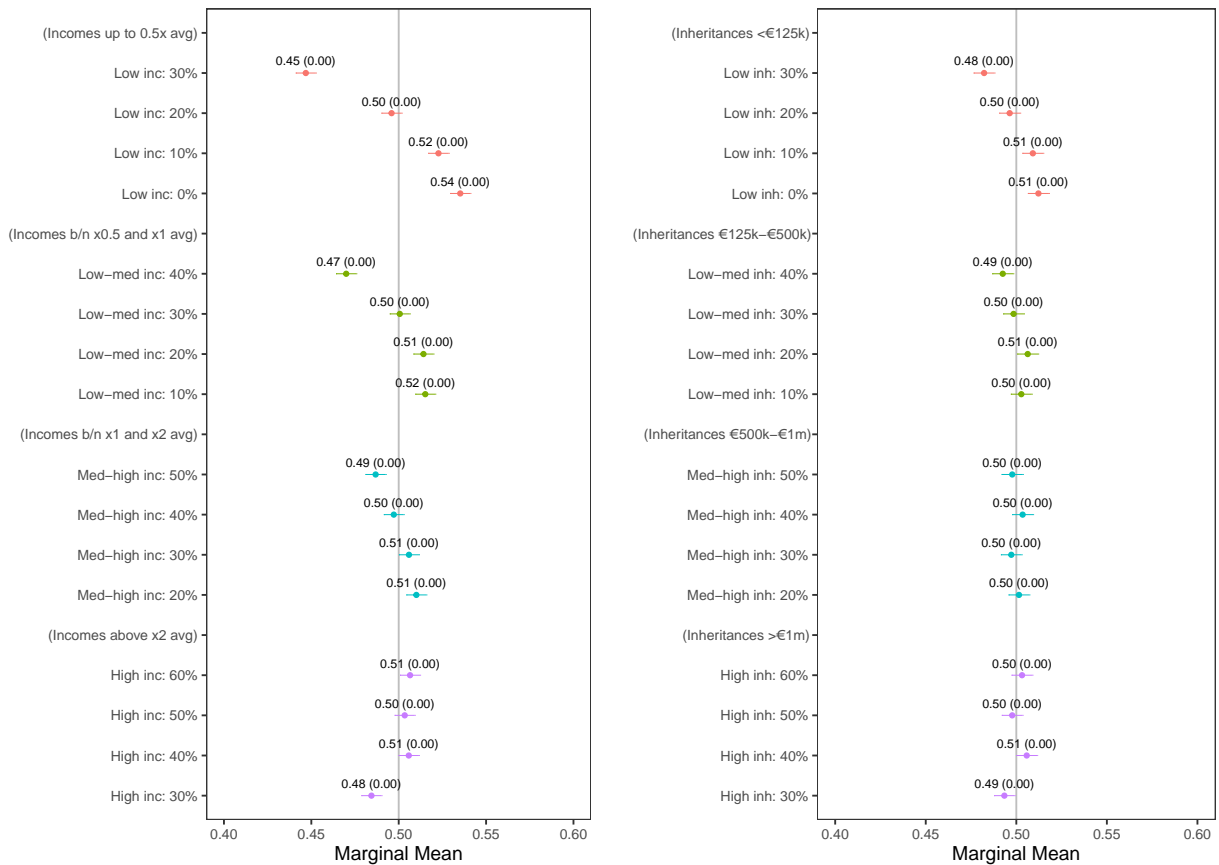
In Figure 1 we see that across our seven countries, respondents strongly favour a progressive income tax system. However, progressive preferences do not result from support for high taxes on incomes above the national average; indeed, a moderate 40% tax rate on high incomes is as popular as a higher 60% rate. Instead, people strongly oppose even moderate income taxes on people with low or medium-low incomes. The most popular tax rate on people earning up to half the average national income is 0%, and an otherwise identical tax schedule including a 30% rate on low incomes instead is 9 percentage points less likely to be selected. For the two middle income groups, the most preferred rate is likewise the lowest that people were able to choose. Thus, on average, people in our 7 countries have progressive income tax preferences, while also favouring a lower overall tax burden for everyone except the highest earners, similar to the findings of Elkjaer et al. (2022) for inheritance taxes in England and Wales. The indifference of respondents towards high top income tax rates furthermore suggests that raising taxes on the rich may not generate much electoral support. Indeed, as Ballard-Rosa, Martin and Scheve (2017) argue, the combination of popular indifference and strong opposition from interest groups may prevent parties from pursuing such tax reforms.

