

# IEB Working Paper 2024/17

#### THE VALUE OF PUBLIC HEALTH

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#### THE VALUE OF PUBLIC HEALTH\*

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ABSTRACT: We estimate the value of a public health system exploiting a conjoint experiment in nationally representative surveys in Brazil, France and the United States in which respondents choose between different societies that randomly vary in their economic outcomes (country income, income inequality, social mobility), political outcomes (public healthcare, democracy), and the level of personal income for each respondent. This allows us to estimate the respondents' willingness to trade off publicly provided healthcare for individual income as well as other societal attributes. We find that, on average, individuals have a strong preference for a public health system. They would need a large increase, equal to two times the average income of the country in France, and equal to 50% of the average income of the country in Brazil and the US. Most respondents support public healthcare and they do it with more intensity than its opponents. Demand for state-provided healthcare is largely driven by other-regarding preferences. Respondents that think that poverty is the outcome of luck or lack of connections, and those who lean to the political left and believe the world is zero-sum are more likely to support a public health system. Demographic traits seem uncorrelated with support for a public health system - with the exception of household wealth, which is associated with lower levels of support in France and the US.

JEL Codes: H11; H51; I13 Keywords: public health system, willingness to pay, welfare state, redistribution, conjoint experiment, other-regarding preferences

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## 1 Introduction

Over the last two centuries, human health has only grown in significance in public life. Better nutrition, preventive medicine, and advances in treating communicable diseases have doubled life expectancy and reduced morbidity substantially. This progress has heightened social expectations about the role of public authorities in fostering longer and healthier lives. Over 80% of respondents in surveys conducted around the world consistently believe that governments are responsible for ensuring adequate healthcare for all (Jensen and Petersen, 2017). Public spending on health services has expanded continuously in the last century, averaging 7% of GDP in OECD countries.

Nonetheless, the institutions, programs and funding schemes offering healthcare to citizens vary considerably across countries. Health insurance coverage, based on either government programs, compulsory systems mandated by law, or voluntary programs, is universal and quasi-universal across the OECD—including almost 100% of Western Europeans, 95% of Eastern European and over 90% of North Americans. Most countries achieve full coverage through government programs or law-mandate schemes—except Chile and the US, which cover only 77 and 38% of their populations, respectively. Yet, even where publicly-mandated coverage is universal, voluntary private health insurance remains significant—covering up to 40% of the population in several continental European countries. Consequently, about 28% of all health expenditure is funded through voluntary insurance schemes, with the rest paid by government programs and/or publicly-mandated schemes.

In this paper, we examine the demand to live in a society with a public health system. We address this question by fielding a survey (conjoint) experiment that asks participants to rate and choose between pairs of hypothetical societies. Each pair of societies randomly varies along three types of characteristics concerning both societal and individual outcomes: individual income, country-wide economic conditions (measured through income per capita, income inequality, sources of social mobility), and institutions (the existence of public health system and democratic elections).<sup>2</sup> We ran our conjoint experiments in three countries featuring different levels of economic development and public health systems: Brazil, France, and the USA.

Our conjoint experiment enables us to calculate the value of living in a society with a public health system by estimating how much of an improvement in other individual and societal dimensions our respondents would need to prefer a society without it. We do this in three ways. First, because we randomize the assignment of individual income (as well as

<sup>&</sup>lt;sup>1</sup>Source: OECD - https://stats.oecd.org. Accessed on 12/1/2023.

<sup>&</sup>lt;sup>2</sup>For an introduction to conjoint experiments, see Hainmueller *et al.* (2014).

other economic parameters), we can quantify the monetary value of public health system, that is, the average monetary compensation for citizens to be indifferent between a society with and without public healthcare, following Adserà *et al.* (2023). Second, we quantify the relative weight attached to living in a country with public health, that is, its value compared to other collective outcomes, including inequality, country income, or social mobility. Third and finally, we obtain estimates of the individual preferences toward different features of society. This allows us to map out the distribution of the intensity of preferences, which can be employed to examine both the welfare costs of a uniform provision of (baseline) healthcare in a context of possibly heterogeneous preferences, as well as the correlates of these preferences.

Our experimental set-up has advantages over previous methods employed to elicit and measure preferences. Estimating preferences for public goods or societal features is not straightforward because it is not possible to rely on revealed preferences (as it is the case with preferences for private goods, where we can infer preferences from market prices and consumer behavior). As a result, preferences for public health systems are typically inferred from opinion surveys. However, respondents in standard opinion surveys may state that they support public healthcare programs out of social desirability bias. Moreover, they generally express a preference without having to bear any costs nor confronting any trade-offs associated with their opinions. In our experiment, instead, respondents are confronted with multiple dimensions when they decide on a society's rating. We infer preferences from those responses, without directly asking about support for public healthcare, which minimizes social desirability bias. Respondents' evaluations reveal the relative importance that they attribute to each of those dimensions, even when all of them might be desirable.

In all three countries, we find strong preferences for living in a society with a public health system. French respondents in particular would need, on average, a very large increase (equal to three times the average income of the country) in their individual income to give up on a public health system. In Brazil and the US, respondents appear willing to forsake a public health system if their individual income increases by about 50 percent of their country's average income. Among all the other collective outcomes offered to respondents, only having democratic elections trumps the demand for public health.

Support for public health is rather heterogeneous within each society. Having a public health system is weighed negatively by 15% of French respondents, 20% of Brazilian respondents and around a third of US participants. Moreover, those supporting public health have more intense preferences than those opposing it.

We analyze whether individual-level variation in the value of public health is associated with two main classes of explanations prevalent in the political economy literature: selfinterest (related to personal attributes such as wealth, education or age) and ideology and worldviews that affect the preferences for public goods provision. We find that wealthier respondents are less likely to support a public health system in France and the US but not in Brazil. There is weak evidence that risk-averse individuals are more likely to support public health systems in Brazil and France. Otherwise, we do not find any substantive differences by demographic characteristics such as gender, age, education, or urban residence. By contrast, the ideational commitments of our respondents are more strongly associated with their attitudes toward public healthcare. Respondents espousing egalitarian views and a leftleaning ideology and believing that poverty is due to luck and/or a lack of social connections are more likely to favor a public health system. Moreover, the decrease in support for public health among the wealthiest is driven by those leaning right and/or thinking that individual economic outcomes are a function of personal effort. We find a similar pattern whereby US right-leaning respondents significantly support public health when offered low hypothetical incomes, but do not support it when offered a high hypothetical individual income instead.

Our paper makes contributions to three main strands of research. First, to a growing literature that uses survey experiments to estimate policy and redistributive preferences (Benjamin *et al.*, 2014; Kuziemko *et al.*, 2015; Stantcheva, 2021b,a; Barnes *et al.*, 2022; Adserà *et al.*, 2023). Second, to the literature on the political economy of welfare states tying the presence of what are eminently redistributive public health systems to the structure of preferences and ideas in society. In particular, Esping-Andersen (1990) and Alesina and Glaeser (2004), among others, see welfare states as mirroring the ideational conceptions citizens have about the role of the state in equalizing life chances.<sup>3</sup> Finally, our paper is related to the literature on the willingness to pay for individual health insurance (Finkelstein *et al.*, 2019a,b), although we estimate a different quantity: the willingness to pay for living in a society featuring a public health system.<sup>4</sup>

<sup>&</sup>lt;sup>3</sup>Alternative explanations emphasize the influence of lobbies or interest groups on policy-makers (Immergut, 1992; Quadagno, 2006) and a constitutional structure with multiple veto powers imparting a status quo bias (Steinmo and Watts, 1995).

<sup>&</sup>lt;sup>4</sup>Benjamin *et al.* (2014) use hypothetical-choice scenarios of personal decisions or votes that would affect their family, health, security, values, and options, finding an important role for well-being for both one's and people's health. See also Krueger and Kuziemko (2013) for a conjoint experiment on choosing health plans and de Bresser *et al.* (2022) for choosing different types of home care insurance.

#### 2 Conjoint Experiment and Data

We implemented a conjoint experiment in Brazil, France, and the USA, administered through a survey online to 2,000 participants in each country in the fall and winter of 2021-22 using panels provided by Netquest. The Princeton University Institutional Review Board approved the survey. All surveys relied on quotas by age, gender, education and region to match national averages.

