Trust, Fairness and Polarization: New Comparative Evidence

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Abstract

Despite clear and well-established cross-country differences in redistributive preferences, and substantive evidence of the importance of other-regarding concerns in determining these preferences, we know surprisingly little about how fairness preferences regarding taxation vary across countries. This paper contributes to filling this gap by conducting equivalent conjoint survey experiments in the U.S., Australia, Chile and Argentina. Building on evidence of a clear ideological polarization in fairness preferences in the U.S., it examines the extent to which trust in government moderates this polarization in fairness preferences regarding taxation.

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1 Motivation

Do people in different countries have different expectations of what a fair distribution of the tax burden is? What about within countries? Are these differences related to other country-level characteristics? While we know a lot about cross-country variation in redistributive preferences (Beramendi and Rehm 2016; Corneo and Grüner 2002; Guillaud 2013; Rueda and Stegmueller 2016), and a fair amount about the role played by fairness concerns in driving these preferences (Alesina and Angeletos 2005; Almás, Cappelen and Tungodden 2020; Cappelen et al. 2013; Dimick, Rueda and Stegmueller 2016; Isaksson and Lindskog 2009), our knowledge of fairness preferences regarding taxation is still limited both within and across countries. This paper contributes to filling this gap by presenting the results of an original survey experiment run in four countries: USA, Australia, Chile and Argentina. The experiment provides unbiased and comparable estimates of which fairness ideals people apply when deciding how to distribute the tax burden, and a theory-driven country selection allows me to shed light on the relationship between the ideological polarization of mass preferences, trust in government and support for redistribution.

Comparative research has shown that redistributive preferences vary significantly from country to country, with some countries exhibiting greater “tastes for equality” than others (Kenworthy and Pontusson 2005). Cross-country research of fairness judgements indicates that at least part of this variation results from differences either in beliefs regarding the sources of income inequality (Alesina and Angeletos 2005; Isaksson and Lindskog 2009), or in what is considered as fair in each society (Almás, Cappelen and Tungodden 2020). However, most of this research focuses on redistributive preferences in general, or preferences for social spending in particular. Despite the fact that taxes are a major component of redistribution (Guillaud, Ockers and Zemmour 2017), we know very little about whether or how fairness preferences regarding taxation vary cross nationally.

Existing studies focus on attitudes toward tax progressivity and find that these vary significantly across countries, but this variation is not easily related to welfare regimes or institutional factors (Barnes 2015; Berens and Gelepithis 2019; Roosma, Van Oorschot and Gelissen 2016). Overall however, comparative studies on the topic are not only
limited in number but also in scope (they include a limited range of countries) and in breadth (they each focus on only one type of fairness).

To better understand what fairness considerations people apply when deciding how to distribute the tax burden, I designed a conjoint survey experiment which allowed me to understand the relative importance of three different fairness ideals - ability to pay, deservingness and compensation - across different groups of people. I applied it to a sample of 2,000 U.S. respondents and found that one of the most striking features of my results was the clear polarization in the preferences of self-reported liberals and conservatives. In this paper, I develop hypotheses as to why this may be the case and expand my study to other countries in a manner that helps me understand this polarization from a comparative perspective. To do this, I ask: does trust in government moderate partisan polarization in fairness preferences regarding taxation?

By carefully incorporating insights from the political behavior literature, I help make sense of disparate comparative political economy findings and elucidate the relationship between trust in the government and redistributive preferences. Moreover, expanding upon the range of countries usually considered in research on tax attitudes contributes to broadening our knowledge base.

One prominent finding is that despite the important differences in the countries studied, fairness preferences for taxation are fairly similar. The same cannot be said about the differences in these preferences across ideological lines though (what I here call polarization). In this regard, findings suggest that trust in government plays an important role in structuring preferences regarding the role of the state in countries with low support for redistribution. In low-trust countries like the US, the asymmetric effect of trust leads to ideological polarization in mass preferences, something that does not occur in high-trust countries. In high support for redistribution countries, on the other hand, the importance of trust is much diminished, and preferences exhibit a high level of convergence across ideological (and even income) lines.