For inheritance taxes, the conjoint shows much less pronounced results. People oppose a 30% tax rate on inheritances below €125k, but are fairly indifferent regarding taxes on larger inheritances. This indicates that for the vast majority of people, income tax is much more salient, and even people who think that taxes are too high, when faced with the choice between reducing income taxes and reducing inheritance taxes, tend to choose the former.

Figure 2 shows that this pattern by and large holds across countries, despite very different income tax systems.

4.4.1 Is Inheritance Tax More Salient for Homeowners?

Figure 1: Preferred income and inheritance tax rates



4.5 Does Information about Inequality Shift Tax Preferences?

Compared to other survey experiments in the literature, our treatment has the virtue of being straightforward and comparatively easy to understand.

Figure 5 shows that our information treatments had no systematic effect on people's tax preferences in the

Figure 2: Preferred income and inheritance tax rates, by country

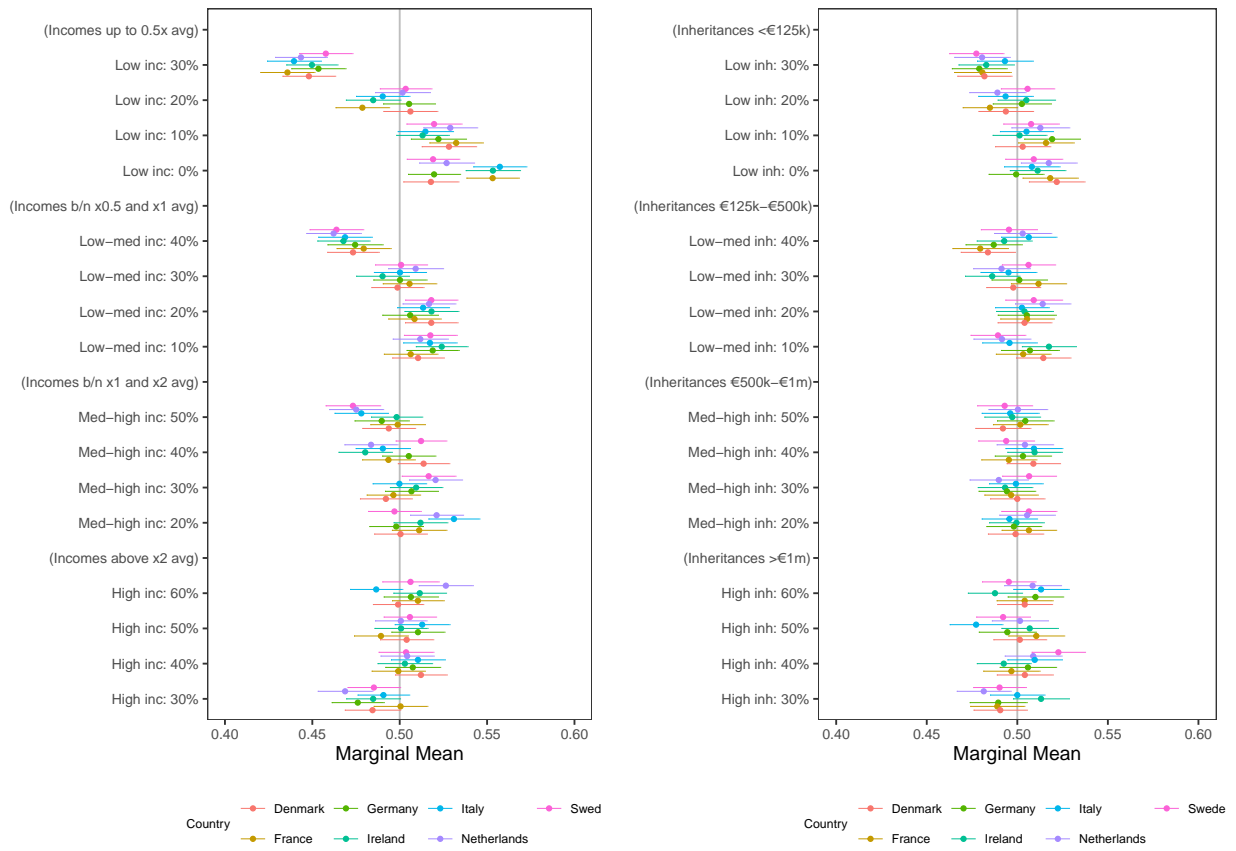


Figure 3: Preferred income and inheritance tax rates, renters and homeowners

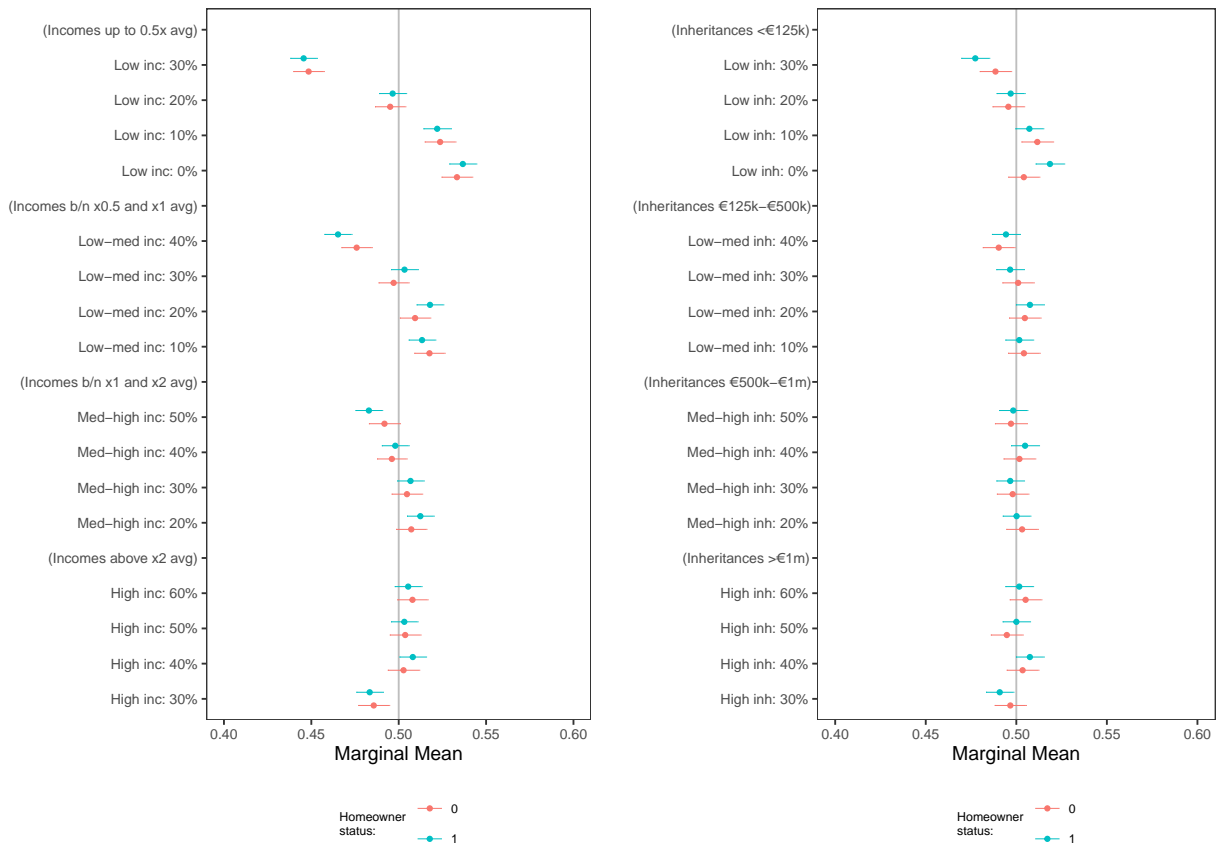
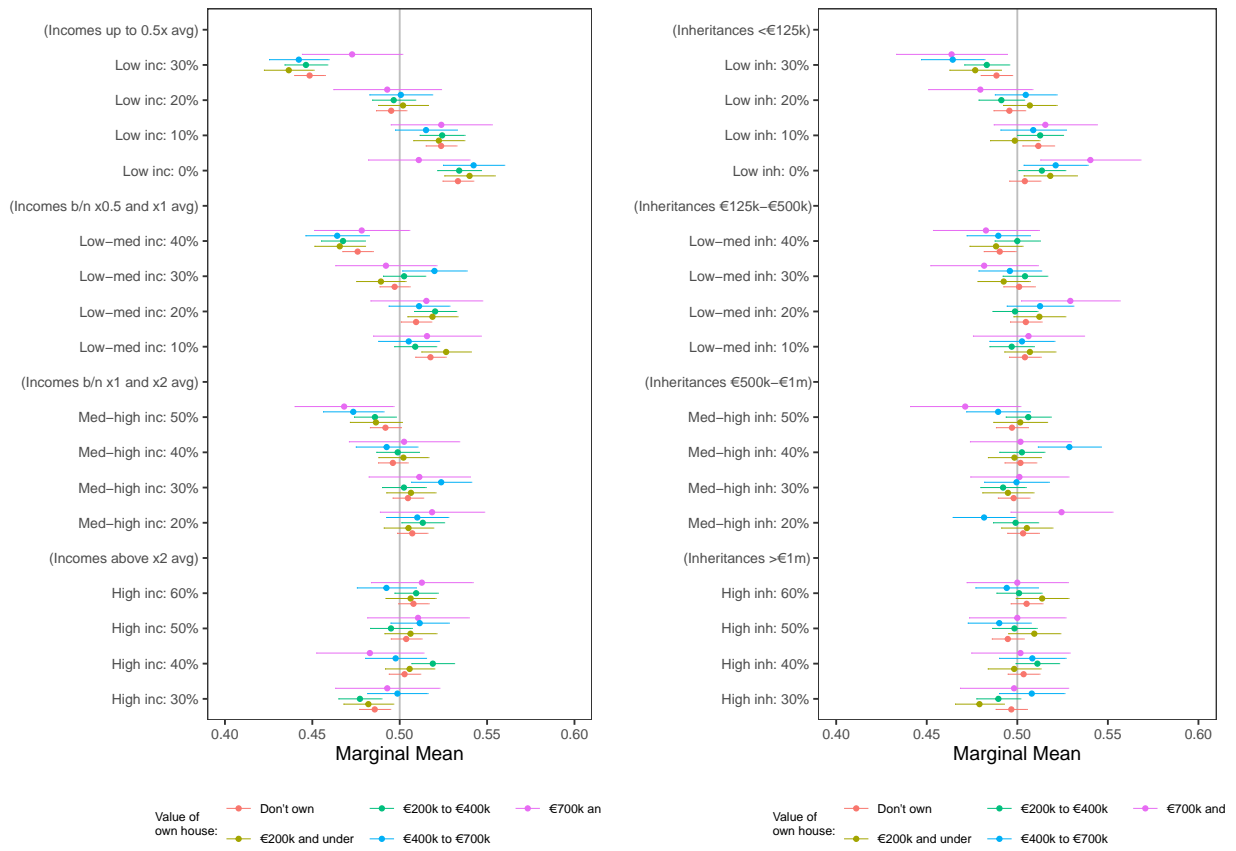
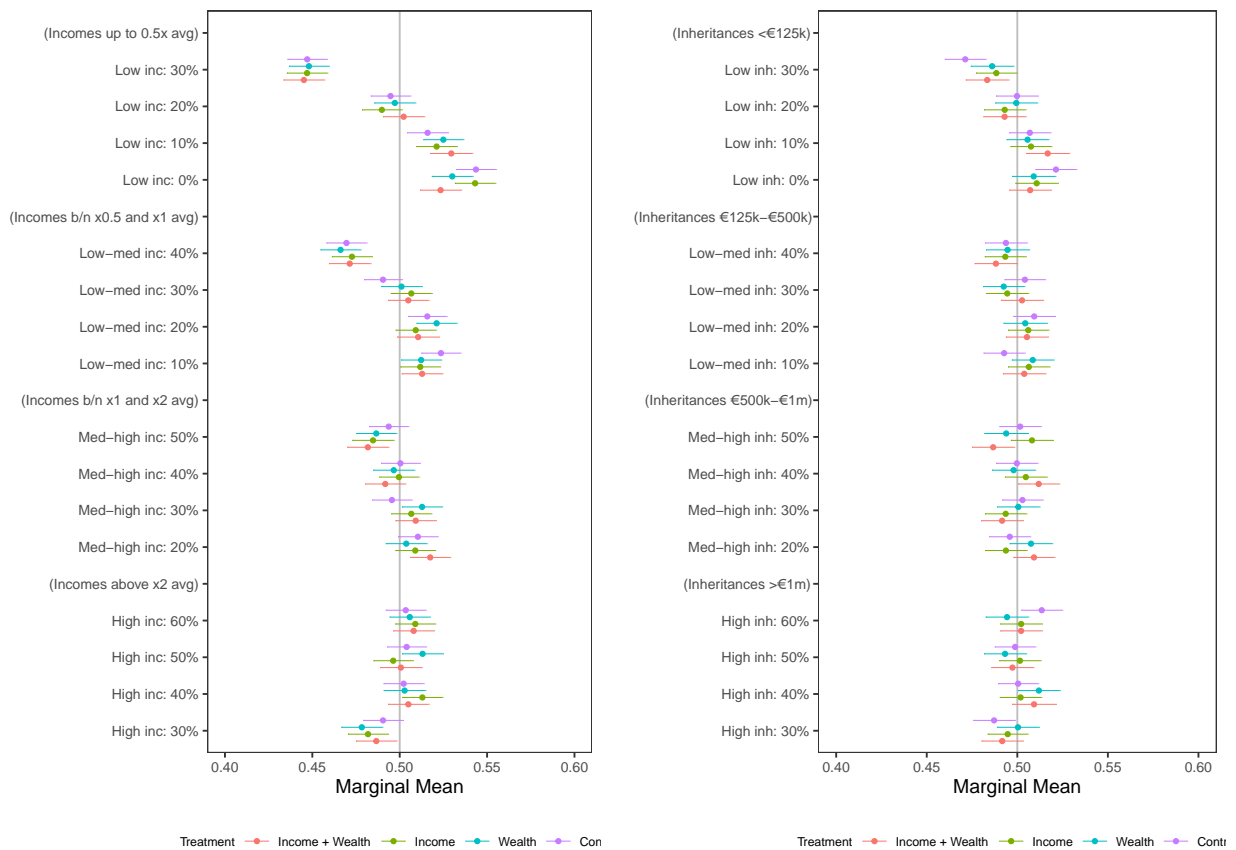