In the conjoint experiment, we presented participants with seven pairs of alternatives, asking them both to choose, among each pair, the society that they considered the best for them and to rate each alternative in a scale from 0 to 10. As shown in Appendix A, we equate "best" society to the society participants think they will be the most content living in. Our aim is to measure their preferences (which may include other-regarding preferences), as opposed to what alternative they think is more desirable for society.

We obtained about 28,000 observations per country (number of respondents  $\times$  7  $\times$  2). The surveys also included questions about the demographic attributes (gender, education, income, religion), political preferences (left/right, beliefs about causes of economic success), and psychological traits (dark triad, i.e. Machiavellism, narcissism, psychopathy) of respondents. In addition, the surveys contained debriefing questions on the reasons for choosing different alternatives. In our analysis, we exclude respondents who completed the survey very quickly – this results in a drop of about 10% of our sample. Results are, however, robust to their inclusion.

The conjoint experiment contained six attributes:

- Individual monthly income, randomized over five variants, each one equivalent to 1.25, 1.1, 1, 0.9 and 0.8 times the average monthly income in each country at the time of the survey.
- 2. Average monthly income of society, for which we considered three variants of 1.5, 1 and 0.8 times the average monthly income in the country at the time of the survey.
- 3. Political institutions, randomized over two alternatives. In the first one, the individual was informed that "people choose the national government through free elections." In the second one, the respondent learned that "there are no free elections to choose the national government."
- 4. Health system, defined by one of the following two options: "there is a public health system paid by an income tax" or "health is not covered by a public health system".

- 5. Our fifth treatment approximated the underlying principle defining social mobility. Respondents were informed that either "personal connections matter more than effort to get ahead" or that "effort is more important than personal connections to get ahead".
- 6. Our final treatment described the extent of inequality in each hypothetical society, randomized over two possibilities: a relatively equal society where "the maximum income in the country is (2 times the country's average income) and the minimum (0.5 times the country's average income)"; and, a relatively unequal society where "the maximum income in the country is (4 times the country's average income) and the minimum (0.25 times the country's average income)". In each case, the country's average income refers to the one shown to the respondent.

Several times at the beginning of the survey experiment, respondents were told to assume constant prices across scenarios. Figures A.1 and A.2 in Appendix A show the initial instructions and an example of the vignette received by respondents. As indicated before, the latter were asked to choose one society and then to rate each one in a 0-10 scale. Tables B.1, B.2 and B.3 in the Appendix show covariate balance, namely that the attributes of the alternatives shown to participants were orthogonal to their individual characteristics.

We did not preregister the survey. However, the very design of the conjoint experiment already defines both our six attributes of interest (public health, democracy—which we explore in a separate paper (Adserà *et al.*, 2023), prosperity, inequality, and sources of social mobility) and the outcomes (i.e., ratings and choices), as opposed to an experiment with a defined treatment but multiple possible outcomes. This consideration does not apply, however, to the heterogeneity analysis presented at the end of the paper, which is exploratory and should be useful to guide the pre-analysis of future experiments.

## 3 The Value of Public Health

#### 3.1 Aggregate-level Results

We employ three quantities to measure the value that respondents give to living in a society with a public health system compared to a society without it: average marginal component effects, the willingness to pay for public health, and the weight of public health. We define each one and discuss our results, which are reported in Table [1], sequentially.

1. The <u>average marginal component effect</u> (AMCE) of public health,  $\hat{\beta}_H$ , measures the average rating (or probability of choice) of a society featuring a public health system compared to another without the latter, ceteris paribus. We estimate it with a regression of the alternatives' *j* ratings by participant *i* on the (randomly varying) attributes of the alternatives. The specification includes survey participant fixed effects  $\alpha_i$ , participant by pair fixed effects  $\gamma_{p(j),i}$ , and pair's order fixed effects  $\lambda_{o(j)}$ . Standard errors are clustered at the survey participant level.

$$\begin{aligned} \text{Rating/Choice}_{ij} &= \alpha_i + \gamma_{p(j),i} + \lambda_{o(j)} + \beta_y \text{Individual Income}_j + \beta_{cy} \text{Country Income}_j \\ &+ \beta_H \text{Public Health}_j + \beta_D \text{Democracy}_j + \beta_{EF} \text{Effort}_j + \beta_{EQ} \text{Equal Society}_j + \epsilon_{ij} \end{aligned}$$

The top panel of Table 1 reports the AMCEs for each of the attributes. We compute the AMCEs for individual and country income in two ways. First, we normalize by the country average income, so that the coefficient represents the response to an increase in income equivalent to a given percentage of the average country income. Second, we provide estimates measuring income in \$1,000 PPP. The results show the AMCE for public health system to be both significant across countries and the largest across all societal attributes, with the exception of democratic elections. The intensity for the preference to live in a country with public health provision is the highest in France, where having a public health system raises the rating of a society by 0.85 points – an increase almost equivalent to the effect of having democracy. Preferences for a public health system are positive but relatively more subdued in Brazil (an increase of 0.49 points) and, particularly, in the US (0.37 points). There are many possible reasons for these cross-countries differences. We offer an exploratory account of heterogeneous preferences across individual characteristics, within countries, in Section 4.

2. Willingness to pay for a public health system  $(WTP_H)$ . We quantify the monetary value of a public health system, that is, the average monetary compensation that makes individuals indifferent between a society with and without public health with the ratio between the AMCE for public health and the AMCE for individual income y:

$$WTP_H = \frac{\widehat{\beta}_H}{\widehat{\beta}_y}$$

The bottom panel in Table 1 reports  $WTP_H$  for both normalized income and income in \$1,000 PPP (first and second rows respectively). The size of  $WTP_H$  varies across countries. On average, the French would be willing to give up a public health system only if their income increased by 200 per cent (around \$8,200 PPP). For Brazilians and the North Americans, an

	Br	azil	Fra	ance	US		
	(1)	(2)	(3)	(4)	(5)	(6)	
	Income:	Income:	Income:	Income:	Income:	Income:	
	normalized	\$1,000 PPP	normalized	\$1,000 PPP	normalized	\$1,000 PPP	
Public Health	0.494***	0.494***	0.852***	0.852***	0.372***	0.372***	
	(0.0330)	(0.0330)	(0.0330)	(0.0330)	(0.0361)	(0.0361)	
Democracy	1.278***	1.278***	1.009***	1.009***	1.509***	1.509***	
	(0.0455)	(0.0455)	(0.0350)	(0.0350)	(0.0515)	(0.0515)	
	· · · · ·	· · · · ·		. ,	、 <i>,</i>	· · · · · ·	
Effort matters	0.114***	0.114***	0.233***	0.233***	0.277***	0.277***	
	(0.0324)	(0.0324)	(0.0265)	(0.0265)	(0.0337)	(0.0337)	
More Equal Society	0.0148	0.0148	$0.172^{***}$	$0.172^{***}$	0.00806	0.00806	
	(0.0340)	(0.0340)	(0.0283)	(0.0283)	(0.0338)	(0.0338)	
Country Income (100% increase)	0 356***		-0.0784		0.0688		
country meetine (100% mercase)	(0.0590)		(0.0480)		(0.0607)		
	(0.0000)		(010100)		(0.0001)		
Country Income (\$1,000 PPP increase)		$0.280^{***}$		-0.0191		0.0115	
		(0.0464)		(0.0117)		(0.0101)	
Individual Income (100% Increase)	0.759***		$0.427^{***}$		0.688***		
	(0.125)		(0.101)		(0.122)		
	· · · ·		× /		· · · ·		
Individual Income (\$1,000 PPP Increase)		0.597***		0.104***		0.115***	
		(0.0982)		(0.0246)		(0.0203)	
WTP (normalized income)	65.07***		199.6***		54.08***		
· · · · · · · · · · · · · · · · · · ·	(11.42)		(48.48)		(11.02)		
				0.00.4***		0.045***	
WTP (in \$1,000 PPP)		$0.827^{***}$		8.204***		$3.245^{***}$	
		(0.145)		(1.992)		(0.661)	
WPH	0.164***		0.307***		0.127***		
	(0.0119)		(0.0155)		(0.0128)		
WPH		0 178***		0 357***		0 169***	
VV I 11		(0.0122)		(0.007)		(0.0142)	
N	26740	26740	23702	23702	22736	22726	

Table 1: AMCEs, WTP, and WPH. Dependent variable: ratin	ngs.
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 $\begin{array}{|c|c|c|c|c|c|c|} \hline N & 26740 & 26740 & 23702 & 23702 & 22736 & 22736 \\ \hline \text{Top panel entries are AMCEs, estimated with individual-specific pair fixed effects and position controls, and with standard errors clustered by survey participant. * <math>p < 0.10$ , \*\* p < 0.05, \*\*\* p < 0.01. WTP is the ratio of Public Health and Individual Income AMCEs, WPH is the ratio of the Public Health AMCE over the sum of the absolute values of all other AMCEs. Delta Method standard errors are in parentheses.

increase between 65 and 55 percent (around \$800 PPP in Brazil and \$3,250 PPP in the US) would suffice. It is worth comparing the WTP among French respondents with actual public health costs. France spends \$6630 (USD PPP) per capita on health, more than the OECD average of \$4986 (Source: OECD). These numbers are below our estimated WTP, suggesting that higher public health expenditure would still be politically acceptable in France.