The paper proceeds as follows. I start with a quick overview of the literature on tax fairness preferences. I then present the conjoint design and discuss U.S. results. Section 5 reviews the literature on trust in government and support for redistribution before de-
veloping my hypotheses. Section 6 discusses case selection and data collection. Section 7 presents the analytical strategy and cross-country results. Section 8 presents additional micro-level evidence of the mechanisms proposed. Section 9 evaluates alternative explanations. Section 10 discusses the results of different robustness tests. The final section discusses the implications of my findings and potential ways forward.

2 Fairness in Taxation

In the last decade, researchers have increasingly recognized the importance of fairness concerns in explaining individual preferences regarding taxation (Alesina and Angeletos 2005; Durante, Putterman and Weele 2014; Fong 2001). However, our knowledge is still limited with regards to the different types of fairness considerations that are used when thinking about taxation, who uses which, and what their relative importance is. Recent advances have sought to go beyond the traditional focus on ability to pay by conceptualizing fairness as deservingness (or perceived worthiness), inequality aversion and compensation.

Progressive taxation has typically been promoted on the basis of ability to pay arguments that essentially maintain that in order to be fair tax payments should involve an equal sacrifice or welfare loss on the part of all taxpayers. Given the decreasing marginal utility of income, this equality is achieved by having tax rates increase with income. As such, progressive taxes in line with ability to pay have been the standard prescription of both normative and positive models of taxation since the development of the workhorse model of optimal tax theory in the 1970s (Mirrlees 1971).

The literature on deservingness has developed more recently and refers to the notion that depending on how income (or wealth) is produced, some people are more deserving of their income than others and it is therefore fair that they should retain a higher share of it through lower taxes. This concept has been operationalized in two distinct ways. On the one hand, formal and observational studies have focused on the role of abstract beliefs about how income is produced to show that people who believe income is the result of effort prefer lower taxes than those who believe it is the result of luck. These
beliefs have most notably been used to explain differences regarding the preferred level of taxation in the U.S. and Europe (Alesina and Glaeser 2004; Piketty 1995). On the other hand, experimental studies have manipulated the source of income to show that subjects prefer higher taxes when income results from luck than when it results from effort (Chow and Galak 2012; Fong and Luttmer 2011; Lefgren, Sims and Stoddard 2016). Durante, Putterman and Weele (2014) expand upon this distinction to include income resulting from initial conditions or opportunity, and find that it results in intermediate levels of taxation.

Inequality aversion refers to the fact that for some individuals a more equitable allocation of outcomes in society increases their utility, making them willing to give up some material payoff to move in this direction (Alesina and Giuliano 2011; Fehr and Schmidt 1999; 2006). Ultimately however, these views are often found to be grounded on ideas of deservingness, in the sense that people who think income results from luck are more inequity averse than those who think it results from effort (Esarey, Salmon and Barrilleaux 2012).

In a series of publications, Scheve and Stasavage argue that the fairness concern that has led to the highest increases in tax progressivity in modern times is compensation (2010; 2012; 2016). Compensatory arguments essentially claim that when interventions by the state have privileged the rich, they should pay higher taxes to restore treatment as equals. Observational research suggests these arguments were successful in promoting the highest rates of progressive taxation in the context of mass mobilization wars (Scheve and Stasavage 2012; 2016), as well as more modest increases in tax progressivity in the aftermath of the 2008 financial crisis (Limberg 2019). Alvarado (2018) uses experimental evidence to show that compensatory arguments are an important component of fairness preferences in taxation even in non-crisis times, as individuals use income taxes to compensate for prior sources of unfairness in the allocation of state benefits.