Figure 4: Preferred income and inheritance tax rates, by house value



conjoint experiment, at least not in the pooled sample. This is in line with a growing body of literature which finds that it is difficult to shift preferences with information treatments, even fairly strong ones (Kuziemko et al., 2015). We thus find no support for hypothesis XX, that people are more concerned about that facet of inequality which they have seen information about in the treatment. While treatment effects are generally weak, if anything, the control group appears by some measures to hold the most progressive tax preferences. For example, respondents in the control group are the only ones significantly more (less) likely to choose a tax plan if it taxes large inheritances at 60% (30%). Overall, the analysis is in line with our earlier findings that people do not really react domain-specifically to information about income or wealth inequality. However, as we have seen, this may just reflect the fact that the majority of respondents overestimated inequality, unlike what we hypothesised.

Figure 5: Preferred income and inheritance tax rates, by treatment group



In the answers to our tax-related survey questions, treatment effects are likewise mostly absent.

5 Conclusion

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Online Appendix

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A Additional Information on the Conjoint

Table A1: Income levels for conjoint.

Country	Lower Income (x0.5)	Middle Income (x1)	Higher Income (x2)
Denmark	225000	450000	900000
France	20000	40000	80000
Germany	20000	40000	80000
Ireland	25000	50000	100000
Italy	15000	30000	60000
Netherlands	25000	50000	100000
Sweden	225000	450000	900000