3. The weight of public health (WPH) broadens the WTP measure by considering the value of a public health system relative to respondents' preferences for all the other societal features. More precisely, WPH is the ratio between the AMCE for public health and the sum of the absolute values of the AMCEs of all remaining attributes n:

$$WPH = \frac{\widehat{\beta}_H}{|\sum_n \widehat{\beta}_n|}$$

The last two rows of Table  $\boxed{1}$  show the values of WPH. In the case of PPP income, the WPH represents 17.8%, 35.7% and 16.2% of all the attributes in Brazil, France and the US, respectively. Although not reported, the respective weight for democracy is 42.4, 36.4 and 51.6% in those three countries. Again, on average, French respondents value public health almost as intensely as democracy. Table  $\boxed{C.1}$  in the Appendix presents similar patterns from estimates based on choices. Table  $\boxed{C.2}$  presents the results without pair fixed effects, and figure  $\boxed{C.1}$  compares AMCEs with and without pair fixed effects, which are very similar.

#### 3.2 The Value of Public Health: Individual-Level Results

We now examine the distribution of preferences to understand both how many people are in favor of a public health system and the intensity of their preferences, which sheds light on the efficiency costs of a national policy that may arise due to preference heterogeneity (i.e., if those against it experience a higher disutility than the positive utility for those in favor).

With these goals in mind, we estimate individual marginal component effects (IMCEs) of public health. The top panel of Figure [] displays their percentiles—here estimated employing ratings.<sup>5</sup>] A supermajority values a public health system positively. Holding everything constant, only one in six French would reject a society without public healthcare. That proportion reaches about 30% in the US. The figure also shows that about one third of French respondents and one fourth of Brazilians and Americans care strongly about public

<sup>&</sup>lt;sup>5</sup>We focus on ratings for IMCEs since we have 14 observations per participant and this gives us slightly more power than using choices. We estimate them with individual-level regressions of ratings on the six attributes, with robust standard errors. We regularize individual-level estimates using an Empirical Bayes approach, which accounts for the standard errors of those individual estimates, weighting the individual-level estimates inversely to their standard errors (Chandra *et al.*, 2016; Morris, 1983).

healthcare, such that their ratings rise by one or more points when this attribute is present in a given society.<sup>6</sup>

The bottom panel of Figure 1 displays how the percentage of respondents in favor of a public health system declines as we offer a higher individual income. At every step, we compute the percentage of participants for whom the public health IMCE is larger than the individual income IMCE multiplied by a given increase in individual income. Although this exercise is more precise than average effects because it aggregates individual-level trade-offs, on the other hand, each of the IMCEs is imprecisely estimated (using 14 ratings-observations per participant). Nevertheless, it shows a similar pattern across countries as suggested by the previous results. Note that if everyone's individual income increases, the country's income must be increasing at the same rate. Hence, the internally consistent comparison involves increasing country income at the same rate simultaneously. We report these results on the right hand side panel.<sup>7</sup> In Brazil, where people have a significant preference for living in a higher income society, raising country income slightly reduces the increase in individual income required to overturn the majority for public healthcare, but it has little effect in France and the US. A society without public healthcare is only preferred by the majority if that comes along with rather high income levels (equivalent to twice the average country income in the case of Brazil and the US, and a 270% increase in the case of France).

<sup>&</sup>lt;sup>6</sup>Figure C.5 in Appendix C displays the analogous figure for choices. Figure C.6 displays the percentiles of the individual WPH, computed from IMCEs and likewise regularized using Empirical Bayes. The results confirm that the preferences for a public health system are more intense for those in favor than for those against it. Figure C.7 displays the same percentiles, now measured from choices.

<sup>&</sup>lt;sup>7</sup>Here, we compute the percentage of participants for whom the public health IMCE is larger than the sum of the individual income IMCE multiplied by a given increase in individual income and the country income IMCE multiplied by the same increase.



Figure 1: Distribution of individual preferences

(a) Percentiles of the Individual Marginal Component Effects of Public Health (IMCE)

(b) Public health and individual and country income IMCEs



11

## 4 Correlates of the Demand for Public Health

To explore the individual factors associated with support for a public health system across and within countries, we estimate heterogeneous AMCEs of public health as a function of the personal attributes, preferences and beliefs of our respondents. We draw upon two main families of explanations about the sources of support for public spending (and redistribution): strict material self-interested considerations, and other-regarding accounts of individual preferences over taxation and welfare states.<sup>8</sup>

Figure 2 displays AMCE estimates across respondent groups. The top panel splits respondents based on demographics and household characteristics, related to differences in self-interest explanations for public health preferences. The bottom panel splits respondents based on their preferences related to other-regarding explanations. We report the estimates by country: green circles for Brazilian respondents, red diamonds for French individuals, and blue squares for the US. We estimate the AMCEs for subgroups above and below a threshold—such as average household income or 45 years of age. We also report point estimates of heterogeneous AMCEs in Tables C.2, C.3 and C.4 in the Appendix, where, instead of splitting participants into two groups for each covariate, we estimate coefficients of the interaction of public health and each of the covariates.<sup>9</sup>

Two general points are worth emphasizing in Figure 2 First, cross-national differences are stable across respondent characteristics. French respondents value a public health system more than Brazilians and North Americans, across all subgroups, without any exception. In turn, Brazilians value it more than US respondents. Second, there is more variation across participants' ideas and beliefs related to other-regarding preferences (bottom panel) than across respondents' demographics (top panel). We discuss each family of explanations in more detail in the next subsections.

#### 4.1 The Role of Material Self-interest

In principle, public health systems are redistributive. Household wealth can be thought of as a substitute for health insurance: savings are often motivated by precautionary reasons. This implies that, even when holding the respondents' hypothetical income constant, the benefits from (universal) public healthcare should decline with household wealth. Additionally, health

<sup>&</sup>lt;sup>8</sup>Eliciting the opinion of respondents over which society is best for them, i.e., in which one they would be most contest, arguably includes: (1) strict self-interest considerations, listed and discussed below in Subsection 4.1 and, (2) other-regarding considerations that also affect the welfare of the individual as discussed in Subsection 4.3.

<sup>&</sup>lt;sup>9</sup>Figure C.8 in Appendix C displays the analogous results comparing IMCEs them across groups.

risks negatively correlate with socio-economic status.<sup>10</sup> Hence, if preferences are purely selfinterested, the demand for public healthcare should decline with our respondents' wealth.<sup>11</sup> Indeed, less wealthy households are significantly more supportive of public health in France and the US (see also Tables C.2, C.3 and C.4). Poorer Americans rate a society with public healthcare a quarter point higher than the average respondent. Given the negative socioeconomic status-morbidity gradient, education and household income should also negatively correlate with support for public healthcare, though these differences are small and not statistically significant.

Self-interest-based explanations admit of a number of variations that may condition or attenuate the potentially negative correlation between personal wealth or income and demand for public healthcare predicted by crude self-interested considerations. First, given a standard life cycle model with spending exceeding savings among older individuals, support for a public health system should increase with age, ceteris paribus. The elderly face higher health risks and costs, making them vulnerable to adverse selection in insurance markets (Rothschild and Stiglitz, 1976). However, we find no differences by age.

Second, recent research on welfare states and policy-making has identified a growing gender gap in partian and policy preferences, with women supporting more social spending than men (Finseraas *et al.* (2012); Iversen *et al.* (2010)—but see Gottlieb *et al.* (2018)). Nevertheless, we do not find any statistically significant differences by gender.