Though rapidly growing, comparative studies on fairness preferences regarding taxa-

1Similarly, studies focusing on the influence of contextual characteristics on inequality aversion argue that this effect works through changes in beliefs about deservingness (i.e., exposure to inequality causes people to doubt the extent to which income results from effort and therefore support more redistribution) (McCall et al. 2017).
tion still exhibit important limitations. Perhaps the most important one is that they all focus on single conceptions of fairness. By studying attitudes towards tax progressivity, most concentrate on the determinants of ability to pay concerns (Barnes 2015; Berens and Gelepithis 2019; Bernasconi 2006; Roosma, Van Oorschot and Gelissen 2016). (Lü and Scheve 2016) make an important contribution by studying the role of inequity aversion in determining tax preferences in the U.S. and France. Moreover, most of them (with the exception of Lü and Scheve (2016)) are observational (indeed, most use the same ISSP data set), which raises the issue of potential confounders, particularly in the presence of broad measures of fairness preferences. And finally, all of these analyses are limited to advanced democracies mainly in North America and Europe, with the addition of Israel, Japan, South Korea, Australia and New Zealand.

The design presented below sought to overcome the first two limitations by experimentally measuring the relative importance of three different fairness concerns: ability to pay, deservingness and compensation. Its replication in Australia, Chile and Argentina addressed the last limitation by expanding the scope of comparative research on fairness in taxation to a new region, Latin America.

3 Experimental Design

While focusing on the U.S. version, this section describes the conjoint experiment that was applied in all four countries. Attribute levels were adapted to each country, following the same logic used in the U.S. case, to ensure they made sense to local respondents and were interpreted in the manner intended. See Supplementary Information (SI) for details.

Conjoint survey experiments are demonstrably suited to the task of measuring preferences and uncovering the determinants of multi-dimensional decision-making (see for example Ballard-Rosa, Martin and Scheve (2017); Bansak, Hainmueller and Hangartner (2016); Hainmueller and Hopkins (2015)). They typically “ask respondents to choose from or rate hypothetical profiles that combine multiple attributes, enabling researchers to estimate the relative influence of each attribute value on the resulting choice or rating” (Hainmueller, Hopkins and Yamamoto 2014). In this case, respondents were presented
with pairs of profiles in which income level and source of income were randomly varied, and asked to choose which one of these profiles should pay a higher income tax rate. This design allows me to identify which individual attributes people take into consideration when deciding how to distribute the tax burden, as a way of getting at which fairness considerations they are applying. The main intuition, summarized in table 1, is that if people apply ability to pay considerations (i.e., they think richer people should pay more taxes) they should choose on the basis of level of income; if they apply deservingness considerations (i.e., they think people who did not exert effort should pay more) they should choose on the basis of source of income; and if they apply compensatory considerations (i.e., they think people who have benefitted from the state should pay more) they should choose on the basis of whether the source of income resulted from a state benefit. Compensatory considerations are thus considered as a particular instance of the broader deservingness debate.

Table 1: Attributes, Attribute Levels and Fairness Tests

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Attribute Levels</th>
<th>Fairness Argument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual income</td>
<td>$30,000, $80,000, $150,000</td>
<td>Ability to pay</td>
</tr>
<tr>
<td>Source of income</td>
<td>Started own small business,</td>
<td>Deservingness</td>
</tr>
<tr>
<td></td>
<td>Receives annuity from a lottery prize,</td>
<td>Deservingness</td>
</tr>
<tr>
<td></td>
<td>Got a job through family connections,</td>
<td>Deservingness</td>
</tr>
<tr>
<td></td>
<td>Owns business that was bailed out by government</td>
<td>Compensation/Deservingness</td>
</tr>
</tbody>
</table>