Figure A1: Preferred income and inheritance tax rates

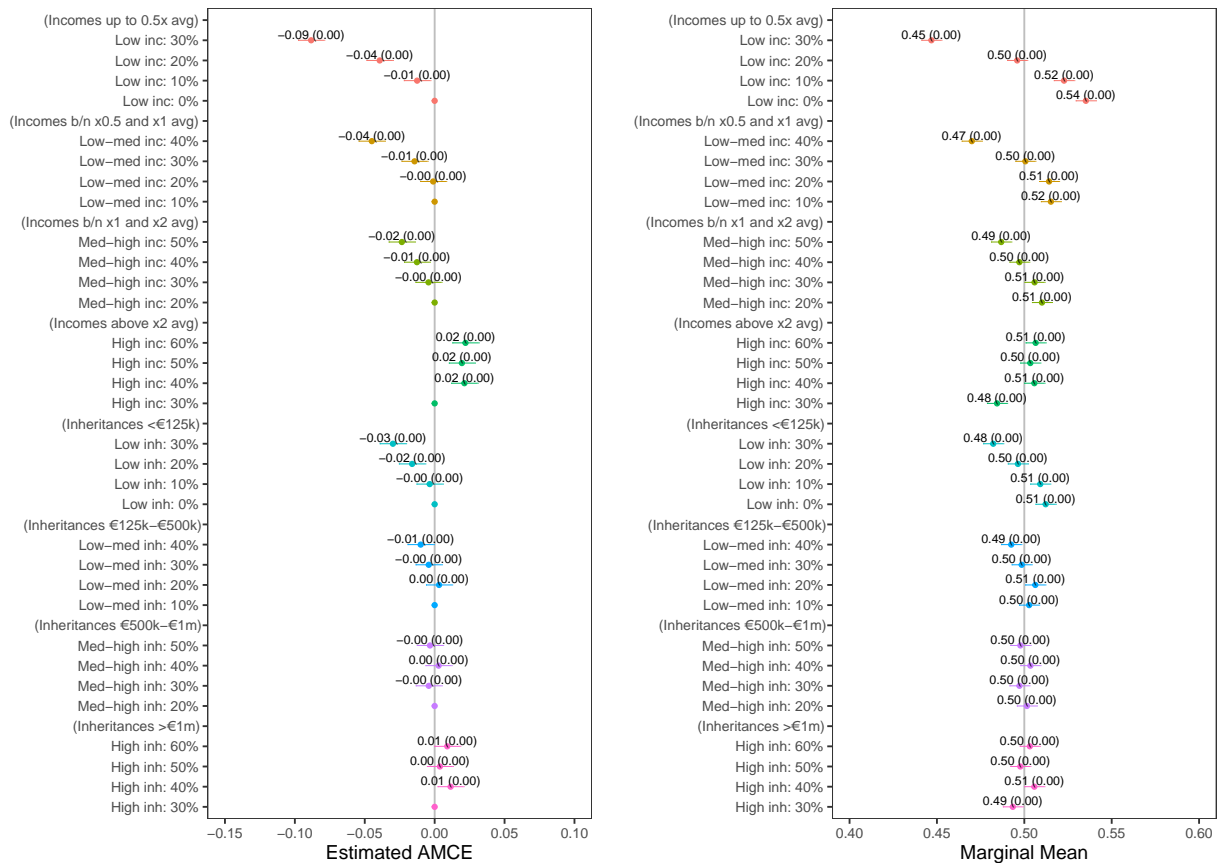
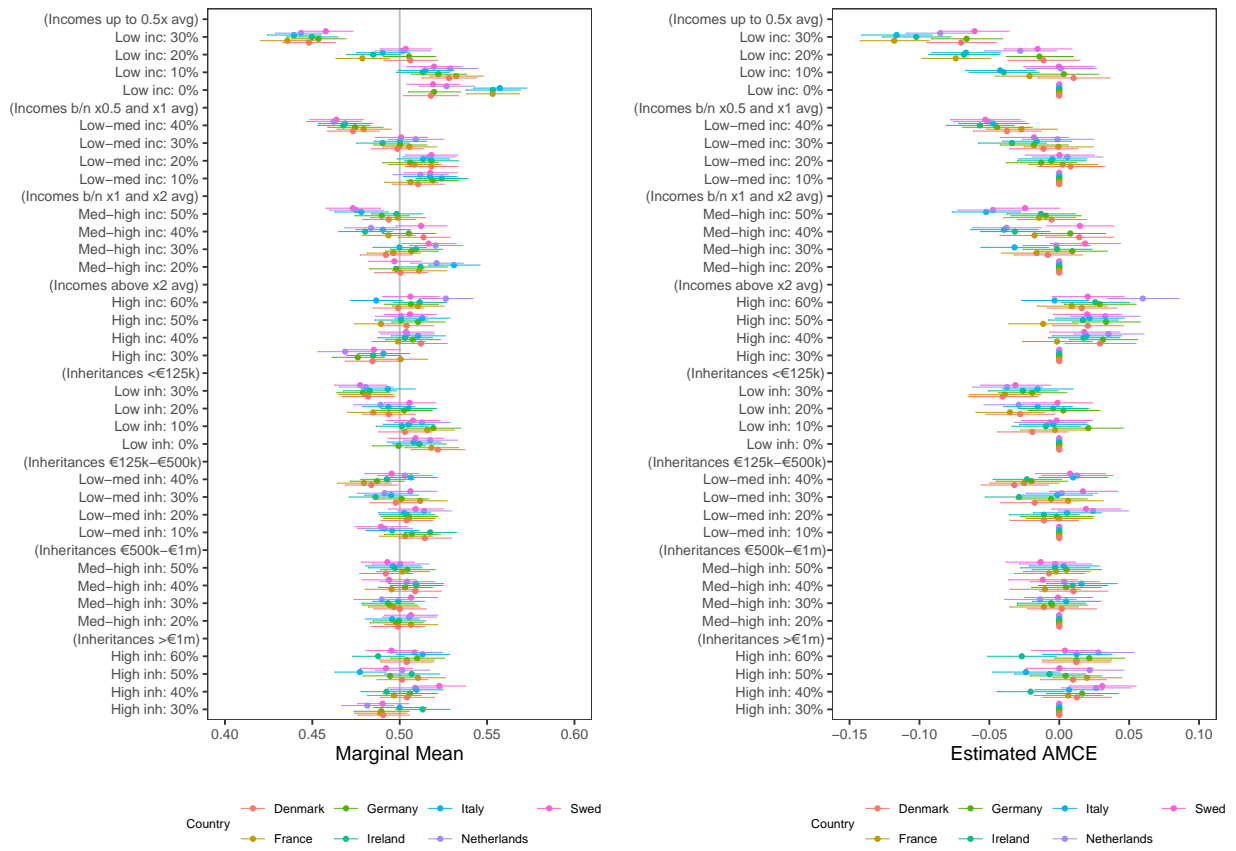


Figure A2: Preferred income and inheritance tax rates, by country



B Survey Questionnaire

Here we will show the English master questionnaire.