Third, self-interest may vary with differences in risk preferences or time discounting.<sup>12</sup> Because insurance premia in private markets may be high if only high risk types or very risk-averse individuals want to pay for coverage, risk-pooling through public health provision would reduce costs. Thus, risk-averse individuals in general, including high earners, should support healthcare more than risk lovers (Finkelstein and McGarry, 2006). We find some evidence that Brazilian and French risk-averse individuals have a higher preference for a public health system (see Tables C.2, C.3 and C.4). Inter-temporal preferences, however, do not play any role.

Fourth, individual concerns about externalities, ranging from the effect of untreated communicable diseases to having a more healthy—and therefore more productive and peaceful workforce, may influence the value of a public health system.<sup>13</sup> As an approximation to the

<sup>&</sup>lt;sup>10</sup>According to a WHO study, the risk of serious illness and premature life declines with it (Wilkinson and Marmot, 2003). Similar social gradients for life expectancy are observed in various rich and poor countries (Marmot, 2006).

<sup>&</sup>lt;sup>11</sup>See Margalit (2013) and Beramendi and Rehm (2016) for a discussion of the relationship between economic circumstances and redistributive preferences in general.

<sup>&</sup>lt;sup>12</sup>Both are self reported, on a scale from 0 to 10 (very risk averse/patient to very risk lover/impatient).

<sup>&</sup>lt;sup>13</sup>For instance, Rueda and Stegmueller (2016) show that fear of crime pushes high-income individuals to support more redistribution in more unequal European regions than in less unequal ones.





**Public Health AMCEs** 

#### **Public Health AMCEs**



#### **Conditional on beliefs and preferences**

importance of externalities, we estimate the model separately for those living in big cities (with higher density and risk of contagion and potentially more impact of any social unrest). We do not find any significant differences along this dimension.

Finally, self-interest may be shaped by the psychological predispositions of our respondents. Independently of ideology, which we explore in the next subsection, more empathetic and compassionate individuals are more likely to step in when someone is in need.<sup>[14]</sup> Altruists who cannot commit not to help others may also prefer a public health system to make sure that the costs of helping those facing a negative shock are shared by all (Coate, 1995; Currie and Gahvari, 2008). To measure the ethical dispositions of our respondents, we employ a well-developed set of psychological instruments assessing the main components of the "Dark Triad": Machiavellianism or the predisposition to act instrumentally; narcissism or the extent to which respondents take a self-aggrandized view of themselves; and, psychopathy or the lack of empathy for others and the inclination to engage in antisocial behavior (Paulhus and Williams, 2002). We find some evidence that dark triad traits make people less prone to supporting a public health system, especially in France.

Overall, we only find limited support for the claim that the demand for living in a country with a public health system is driven by individual material interests (with the exception of wealth in the US). Neither age, which proxies for morbidity, nor education, which may shape expectations about the future and about income stability, show any association with our variable of interest. The same result is true for gender, area of residence and, excluding France, psychological dispositions.

#### 4.2 Income as a Substitute for Public Healthcare?

An additional test of self-interested preferences for public health involves estimating whether its demand changes when respondents are offered a higher hypothetical individual income. If preferences are driven by private consumption value rather than from the value of living in a society where everyone enjoys it, then the demand for public health should decrease with the hypothetical income offered.

Figure 3 displays the predicted rating of societies depending on whether they include a public health system, conditional on the hypothetical income enjoyed by respondents. Ratings are demeaned by survey participant. In Brazil and, particularly, in France, there is a strict preference for societies with public health provision, independently of the hypothetical income offered. Public healthcare is not a substitute for individual income, suggesting it is valued as a public good. Conversely, in the US, the demand for public healthcare decreases

<sup>&</sup>lt;sup>14</sup>For a literature review on different altruism types and policy preferences see DellaVigna (2009); Fehr and Schmidt (2006).

with hypothetical income, appearing to be a substitute rather than a complement to high income. This aligns with the heterogeneous preferences by household wealth in Figure 2, which are especially large in the US.



Figure 3: Public Health and Hypothetical Income (AMCE)

#### 4.3 Other-regarding Preferences

A long lineage of work on political attitudes shows redistribution to be driven by ideological considerations, with left-wing voters more likely to support expansive welfare states than right-wing voters—probably responding to different tastes for equality (Caughey *et al.*, 2019).<sup>15</sup> Alternatively, different policy preferences may be due to different priors about what determines people's income and economic status: either personal choices (i.e., effort) or external factors outside the control of the individual (such as luck or social connections) (Alesina and Glaeser, 2004). Following this literature, we should expect left-wing respondents and/or those individuals who believe that luck and/or social connections are the main determinants of health outcomes to favor, out of fairness concerns, a universal public health system. By contrast, right-wing individuals and/or those respondents that consider that health outcomes

<sup>&</sup>lt;sup>15</sup>Here, we are agnostic about the sources of these ideational commitments. Although ideological calculations may be rooted in purely material self-interest, a considerable literature has found them to derive from family socialization. Partisan and ideological commitments may be transmitted from parents to children with a high probability even when the material situation of the latter has changed compared to the status of the former (Campbell *et al.*) [1960). Helgason and Rehm (2023) offer a more nuanced view showing how individual economic performance attenuates the weight of socialization over the long run.

result from personal choices should be more reluctant to establish a compulsory universal healthcare program funded by all individuals.

Figure 2 (bottom panel) reveals that political ideology, measured along a left-right dimension, strongly correlates with support for public healthcare.<sup>16</sup> Public healthcare is more valued by those on the left than on the right. In the US, ideological differences are significant: right-wing Americans hardly value public healthcare, while left-wing Americans, similar to French centrists, are only slightly less supportive than French leftists. In Brazil, ideological differences are moderate, and in France, support is high across the political spectrum.

Political ideologies seem to be underpinned by respondents' view of how societies work. In the US and Brazil, public health is less valued among those who believe that high income results from high effort rather than good luck or good connections. Likewise, Brazilian and North American respondents who see income gains as a zero-sum game are more supportive of public healthcare. By contrast, in France, support for public healthcare does not vary based on these views.

Finally, the bottom panel of Figure 2 explores heterogeneous preferences depending on whether respondents care about their relative position in the economy and on their evaluation of the state of the economy. To measure status concerns, we employ a battery of debriefing questions that individuals answered after completing the survey on why they evaluate each society the way they did.<sup>[17]</sup> We obtain the principal components of those replies, where the second component captures motivations related to relative status rather than material concrete benefits (the first principal component does not discriminate across motivations). Respondents who care more for their status value the provision of public healthcare less in Brazil and France (but not in the US). By contrast, the evaluation of the state of the economy is uncorrelated with public health support.

#### 4.4 Wealth and Ideology: A Conditional Relationship

Figure 4 further probes the association between political ideology and support for public health, conditional on household wealth. The left-column graphs display the predicted rating of societies, with and without a public health system, among left-wing respondents. Right-column graphs do the same for right-wing respondents.<sup>18</sup> Ratings are demeaned by survey

<sup>&</sup>lt;sup>16</sup>Left, center, and right correspond to values 1-4, 5, and 6-10 in ideology, respectively.

<sup>&</sup>lt;sup>17</sup>These include "to keep up with friends", "to feel successful", "to afford a beautiful home", "to get compensation for hard work", "to avoid having to worry about the future", "to support my family", "to balance income and spending needs", "to afford food and housing", "to make sure all live well", "to make sure all are educated", "to make sure no one falls behind", "to make sure I do not fall behind".

<sup>&</sup>lt;sup>18</sup>To split the sample into two categories rather than three, we choose a cutpoint as close as possible to the median, which puts those previously labeled as centrists in the left-wing group.

participant, and the gap between the two lines indicates the rating difference at each level of household wealth, ranging from 0 (lowest) to 10 (highest). For instance, among left-wing Brazilians, the rating difference between societies with and without public health provision is significant and stable across household wealth levels. Left-leaning respondents support societies with public health provision more often than right-wing leaning respondents, independently of their household wealth. While left-wing respondents' preferences are rather constant across wealth levels, support for public health shrinks with household wealth for right-wing respondents. Among right-wing Americans, the overall rating differences between societies with and without public health provision are very small at any household wealth level, with the gap closing completely among the wealthiest. Overall, public health preferences change more between right-wing and left-wing respondents and across countries than across household wealth levels.