My conjoint design offers several advantages. First, estimates for all attributes will represent effects on the same outcome (the probability that a profile will be chosen to receive the higher tax rate), which means they can be compared in order to assess the relative influence of different attributes (and ultimately, fairness considerations). Doing so expands upon previous experimental research on tax fairness, which has only manipulated one attribute at a time, leaving questions regarding the relative importance of and potential interactions between different conceptions of fairness unanswered. Second, one noteworthy exception is the work by Lefgren, Sims and Stoddard (2016), which varies both reward (high vs low) and effort (high vs low). However, their work examines peoples’ preferences for rewarding effort (by focusing on the interaction between the level of effort and reward), rather than disentangling the effect of each. Moreover, taxes are fully redistributive in their setting and participants.
the fact that attributes vary randomly allows me to identify the independent effects of correlated attributes. In fact, as a result of studying conceptions of fairness individually, existing estimates are biased by the confounding of level and source of income, as people infer the latter from the former (i.e., people tend to assume that the rich earned their wealth through effort (Weiner and Kukla 1970)). Third, the forced choice component - as opposed to asking respondents to directly assign a tax rate to each profile-, neutralizes attitudes about the overall level of taxation and identifies the attributes that make citizens appear as more or less taxable to the respondent. This allows me to disentangle preferences regarding the size of taxation from the distributive issues linked to its shape (Barnes 2015). Fourth, leaving the intended use of the revenue collected unspecified means I can focus on respondents’ preferences for how to distribute the tax burden, assuming that due to random assignment beliefs about spending will be balanced across treatment groups (Ballard-Rosa, Martin and Scheve 2017). Fifth, I can assess the existence of heterogeneity in preferences by respondent characteristics. In this regard, it is especially interesting to examine the moderating effect of ideology, as previous research has shown that it has a large effect on preferences for progressivity across countries and income levels (Bernasconi 2006). Finally, the absence of material stakes in conjoint designs helps to minimize the presence of self-serving bias.

Table 1 presents the attribute levels that were randomly assigned to profiles in the survey. Annual incomes represent low, middle and high income levels (in the 40th, 80th and 95th percentiles of the income distribution, respectively). Sources of income represent effort, luck, social background and state benefit and were chosen so as to be independent of level of income.

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To see the complete survey go to https://nyu.qualtrics.com/jfe/preview/SV_ehflU3JU04VDDaR?Q_CHL=preview. The survey was programmed in Qualtrics using the “Conjoint Survey Design Tool” made available by Strezhnev et al. (2013).

Conjoint tables in the survey included an additional attribute, Percentage of income paid in sales taxes, that will not be considered here. Including it does not change any of the results.

Sources of income used were the subject of a formative study which sought to identify sources of income that would be interpreted as resulting from effort, luck, social background and state benefit, and

are parties to this redistribution, raising additional concerns regarding their relative performance within the group.

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In order to maximize the number of observations and allow respondents to familiarize themselves with the format of the experiment, each subject saw 5 pairs of profiles. After the first pair of profiles, they were asked to justify their choice in an open ended question. After completing their 5 choice tasks, respondents were asked to fill a survey asking for their socio-demographic information (age, gender, education, household income, partisanship, employment status, race, marital status, ideology and zip code of residence). They were also asked to answer questions regarding their general preferences for progressivity, and their opinion about current levels of inequality.

The U.S. survey was conducted in October 2017 on an online sample of 2,000 U.S. residents on Amazon’s Mechanical Turk (MTurk). Evidence that results from convenience samples such as MTurk replicate in national probability samples is by now compelling (Berinsky, Huber and Lenz 2012; Coppock 2019). Nonetheless, to address potential concerns regarding the external validity of my findings, entropy balancing weights are used to adjust the sample so that it matches the demographic and geographic margins of the adult population, as described in the SI.

4 US Results

I will start by presenting and discussing the U.S. results which motivated my comparative endeavor. I focus here on the differences in preferences between respondents identifying themselves as liberals or conservatives.

Outcome data come from the forced choice made by respondents regarding which profile in each pair should pay a higher tax rate. The unit of analysis is thus the individual profile and outcomes are measured using a dummy variable that takes a value of 1 if a profile is chosen and 0 if a profile is not chosen. With each respondent doing 5 tasks and 2 profiles per task, after removing uninformative responses my U.S. dataset comprises...
18,922 observations from 1,946 different respondents.