Table C2: Actual and perceived top wealth and income shares, all responses

Top 10% share	Denmark		France		Germany		Ireland		Italy		Netherland		Sweden	
	Actual	Perceived	Actual	Perceived	Actual	Perceived	Actual	Perceived	Actual	Perceived	Actual	Perceived	Actual	Perceived
Income	34	59.1 (0.00)	32	59.1 (0.00)	37	52 (0.00)	35	63.4 (0.00)	33	55.2 (0.00)	29	61.4 (0.00)	30	59.3 (0.00)
N(NA)		1278(2)		1226(7)		1216(4)		1247(2)		1234(8)		1214(2)		1258(1)
Wealth	67	61.1 (0.00)	55	61.4 (0.00)	65	54.2 (0.00)	63	64.3 (0.00)	54	58.8 (0.00)	68	66.1 (0.00)	75	63 (0.00)
N(NA)		1275(5)		1228(5)		1215(5)		1249(0)		1236(6)		1214(2)		1259(0)

Note:

Unrestricted answers: Full range of estimated top 10% shares from 1% to 100%. Only answers < 1% and > 100% excluded.
P-values for tests of equality of the average perceived top-10% shares to the actual top-10% wealth and income shares are in parentheses.

C (Mis)Perceptions of Inequality

D Additional Evidence on Tax Preferences

Table D3: Combined Models

	<i>Support for:</i>		<i>Taxes too high on:</i>					
	Wealth tax	Cap gains	Low inh	Mod inh	High inh	Low inc	Mod inc	High inc
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
as.factor(house_value_comp)1	-0.069 (0.045)	-0.038 (0.046)	0.026 (0.042)	0.052 (0.044)	-0.038 (0.049)	-0.041 (0.037)	-0.054 (0.036)	-0.087* (0.042)
as.factor(house_value_comp)2	-0.097* (0.042)	-0.134* (0.042)	0.106* (0.038)	0.171* (0.040)	0.038 (0.045)	0.005 (0.034)	0.051 (0.033)	0.001 (0.039)
as.factor(house_value_comp)3	-0.214* (0.054)	-0.196* (0.055)	0.147* (0.050)	0.248* (0.052)	0.207* (0.058)	-0.012 (0.044)	0.014 (0.042)	0.076 (0.050)
as.factor(house_value_comp)4	-0.195* (0.082)	-0.186* (0.081)	0.055 (0.075)	0.253* (0.077)	0.303* (0.086)	0.124 (0.066)	-0.061 (0.064)	0.234* (0.075)
top_wealth_est	0.0004 (0.001)	0.005* (0.001)	0.001 (0.001)	-0.001 (0.001)	-0.006* (0.001)	0.002* (0.001)	0.001 (0.001)	-0.005* (0.001)
top_income_est	0.004* (0.001)	-0.0004 (0.001)	-0.001 (0.001)	-0.0003 (0.001)	0.001 (0.001)	-0.0004 (0.001)	-0.001 (0.001)	0.0003 (0.001)
perception_hh_wea	-0.103* (0.023)	-0.108* (0.023)	-0.074* (0.021)	0.004 (0.022)	0.033 (0.024)	-0.069* (0.019)	-0.036* (0.018)	0.059* (0.021)
perception_hh_inc	0.003 (0.026)	0.071* (0.026)	0.044 (0.024)	0.072* (0.025)	0.161* (0.027)	-0.041 (0.021)	0.025 (0.020)	0.124* (0.024)
Observations	5,648	5,372	5,161	5,067	5,087	5,594	5,594	5,541

Note:

*p<0.05; **p<[0.**]; ***p<[0.***]