Figure 4: Public Health and Household Wealth by Left-right Ideology (AMCE)

Finally, we study how preferences change across alternatives depending on the hypothetical individual income being offered (which is orthogonal to any individual characteristics)

<sup>19</sup>Figure C.3 (Appendix C) shows similar estimates across household income levels rather than wealth.

and the respondents' ideology. The results, in figure C.4 (Appendix C), show a strong conditional relation between hypothetical income and public health preferences in the United States for right-wing respondents, but not in France nor Brazil.<sup>20</sup>

## 5 Conclusions

In this paper, we estimate the preferences for living in a society with a public health system using a novel methodology that allows us to estimate the respondents' willingness to give up individual income, political outcomes, or societal economic outcomes in exchange for a public health system. Overall, we uncover a strong preference for living in a society with a public health system. Individual incomes would need to increase by an equivalent of 50 percent of the country average income in the US and Brazil to compensate for an absence of a public health system, and by an equivalent of 200 percent of the country average income in France. We also find that a public health system is more important than other societal economic outcomes (growth, inequality, or effort rather than connections as a driver of economic mobility), with the exception of democracy.

We find that public health preferences are heterogeneous across individuals. Around 85% of French respondents, 80% of Brazilian respondents and 70% of US respondents favor a public health system. Moreover, preferences are more intense among those in favor of it than among those against it.

We find household wealth to be negatively associated with support for public healthcare. Nonetheless, the stronger correlates of the latter are the structure of other-regarding preferences and beliefs of respondents. Left-leaning individuals, respondents who believe that luck or connections determine individual income, and participants who frame social relations as a zero-sum game are much more supportive of a public health system than their complements. The only exception is France, where there is a strong consensus for public healthcare.

<sup>&</sup>lt;sup>20</sup>We interpret the similarity of the effects by wealth and hypothetical individual income conditional on ideology as indicating that our respondents are not giving particular weight to the particular structure designed to fund a public health system (a tax on income) in the experiment.

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# **Supplementary Materials**

# Appendix A Experiment Instructions

Figure A.1: Survey Instructions

Survey	ELP
In this part of the questionnaire we will ask you to choose which society you consider to be the best one for you. By 'best' we mean the society in which you think you will be most content.	
To make this choice, we will give you information for two societies at a time in terms of both the specific monthly income level of you and the income level of the average individual in each society. Income level will refer to income before paying taxes.	ls
The variety of goods and their prices are the same for both societies. For \$100, any individual should be able to buy the same goods and the same amount in both societies. Prices are expressed in today's price level.	Ð
It is important that you focus your answer on what is in the best interest of you, and nothing else. There is no 'correct' response to these questions and we ask you to reflect on the choices carefully.	5
In addition to the information about income levels, we will also give some additional information about th institutions or ways in which people organize themselves in each society.	ıe
We will provide you the information in the form of a table that includes different characteristics of each society	
After showing the table, we will ask you to choose which society you consider to be the best one for you; that is, the society in which you will be most content. It is important that you focus your answer solely on this; that is: which society is the best for you. You should not consider which society is best on the whole. We will also ask you to rate each society separately on a range from 0 (very bad) to 10 (very good)	
& Variables	

### Figure A.2: Example of Conjoint Presented to Respondent

As we discussed befor We ask you to choose you will be most cont the best for you? You prices are the same in	re, we show here two societies that may vary along one or several dimensions. which society you consider to be the best one for you; that is, the society in which ent. It is important that you focus your answer solely on this; that is: which society is should not consider which society is best on the whole. Please remember that both societies.
	Society A Society B
Monthly income of you	\$4.800 \$7,500
Average monthly income of society	\$4.800 \$6.000
Political institutions	"There are no free elections to choose the national government through free elections"
Health system	"Health is not covered by a public health system" There is a public health system paid by an income tax'
Getting ahead	"Effort is more important than personal connections to get ahead" "Personal connections matter more than effort to get ahead"
Inequality	The maximum income in the country is \$19200 and the minimum \$1200. The maximum income in the country is \$12000 and the minimum \$3000.
We will also ask you t	o rate each society separately on a range from 0 (very bad) to 10 (very good)
	Very bad Very good 0 2 3 4 5 6 7 8 9 10
	Society A O O O O O O O O O O O
	Society B O O O O O O O O O O

## Appendix B Covariate Balance Tests

	(1)	(2)	(3)	(4)	(5)	(6)	
		E[Covariate — 7	e - Treatment = 1] - E[Covariate - Treatment = 0]				
Variable	Democracy	Public Health	Effort	Equal Society	High I. Income	High C. Income	
Fraction with High Income	0.000	-0.000	0.000	-0.000	0.001	0.004	
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	
Fraction with Very High Income	0.000	0.000	0.000	0.000	0.001	0.005	
v C	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	
HH Wealth (0-10 index)	0.000	0.000	0.000	-0.000	0.005	-0.035	
, ,	(0.030)	(0.030)	(0.030)	(0.030)	(0.033)	(0.037)	
Parental Wealth (0-10 index)	0.000	0.000	-0.000	0.000	0.014	-0.034	
(	(0.031)	(0.031)	(0.031)	(0.031)	(0.034)	(0.038)	
Fraction with college	-0.000	-0.000	0.000	-0.000	-0.000	0.001	
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	
Fraction with high school or less	0.000	-0.000	-0.000	0.000	0.002	-0.000	
Fraction with man senser of 1655	(0,006)	(0,006)	(0.006)	(0.006)	(0.002)	(0.007)	
Fraction parents with college	0.000	0.000	-0.000	-0.000	-0.002	-0.001	
Fraction, parents with conege	(0.003)	(0.003)	(0.000)	(0.003)	(0.002)	(0.001)	
Fraction parents with high school or less	-0.000	0.000	0.000	-0.000	0.004)	0.000	
Fraction, parents with high school of iess	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	
Owns a cor	(0.000)	(0.000)	0.000)	(0.000)	0.001	0.003	
Owns a car	(0.006)	(0.006)	(0.000)	(0.006)	(0.001)	-0.001	
Owns a house	(0.000)	(0.000)	0.000)	(0.000)	0.007)	(0.008)	
Owns a nouse	(0.000)	(0.000)	(0.000)	(0.000)	-0.000	(0.008)	
Omma a huginaga	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	
Owns a business	(0.000)	(0.000)	(0.005)	0.000	(0.005)	(0.004)	
Encelored (full an exact time)	(0.005)	(0.005)	(0.005)	(0.005)	(0.000)	(0.007)	
Employed (full or part time)	-0.000	0.000	(0.000)	0.000	-0.003	(0.003)	
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	
Unemployed	0.000	0.000	0.000	-0.000	0.002	0.005	
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	
Age (continuous)	0.000	0.000	-0.000	0.000	0.034	-0.190	
_	(0.188)	(0.188)	(0.188)	(0.188)	(0.210)	(0.235)	
Fraction younger than 25	-0.000	-0.000	0.000	-0.000	0.000	0.002	
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	
Fraction older than 64	-0.000	0.000	0.000	-0.000	0.000	-0.004	
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	
Fraction of females	0.000	0.000	0.000	0.000	-0.000	-0.009	
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	
Fraction living in big city	0.000	-0.000	-0.000	0.000	-0.002	-0.000	
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	
Married or lives w partner	0.000	0.000	0.000	0.000	0.012	0.016	
	(0.017)	(0.017)	(0.017)	(0.017)	(0.019)	(0.021)	
Number of children	0.000	-0.000	-0.000	0.000	-0.003	-0.009	
	(0.018)	(0.018)	(0.018)	(0.018)	(0.020)	(0.022)	
Number of siblings	0.000	0.000	-0.000	-0.000	0.005	0.016	
	(0.032)	(0.032)	(0.032)	(0.032)	(0.036)	(0.040)	
Number of older siblings	0.000	0.000	0.000	-0.000	0.001	0.015	
~	(0.019)	(0.019)	(0.019)	(0.019)	(0.022)	(0.024)	
Status > Concrete (Pr. Component)	0.000	0.000	0.000	0.000	-0.001	-0.013	
· · · /	(0.014)	(0.014)	(0.014)	(0.014)	(0.016)	(0.018)	
Observations	26.740	26,740	26,740	26,740	26.740	26.740	

Table B.1: Covariate Balance, Brazil

Robust standard errors in parenthesis. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. High I. Income: individual income treatment above the country monthly average. High C. Income: country income treatment above the country average. High income: household income above the country monthly average (3000 reals/euro, or 6000 USD). Very high income: monthly household income above 5000 reals/euro 5000, or 9000 USD). Machavellianism, narcissism and psychopathy are standardized to have mean zero and standard deviation of one, from the sum of scores in 5 questions. Status > Concrete is the 2nd principal component of the responses to debriefing questions about income motivations in answering the conjoint, which features positive weights for status motivations for income and negative weights for material motivations for income.