Since I am mainly interested in comparing the preferences of different groups, I calculate marginal means rather than the more standard Average Marginal Component Effects used in conjoint analysis. While descriptive rather than causal, Marginal Means (MMs) are more appropriate given my interest in characterizing differences in preferences across groups (Leeper, Hobolt and Tilley 2020). MMs express the percentage of times respondents choose a profile with a given attribute level, averaging over all other attributes. Since in a forced choice conjoint design respondents choosing between profiles purely at random would result in a MM of 50%, values above 0.5 indicate features that increase the favorability or probability of selection of a profile and values below 0.5 indicate features that decrease profile favorability. As such, MMs present two important advantages over AMCEs. First, they convey information about preferences for all feature levels, including baselines (while AMCEs provide causal effects of other features relative to the baseline). This means they provide information of absolute -rather than relative- favorability, allowing us to identify attribute levels that increase/decrease the overall probability a profile will be chosen. This distinction is important, for an attribute value with a positive AMCE (indicating this attribute value increases the probability of selection relative to the baseline attribute value), may have a MM below 0.5, indicating that overall having that attribute level still reduces the probability a profile will be chosen (though not as much as having the baseline attribute level). Second, when it comes to comparing preferences across groups, conditional MMs are preferable as comparing conditional AMCEs is problematic whenever baseline values are not the same across groups (which is the case here, as in most places).

Figure 1 presents marginal mean outcomes separately for liberals and conservatives on the left panel, and estimated differences in these marginal means (and their confidence intervals) on the right. As we can see, there is a clear differentiation in the fairness ideals applied by these two groups: liberals adhere to ability to pay much more than conservatives (as indicated by the larger absolute value of the deviations from 0.5), who in turn care more about deservingness. As we can see in the plot on the right, these differences

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See SI for conditional AMCEs, which measure differences in the size of causal effects across groups.
are almost all significant and their magnitude varies between 4 and 9 percentage points. What is important here is not only that there are significant differences in preferences for nearly all attribute values, but the pattern of these differences: in absolute terms, liberals are more likely to decide on the basis of a profile’s level of income (regardless of the level) while conservatives are more likely to decide on the basis of its source of income (regardless of the source). Furthermore, these results are robust to dividing the sample by vote choice in the 2016 presidential elections (Trump vs Clinton) or by partisanship (Republicans vs Democrats), suggesting they express a stable ideological divide—or polarization—in fairness conceptions.

Putting aside the fact that there are no objective criteria to determine “how much difference is enough to determine if polarization exists” (Hetherington and Rudolph 2015, p. 19), these results are striking. For one thing, conventional wisdom in political behavior studies in the U.S. is that the American public is innocent of ideology (Kinder 1983). While elites may be polarized, the electorate is not, and in particular it is not polarized ideologically (Fiorina Morris, Abrams and Pope 2005; Hetherington and Rudolph 2015). And yet this pattern of differences is consistent with an ideological story whereby liberals apply ability to pay considerations and prefer redistributive, progressive taxation while conservatives apply deservingness considerations that are not linked to progressivity.

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10It is important to note that while support for progressive taxation is not the same thing as support for redistribution, progressive taxation is a means through which redistribution can be attained (Berens and Gelepithis 2019). In terms of the fairness ideals considered here, ability to pay principles express support for progressive taxation and therefore, redistribution. Deservingness and compensatory principles do not have direct implications for the distribution of the tax burden across income groups. However, deservingness arguments are often used to oppose progressivity by conflating effort and wealth (arguing the rich deserve their wealth because they have exerted more effort). On the other hand, compensatory arguments have often been used to promote progressivity by demanding the rich pay higher rates of income taxation.
Figure 1: US Results by Respondent Ideological Self-Placement

Note: Left plot shows conditional marginal mean outcomes from forced choice conjoint experiment by respondent ideological self-placement. Right plot shows estimated differences in conditional marginal mean outcomes by respondent ideological self-placement. Estimated differences are conservatives-liberals. Estimates are unweighted and clustered by respondent. Bars represent 95% confidence intervals.

These differences are in line with research arguing conservatives adhere to notions of procedural justice while liberals prioritize fair outcomes by adhering to notions of distributive justice (Miles 2014). In particular, they suggest that conservatives’ preferences

Moreover, these differences are not simply an expression of self-interest, as income is not highly correlated with party identification or ideology in the sample (Spearman’s $\rho=0.10$ and 0.11, respectively)
for less progressive taxation may derive from the fact that they assume high incomes are deserved. This is consistent with recent findings by Alesina, Stantcheva and Teso (2018) and Suhay, Klasnja and Rivero (2020) that right-wing respondents attribute a larger role to effort as a determinant of mobility to the top quintile of the income distribution and economic success, respectively. When incomes are not deserved though, (i.e., when they result from luck or state benefit), conservatives do support an unequal distribution of the tax burden. Consistent with this, at any level of income Republicans are much more likely (up to 34 percentage points more likely) to choose a profile when its source is luck than when it is effort. In fact, while for Democrats the probability a profile will be selected is increasing in its level of income, this is not true for Republicans: a profile with $150,000 income can have the same probability of selection as one with $30,000 income depending on the source of income in the profile (see Figure 12 in the SI). This is also in line with Tella, Dubra and Lagomarsino (2016), who argue Republicans are unwilling to redistribute because they have a high opinion of the rich. However, when they think the rich are corrupt they do support raising their taxes.

For the U.S. case, this fairness or values-based explanation for conservatives’ opposition to redistributive taxes complements more established views which focus on voters’ ignorance (Bartels 2005), partisan bias (Bartels 2008), and/or misrepresentation (Page and Jacobs 2009) in a political system more attuned to the interests of the rich (Gilens 2012, Gilens and Page 2014). Moreover, it is in line with Piketty’s broad argument that differences in redistributive preferences may not express differing interests or goals but rather differing beliefs regarding the role of effort as a determinant of success (Piketty 1995).

From a broader perspective, how are we to understand these results? Can we expect ideology to determine such clear-cut differences in respondents’ fairness preferences regarding taxation everywhere? Or is there something about the U.S. case that explains these differences? Conservatives’ concern with procedural justice suggests trusting the government to redistribute in a fair manner may be key. I therefore ask: does trust in government moderate ideological polarization in fairness preferences regarding taxation?

and controlling for respondent income does not alter the results.
5 What Role for Trust in Government?

Why would trust in government matter for the polarization in fairness preferences regarding taxation? There are good reasons to think it might, but also some evidence indicating it may not.

Trust is often considered an important determinant of support for redistribution. Case in point, Kuziemko et al. (2015) argue one reason people do not support redistributive policies despite high levels of inequality in the U.S. is that they are skeptical about governments’ ability to redistribute effectively. And indeed they find that an experiment which reduces trust in government lowers support for poverty alleviation policies.

These findings are in line with a rich political behavior literature which argues people use trust in government as a heuristic when it comes to deciding whether to support government policies that demand of them material or ideological sacrifices (Rudolph 2017). This literature has repeatedly found that trust in government is an important determinant of support for different government policies, but only among those populations for which this support is costly (Hetherington 2005; Hetherington and Globetti 2002; Rudolph and Popp 2009). In terms of redistributive policies, this is usually the case of conservatives, and they indeed find an asymmetric effect of trust: it has a large effect on conservatives, -allowing high trust conservatives to sacrifice their ideological preference for a small state and support redistributive policies-, while having no or little effect on liberals (Hetherington and Rudolph 2011; Rudolph and Evans 2005). Importantly, this asymmetric effect has also been found for tax policy preferences (Rudolph 2009) and outside the U.S. context (Trüdinger and Bollow 2011).

On the other hand, Peyton (2020) presents experimental evidence that large increases in political trust have no effect on support for social spending, even among high-income republicans (who are expected to make both ideological and material sacrifices). Similarly, while observational studies in the U.S. find a positive correlation between trust in government and support for redistribution (Hetherington 2005), comparative studies looking at European and Anglo-Saxon countries find no consistent correlation between the two (Edlund 1999; Svalfors 1999, 2002).
When it comes to the effect of trust on attitudes towards taxes more specifically, some correlational evidence exists. Single country studies in Japan and Sweden have found a positive correlation between trust and support for the tax system or satisfaction with one’s tax burden (Edlund 2003; Svalfors 2002; Yamamura 2014). From a comparative perspective, a positive correlation between trust in government and tax preferences has been found both in post-communist and advanced industrial countries, however it appears this correlation is driven by preferences regarding the size of the tax burden rather than the structure or progressivity of taxation (Barnes 2015; Habibov et al. 2019).