	(1)	(2)	(2) (3) (4) (5) (6)					
		E[Covariate - Treatment = 1] - E[Covariate - Treatment = 0]						
Variable	Democracy	Public Health	Effort	Equal Society	High I. Income	High C. Income		
Fraction with High Income	-0.000	0.000	-0.000	0.000	0.000	-0.005		
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)		
Fraction with Very High Income	-0.000	-0.000	0.000	0.000	0.000	0.000		
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)		
HH Wealth (0-10 index)	0.000	0.000	0.000	0.000	-0.007	-0.036		
	(0.025)	(0.025)	(0.025)	(0.025)	(0.028)	(0.031)		
Parental Wealth (0-10 index)	0.000	0.000	-0.000	-0.000	-0.013	-0.005		
	(0.027)	(0.027)	(0.027)	(0.027)	(0.031)	(0.034)		
Fraction with college	0.000	-0.000	0.000	0.000	0.001	-0.007		
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)		
Fraction with high school or less	0.000	0.000	0.000	0.000	-0.000	0.002		
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)		
Fraction, parents with college	0.000	-0.000	-0.000	-0.000	-0.000	-0.002		
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)		
Fraction, parents with high school or less	0.000	0.000	-0.000	-0.000	0.001	0.003		
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)		
Owns a car	-0.000	-0.000	-0.000	-0.000	-0.002	0.002		
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.007)		
Owns a house	0.000	0.000	0.000	0.000	-0.001	0.007		
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.009)		
Owns a business	0.000	0.000	0.000	0.000	0.000	0.003		
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)		
Employed (full or part time)	-0.000	-0.000	-0.000	0.000	0.002	0.000		
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)		
Unemployed	0.000	0.000	-0.000	0.000	-0.001	-0.001		
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)		
Age (continuous)	-0.000	-0.000	-0.000	0.000	0.037	-0.093		
<u> </u>	(0.226)	(0.226)	(0.226)	(0.226)	(0.253)	(0.282)		
Fraction younger than 25	0.000	-0.000	0.000	-0.000	-0.000	0.001		
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)		
Fraction older than 64	-0.000	0.000	0.000	0.000	-0.001	-0.003		
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)		
Fraction of females	-0.000	-0.000	-0.000	-0.000	-0.002	-0.002		
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)		
Fraction living in big city	0.000	-0.000	-0.000	-0.000	-0.002	-0.003		
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)		
Married or lives w partner	0.000	0.000	0.000	0.000	-0.002	0.016		
-	(0.016)	(0.016)	(0.016)	(0.016)	(0.018)	(0.020)		
Number of children	0.000	-0.000	0.000	0.000	0.001	-0.011		
	(0.017)	(0.017)	(0.017)	(0.017)	(0.019)	(0.021)		
Number of siblings	-0.000	-0.000	0.000	-0.000	0.019	0.029		
ő	(0.026)	(0.026)	(0.026)	(0.026)	(0.030)	(0.033)		
Number of older siblings	0.000	-0.000	0.000	0.000	0.009	0.021		
5	(0.018)	(0.018)	(0.018)	(0.018)	(0.020)	(0.022)		
Status > Concrete (Pr. Component)	0.000	0.000	0.000	0.000	-0.006	-0.004		
	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)	(0.015)		
Observations	23,702	23,702	23,702	23,702	23,702	23,702		

Table	B.2:	Covariate	Balance.	France
Table	D.2.	Covariance	Darance,	LIGHOU

Robust standard errors in parenthesis. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. High I. Income: individual income treatment above the country monthly average. High C. Income: country income treatment above the country average. High income: household income above the country monthly average (3000 reals/euro, or 6000 USD). Very high income: monthly household income above 5000 reals/euro 5000, or 9000 USD). Machavellianism, narcissism and psychopathy are standardized to have mean zero and standard deviation of one, from the sum of scores in 5 questions. Status > Concrete is the 2nd principal component of the responses to debriefing questions about income motivations in answering the conjoint, which features positive weights for status motivations for income and negative weights for material motivations for income.

	(1)	(2)	(3)	(4)	(5)	(6)	
		E[Covariate — '	- Treatment = 1] - $E[Covariate - Treatment = 0]$				
Variable	Democracy	Public Health	Effort	Equal Society	High I. Income	High C. Income	
Fraction with High Income	0.000	-0.000	-0.000	0.000	-0.005	-0.005	
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	
Fraction with Very High Income	-0.000	-0.000	-0.000	-0.000	-0.002	-0.000	
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	
HH Wealth (0-10 index)	0.000	0.000	-0.000	-0.000	0.014	0.003	
· · · · ·	(0.030)	(0.030)	(0.030)	(0.030)	(0.034)	(0.038)	
Parental Wealth (0-10 index)	-0.000	-0.000	-0.000	0.000	-0.002	-0.009	
	(0.031)	(0.031)	(0.031)	(0.031)	(0.035)	(0.039)	
Fraction with college	0.000	0.000	0.000	0.000	-0.001	-0.001	
Ŭ	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	
Fraction with high school or less	0.000	-0.000	0.000	0.000	0.001	0.003	
0	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	
Fraction, parents with college	-0.000	0.000	0.000	0.000	0.000	-0.002	
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	
Fraction, parents with high school or less	-0.000	0.000	0.000	-0.000	0.000	0.002	
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	
Owns a car	0.000	0.000	0.000	0.000	0.003	-0.000	
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	
Owns a house	0.000	-0.000	-0.000	-0.000	0.001	-0.002	
o wills a house	(0.007)	(0.000)	(0.007)	(0.007)	(0.001)	(0,002)	
Owns a husiness	0.000	0.000	0.000	0.000	0.002	-0.000	
Owns a business	(0.000)	(0.004)	(0.000)	(0.000)	(0.002)	(0,006)	
Employed (full or part time)	0.000	0.000	-0.000	-0.000	0.000	-0.004	
Employed (full of part time)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.004)	
Unomployed	0.000	0.000	0.000	0.000	0.007)	0.002	
Ollemployed	(0.004)	(0.000)	(0.000)	(0.004)	(0.003)	(0.002)	
Age (continuous)	(0.004)	(0.004)	0.004)	(0.004)	(0.004)	(0.005)	
Age (continuous)	(0.222)	(0.222)	(0.000)	(0.222)	(0.248)	(0.311)	
Fraction younger than 25	0.222)	0.000	(0.222)	0.000	0.002	(0.211)	
Fraction younger than 25	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.003)	
Fraction older than 64	(0.003)	(0.003)	0.003)	(0.003)	(0.004)	(0.004)	
Fraction order than 04	-0.000	-0.000	(0.000)	(0.006)	(0.005)	(0.002)	
Ensetion of formalian	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)	(0.007)	
Fraction of lemales	-0.000	-0.000	(0.000)	-0.000	-0.001	-0.001	
Function lining in his sites	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)	(0.008)	
Fraction living in big city	(0.000)	-0.000	(0.000)	(0.000)	(0.002)	0.000	
Mannial an linear an antonan	(0.000)	(0.000)	(0.000)	(0.000)	(0.007)	(0.008)	
Married or lives w partner	0.000	0.000	-0.000	-0.000	-0.001	-0.001	
	(0.015)	(0.015)	(0.015)	(0.015)	(0.017)	(0.019)	
Number of children	-0.000	-0.000	0.000	-0.000	-0.009	0.008	
	(0.020)	(0.020)	(0.020)	(0.020)	(0.022)	(0.024)	
Number of siblings	-0.000	0.000	-0.000	-0.000	0.013	0.014	
	(0.028)	(0.028)	(0.028)	(0.028)	(0.031)	(0.035)	
Number of older siblings	0.000	0.000	-0.000	0.000	0.007	0.001	
	(0.019)	(0.019)	(0.019)	(0.019)	(0.021)	(0.023)	
Status > Concrete (Pr. Component)	0.000	0.000	-0.000	0.000	-0.004	0.005	
	(0.016)	(0.016)	(0.016)	(0.016)	(0.018)	(0.020)	
Observations	22,736	22,736	22,736	22,736	22,736	22,736	

Table B.3: Covariate Balance, US

Robust standard errors in parenthesis. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. High I. Income: individual income treatment above the country monthly average. High C. Income: country income treatment above the country average. High income: household income above the country monthly average (3000 reals/euro, or 6000 USD). Very high income: monthly household income above 5000 reals/euro 5000, or 9000 USD). Machavellianism, narcissism and psychopathy are standardized to have mean zero and standard deviation of one, from the sum of scores in 5 questions. Status > Concrete is the 2nd principal component of the responses to debriefing questions about income motivations in answering the conjoint, which features positive weights for status motivations for income and negative weights for material motivations for income.