The relationship between trust in government and fairness preferences regarding taxation is thus far from clear. However, the trust as heuristic literature suggests a way forward. One that may help explain the polarization of preferences in the U.S., as well as the inconsistency of the effect of trust when looking at average outcomes across countries. I build upon this literature to argue that trust in government may not only function as a heuristic that guides citizens’ reactions to policies but may have a prior effect of structuring citizen preferences regarding the role of the state. While not entirely new, this approach shifts the emphasis from the effect of trust on support for government policies to its effect on redistributive preferences. The practical implications are similar but extend from attitudes towards existing policies to underlying preferences. I thus expect that low trust in government will have an asymmetric effect on the tax preferences of liberals and conservatives. While liberals prefer a progressive distribution of the tax burden—in line with their ideological goal of equalizing outcomes—regardless of their level of trust, conservatives, who are more concerned with procedural fairness are more sensitive to trust. If conservatives cannot trust the government to fairly collect (and redistribute) taxes, they will have less progressive preferences, leading to polarization in low-trust conditions (and to the observed positive correlation between trust and redistributive preferences in the U.S.). In low trust conditions, trust thus behaves as a necessary (but not sufficient) condition for conservatives to support progressive taxation.

12There is also a large literature on tax morale and its determinants that I do not consider here. For a review see Torgler (2011) or Horodnic (2018).

13This becomes clearer if we think there are two reasons why conservatives or right-wingers may oppose redistribution. The first one is economic conservatism: they believe market outcomes are fair.
At a macro level, this means that when trust in government is low (as it is in the U.S.), the preferences of liberals and conservatives will diverge to a greater extent than when trust in government is high. When trust in government is high, conservatives’ trust that the government can fairly redistribute wealth will be expressed in more progressive preferences, leading to lower levels of polarization. When thinking in comparative terms though, it is important to take into consideration the conditions under which this hypothesized relationship will apply. In this case, there are other factors (e.g., cultural, socio-economic) that may lead to generalized agreement on the importance of redistribution. When this is so, we would not expect trust to have this moderating effect. This leads me to my first hypothesis:

**H1**: If support for redistribution is low, countries with low trust in government will exhibit more polarized fairness preferences (along ideological lines) than countries with high trust.

As mentioned above, the mechanism for this is that in high trust conditions (some) conservatives will prefer progressive taxes, meaning that the reduction in polarization is driven by a greater agreement on ability to pay.

**H2**: If support for redistribution is low and trust in government is high, there will be more agreement on ability to pay.

On the other hand, this is not expected to occur in places where there is significant agreement on the need for redistribution, as expressed in high macro levels of support for redistribution.

**H3**: If support for redistribution is high, trust in government will not have this moderating role on ideological polarization. The distance in preferences between conservatives and liberals will be similar in countries with high and low trust in government.

In these places, high support for redistribution is expected to be a consequence of the fact that, regardless of ideology, everyone agrees on the importance of progressive taxes.

In this view, the rich deserve their wealth, because they are more hard working or more intelligent than the rest (Suhay, Klasnja and Rivero 2020). The second is non-interventionism or limited government: even if inequality is unfair and some redistribution might be good, someone other than the state (such as charity (Kuziemko et al. 2015)) should do it. I expect trust to affect mostly the second reason, allowing high trust conservatives to prefer (some) state redistribution.
The implicit assumption here is that support for redistribution is expressed (at least in part) in preferences for tax progressivity. That is, people who support redistribution do not want it to occur exclusively through spending but also through (progressive) tax collection.

**H4:** If support for redistribution is high, both conservatives and liberals will exhibit a preference for ability to pay fairness considerations, to the detriment of deservingness and compensatory considerations.

### 6 Case Selection and Data

In order to test these hypotheses I need to select high and low trust countries with low support for redistribution and an equivalent pair with high support for redistribution. Survey data places the U.S. as a low support for redistribution medium-low trust country. In an effort to keep other factors that might affect the relationship between trust in government and polarization in tax fairness preferences constant, I selected Australia as the high trust low support for redistribution country. Both countries share a liberal welfare regime, broadly progressive tax systems as well as an individualist, Anglo-Saxon culture.