## Appendix C Additional Tests

	Brazil		Fra	ance	US		
	(1)	(2)	(3)	(4)	(5)	(6)	
	Income:	Income: \$1,000 PPP	Income:	Income: \$1,000 PPP	Income:	Income: \$1,000 PPP	
Public Health	0 142***	$0.142^{***}$	0.326***	0.326***	0.132***	0.132***	
I ubite Health	(0.00900)	(0.00900)	(0.0104)	(0.0104)	(0.132)	(0.00971)	
	(0.00500)	(0.00500)	(0.0101)	(0.0101)	(0.00511)	(0.00011)	
Democracy	$0.403^{***}$	$0.403^{***}$	$0.373^{***}$	$0.373^{***}$	$0.497^{***}$	$0.497^{***}$	
	(0.0109)	(0.0109)	(0.0111)	(0.0111)	(0.0121)	(0.0121)	
Effort matters	0 0328***	0.0328***	0 0784***	0 0784***	0 0736***	0 0736***	
	(0.00831)	(0.00831)	(0.00817)	(0.00817)	(0.00897)	(0.00897)	
	(0100000)	(0.00000)	(0.0001.)	(0100011)	(0.0000)	(0.0000)	
More Equal Society	$0.0273^{**}$	$0.0273^{**}$	$0.0723^{***}$	$0.0723^{***}$	-0.00719	-0.00719	
	(0.00844)	(0.00844)	(0.00879)	(0.00879)	(0.00869)	(0.00869)	
Country Income (100% increase)	0 102***		-0.0306		0.0142		
	(0.0157)		(0.0164)		(0.0170)		
					()		
Country Income (\$1,000 PPP increase)		0.0806***		-0.00744		0.00236	
		(0.0123)		(0.00399)		(0.00283)	
Individual Income (100% Increase)	$0.124^{***}$		0.160***		$0.113^{***}$		
	(0.0333)		(0.0352)		(0.0339)		
	· · · ·						
Individual Income (\$1,000 PPP Increase)		0.0977***		0.0389***		0.0188***	
		(0.0262)		(0.00855)		(0.00565)	
WTP (normalized income)	114.6***		203.7***		116.4**		
	(31.22)		(45.29)		(35.97)		
WTP (in $$1,000$ PPP)		1.457***		8.371***		6.982**	
		(0.397)		(1.861)		(2.158)	
WPH	0.171***		0.313***		$0.157^{***}$		
	(0.0122)		(0.0150)		(0.0126)		
WDU		0 100***		0.909***		0 100***	
WРП		$(0.182^{\circ\circ\circ})$		(0.0116)		$(0.180^{-1})$	
N	26740	26740	23702	23702	22736	22736	
± *	20140	20140	20102	20102	22100	22100	

#### Table C.1: AMCEs, WTP, and WPH. Measurement: choices.

Top panel entries are AMCEs, estimated with individual-specific pair fixed effects and position controls, and with standard errors clustered by survey participant. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01. WTP is the ratio of Public Health and Individual Income AMCEs, WPH is the ratio of the Public Health AMCE over the sum of the absolute values of all other AMCEs. Delta Method standard errors are in parentheses.



Figure C.1: AMCEs with and without pair fixed effects.

#### Figure C.2: AMCEs, WTP, and WPH, without pair FE. Measurement: ratings.

	Br	azil	Fra	ance	US		
	(1) Income: normalized	(2) Income: \$1,000 PPP	(3) Income: normalized	(4) Income: \$1,000 PPP	(5) Income: normalized	(6) Income: \$1,000 PPP	
Public Health	$\begin{array}{c} 0.493^{***} \\ (0.0330) \end{array}$	$\begin{array}{c} 0.493^{***} \\ (0.0330) \end{array}$	$\begin{array}{c} 0.852^{***} \\ (0.0330) \end{array}$	$\begin{array}{c} 0.852^{***} \\ (0.0330) \end{array}$	$\begin{array}{c} 0.372^{***} \\ (0.0361) \end{array}$	$0.372^{***}$ (0.0361)	
Democracy	$1.278^{***}$ (0.0456)	$1.278^{***}$ (0.0456)	$1.009^{***}$ (0.0350)	$1.009^{***}$ (0.0350)	$1.510^{***}$ (0.0515)	$1.510^{***}$ (0.0515)	
Effort matters	$\begin{array}{c} 0.114^{***} \\ (0.0324) \end{array}$	$\begin{array}{c} 0.114^{***} \\ (0.0324) \end{array}$	$0.233^{***}$ (0.0265)	$\begin{array}{c} 0.233^{***} \\ (0.0265) \end{array}$	$0.277^{***}$ (0.0337)	$0.277^{***}$ (0.0337)	
More Equal Society	$\begin{array}{c} 0.0150 \\ (0.0341) \end{array}$	$\begin{array}{c} 0.0150 \\ (0.0341) \end{array}$	$0.173^{***}$ (0.0283)	$\begin{array}{c} 0.173^{***} \\ (0.0283) \end{array}$	$\begin{array}{c} 0.00792 \\ (0.0338) \end{array}$	$\begin{array}{c} 0.00792 \\ (0.0338) \end{array}$	
Country Income (100% increase)	$0.305^{***}$ (0.0479)		-0.0563 (0.0393)		0.0416 (0.0496)		
Country Income (\$1,000 PPP increase)		$\begin{array}{c} 0.240^{***} \\ (0.0377) \end{array}$		-0.0137 (0.00955)		0.00693 (0.00826)	
Individual Income (100% Increase)	$0.525^{***}$ (0.0889)		$0.360^{***}$ (0.0710)		$\begin{array}{c} 0.538^{***} \\ (0.0865) \end{array}$		
Individual Income (\$1,000 PPP Increase)		$\begin{array}{c} 0.413^{***} \\ (0.0699) \end{array}$		$\begin{array}{c} 0.0875^{***} \\ (0.0173) \end{array}$		$\begin{array}{c} 0.0897^{***} \\ (0.0144) \end{array}$	
WTP (normalized income)	94.00*** (16.90)		$237.0^{***}$ (48.40)		$ \begin{array}{c} 69.19^{***} \\ (13.10) \end{array} $		
WTP (in \$1,000 PPP)		$\frac{1.195^{***}}{(0.215)}$		$9.740^{***}$ (1.989)		$\begin{array}{c} 4.152^{***} \\ (0.786) \end{array}$	
WPH	$\begin{array}{c} 0.181^{***} \\ (0.0122) \end{array}$		$\begin{array}{c} 0.318^{***} \\ (0.0136) \end{array}$		$\begin{array}{c} 0.136^{***} \\ (0.0130) \end{array}$		
WPH		$0.193^{***}$ (0.0124)		$0.360^{***}$ (0.0116)		$0.165^{***}$ (0.0143)	
N	26740	26740	23702	23702	22736	22736	

Top panel entries are AMCEs, estimated with order and position controls, and with standard errors clustered by survey participant. \* p < 0.00, \*\* p < 0.05, \*\*\* p < 0.01. WTP is the ratio of Public Health and Individual Income AMCEs, WPH is the ratio of the Public Health AMCE over the sum of the absolute values of all other AMCEs. Delta Method standard errors are in parentheses. 7

Table C.2: Heterogeneous AMCEs across groups, Brazil. Dependent variable: rating

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health						
(when covariate is 0						
or equal to the mean)	$0.494^{***}$	$0.472^{***}$	$0.480^{***}$	$0.493^{***}$	$0.470^{***}$	$0.471^{***}$
	(0.0330)	(0.0444)	(0.0372)	(0.0330)	(0.0472)	(0.0892)
Public Health $\times$ Covariate	-0.0190	0.0471	0.0800	$-0.00419^{*}$	0.0447	0.0170
	(0.0146)	(0.0667)	(0.0798)	(0.00215)	(0.0662)	(0.0617)
N	26740	26740	26740	26740	26740	26740
Covariate	HH Wealth	High Income	College	Age	Female	Urban
Range	(0-10)	(0-1)	(0-1)	(16-91)	(0-1)	(0-1)
Country	Brazil	Brazil	Brazil	Brazil	Brazil	Brazil

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE. Continuous covariates are demeaned.

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health (when covariate is 0						
or equal to the mean)	$0.494^{***}$	$0.494^{***}$	$0.492^{***}$	$0.494^{***}$	$0.493^{***}$	$0.494^{***}$
	(0.0330)	(0.0329)	(0.0329)	(0.0330)	(0.0330)	(0.0327)
Public Health $\times$ Covariate	-0.0364	-0.110***	-0.0375	$-0.0214^{*}$	-0.0221*	-0.160***
	(0.0358)	(0.0378)	(0.0350)	(0.0120)	(0.0130)	(0.0310)
N	26740	26740	26740	26740	26740	26740
Covariate	Machiavellianism	Narcissism	Psychopathy	Risk pref.	Impatience	Status > concrete
Range	(-3.5-3.5)	(-3.5-3.5)	(-2.15-4.15)	(0-10)	(0-10)	(PC)
Country	Brazil	Brazil	Brazil	Brazil	Brazil	Brazil

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE. Continuous covariates are demeaned.

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health (when covariate is 0						
or equal to the mean)	$0.493^{***}$	$0.492^{***}$	$0.553^{***}$	0.623***	$0.493^{***}$	$0.494^{***}$
	(0.0329)	(0.0329)	(0.0405)	(0.0498)	(0.0329)	(0.0330)
Public Health $\times$ Covariate	-0.0385***	0.0808***	-0.200***	-0.238***	-0.0432	0.116**
	(0.0145)	(0.0295)	(0.0695)	(0.0664)	(0.0432)	(0.0454)
N	26740	26740	26740	26740	26740	26740
Covariate	Right wing	Zero-sum	Low Income is Effort	High Income is Effort	Pro-trade	Economy Evaluation
Range	(1-10)	(1-5)	(0-1)	(0-1)	(1-5)	(1-4)
Country	Brazil	Brazil	Brazil	Brazil	Brazil	Brazil

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE.

Continuous covariates are demeaned.

Table C.3: Heterogeneous AMCEs across groups, France. Dependent variable: rating

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health						
(when covariate is 0						
or equal to the mean)	$0.851^{***}$	$0.894^{***}$	$0.884^{***}$	$0.852^{***}$	$0.857^{***}$	$0.796^{***}$
	(0.0329)	(0.0413)	(0.0449)	(0.0330)	(0.0479)	(0.0876)
Public Health $\times$ Covariate	-0.0453**	-0.130*	-0.0739	0.00113	-0.0116	0.0301
	(0.0192)	(0.0684)	(0.0661)	(0.00189)	(0.0663)	(0.0439)
N	23702	23702	23702	23702	23702	23702
Covariate	HH Wealth	High Income	College	Age	Female	Urban
Range	(0-10)	(0-1)	(0-1)	(16-91)	(0-1)	(0-1)
Country	France	France	France	France	France	France

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE. Continuous covariates are demeaned.

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health (when covariate is 0						
or equal to the mean)	$0.851^{***}$	$0.852^{***}$	$0.852^{***}$	$0.853^{***}$	$0.852^{***}$	$0.849^{***}$
	(0.0330)	(0.0329)	(0.0330)	(0.0329)	(0.0330)	(0.0327)
Public Health $\times$ Covariate	-0.0237	-0.0691*	$-0.0710^{*}$	-0.0369**	0.0127	-0.183***
	(0.0365)	(0.0384)	(0.0429)	(0.0166)	(0.0172)	(0.0386)
N	23702	23702	23702	23702	23702	23702
Covariate	Machiavellianism	Narcissism	Psychopathy	Risk pref.	Impatience	Status > concrete
Range	(-3.5-3.5)	(-3.5-3.5)	(-2.15-4.15)	(0-10)	(0-10)	(PC)
Country	France	France	France	France	France	France

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE. Continuous covariates are demeaned.

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health (when covariate is 0						
or equal to the mean)	$0.852^{***}$	$0.851^{***}$	$0.841^{***}$	$0.834^{***}$	$0.850^{***}$	$0.851^{***}$
	(0.0329)	(0.0330)	(0.0403)	(0.0486)	(0.0330)	(0.0330)
Public Health $\times$ Covariate	-0.0393**	-0.00724	0.0347	0.0327	-0.00924	0.00118
	(0.0163)	(0.0334)	(0.0706)	(0.0664)	(0.0381)	(0.0478)
N	23702	23702	23702	23702	23702	23702
Covariate	Right wing	Zero-sum	Low Income is Effort	High Income is Effort	Pro-trade	Economy Evaluation
Range	(1-10)	(1-5)	(0-1)	(0-1)	(1-5)	(1-4)
Country	France	France	France	France	France	France

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE.

Continuous covariates are demeaned.

Table C.4: Heterogeneous AMCEs across groups, US. Dependent variable: rating

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health						
(when covariate is 0						
or equal to the mean)	$0.372^{***}$	$0.395^{***}$	$0.372^{***}$	$0.375^{***}$	$0.313^{***}$	$0.407^{***}$
	(0.0359)	(0.0426)	(0.0452)	(0.0358)	(0.0567)	(0.0959)
Public Health × Coveriate	0.0549***	0.0746	0.000562	0.00208	0.0036	0.0180
i ublic fleattii × Covaliate	-0.0342	-0.0740	0.000302	-0.00298	0.0930	-0.0189
	(0.0162)	(0.0803)	(0.0752)	(0.00211)	(0.0736)	(0.0489)
N	22736	22736	22736	22736	22736	22736
Covariate	HH Wealth	High Income	College	Age	Female	Urban
Range	(0-10)	(0-1)	(0-1)	(16-91)	(0-1)	(0-1)
Country	US	US	US	US	US	US

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE. Continuous covariates are demeaned.

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health (when covariate is 0						
or equal to the mean)	$0.378^{***}$	$0.374^{***}$	$0.377^{***}$	$0.373^{***}$	$0.373^{***}$	$0.378^{***}$
	(0.0358)	(0.0360)	(0.0358)	(0.0361)	(0.0360)	(0.0355)
Public Health $\times$ Covariate	0.0169	0.0143	-0.00929	-0.00336	-0.00947	-0.0840***
	(0.0390)	(0.0336)	(0.0360)	(0.0145)	(0.0153)	(0.0297)
N	22736	22736	22736	22736	22736	22736
Covariate	Machiavellianism	Narcissism	Psychopathy	Risk pref.	Impatience	Status > concrete
Range	(-3.5-3.5)	(-3.5-3.5)	(-2.15-4.15)	(0-10)	(0-10)	(PC)
Country	US	US	US	US	US	US

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE. Continuous covariates are demeaned.

	(1)	(2)	(3)	(4)	(5)	(6)
Public Health (when covariate is 0						
or equal to the mean)	$0.373^{***}$	$0.374^{***}$	$0.534^{***}$	0.460***	$0.373^{***}$	$0.375^{***}$
	(0.0353)	(0.0357)	(0.0492)	(0.0535)	(0.0359)	(0.0359)
Public Health $\times$ Covariate	-0.118***	0.126***	-0.323***	-0.161**	0.0654	-0.0909*
	(0.0161)	(0.0367)	(0.0719)	(0.0727)	(0.0456)	(0.0495)
N	22736	22736	22736	22736	22736	22736
Covariate	Right wing	Zero-sum	Low Income is Effort	High Income is Effort	Pro-trade	Economy Evaluation
Range	(1-10)	(1-5)	(0-1)	(0-1)	(1-5)	(1-4)
Country	US	US	US	US	US	US

Standard errors clustered by survey participant in parentheses. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

All regressions control for all attributes and their interaction with the covariates, and individual, order, and position FE.

Continuous covariates are demeaned.



Figure C.3: Public health and household income by left-right ideology (AMCE)



Figure C.4: Public health and hypothetical income depending on left-right ideology

Figure C.5: Percentiles of the Individual Marginal Component Effects (IMCEs), from choices







Figure C.7: Percentiles of the individual weight of public health (IWPH), from choices



Figure C.8: Heterogeneity: individual marginal component effects (IMCEs), from ratings



#### **Public Health IMCEs**

## **Public Health IMCEs**



#### 2020

2020/01, Daniele, G.; Piolatto, A.; Sas, W.: "Does the winner take it all? Redistributive policies and political extremism"

2020/02, Sanz, C.; Solé-Ollé, A.; Sorribas-Navarro, P.: "Betrayed by the elites: how corruption amplifies the political effects of recessions"

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