In terms of the high support for redistribution countries, ISSP 2016 data indicates they are mainly found in Eastern Europe and Latin America. In an effort to expand our knowledge base beyond European and advanced industrial democracies, I opted for the latter region. This has the added benefit of maximizing variation in background variables that will be of relevance for testing alternative explanations. Moreover, it provides an opportunity to gain insight into the preferences underlying Latin America’s singular tax regimes. To ensure comparability with U.S. and Australian results, two countries with internet penetration rates at least as high as the U.S. were selected following the same

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14 Taxation in Latin America is not only regressive, but compared to other countries at their level of development, most Latin American countries are under taxed [Huber and Stephens 2012]. Moreover, it is the region with the lowest revenues from direct taxes in the world [Kacef, Weller and Jimenez 2011].

15 According to the International Telecommunication Union, the percentage of individuals using internet in the US, Australia, Chile and Argentina in 2017 was 75, 86, 82 and 76% respectively.
criteria as for the low support for redistribution cases: Argentina and Chile.\footnote{16}

Data for Australia, Chile and Argentina come from conjoint survey experiments equivalent to the one conducted in the U.S.\footnote{17} These surveys were conducted in February 2020 on online samples of 1,500 respondents in each country, provided by the market research company Respondi.\footnote{19} Quota sampling was used to select participants from their opt-in pool in proportions representative of their national populations in terms of age, gender and social class.

7 Comparative Results

After combining my U.S. results with data from these three additional countries my full dataset now comprises 62,572 observations from 6,341 different respondents in 4 countries.\footnote{20}

Figure 2 presents marginal mean outcomes by country and shows that despite large differences in culture, institutions and socio-economic conditions the pattern of responses across countries is remarkably similar. Respondents in all countries have progressive preferences (probability of selection increases monotonically with level of income), with

\footnote{16}{See SI section A7 for survey data showing each country’s relative levels of trust in government and support for redistribution.}

\footnote{17}{Attribute levels were adapted to each country. Levels of income in the low and middle categories in Chile and Argentina had to be selected at higher points in their personal income distributions (above the 40th and 80th percentiles used in the U.S. and Australia) to ensure that the lower level of income was above the income tax exemption threshold. Sources of income were again chosen on the basis of formative studies run on independent samples in each country. See SI table 3 for the full list of attribute levels used in each country. Additionally, question ordering was slightly different as some socio-demographics were collected before rather than after the conjoint tables (to implement quotas) and a question measuring diffuse trust in the state was added at the end of the survey.}

\footnote{18}{To see the Australian version of the survey go to https://nyu.ca1.qualtrics.com/jfe/preview/SV_7QYstxiy6p5rrvf?Q_SurveyVersionID=current&Q_CHL=preview. The experiment received approval from NYU’s Internal Review Board (IRB-FY2019-3824) and the University of Geneva’s Ethics Committee.}

\footnote{19}{A pre-analysis plan was preregistered in the Political Science Registered Studies Dataverse (doi:10.7910/DVN/FKKCNH).}

\footnote{20}{1946 respondents in the U.S., 1450 in Australia, 1418 in Chile and 1527 in Argentina.}
ability to pay concerns having the largest influence on the probability of selection. Deservingness and compensatory criteria are also important throughout and with the exception of social background and luck in Australia, the direction and relative magnitude of the effects of all sources of income is similar across countries. These findings accord well with Aarøe and Petersen (2014)’s argument that cross-national differences in welfare state support hide micro-level similarities in psychological predispositions. As we will see below though, while fairness preferences may be similar across countries, the polarization in these preferences is not. If policy reform requires political consensus, this may help explain cross-country differences in tax policies.

Figure 2: Marginal Mean Outcomes by Country

Note: Plot shows marginal mean outcomes by country. Estimates are unweighted and clustered by respondent. Bars represent 95% confidence intervals.

Moving on to my hypotheses, they refer to the magnitude of the difference in preferences between right and left-leaning respondents. To test them, in addition to estimating the difference in marginal means as I did for the U.S. case, I can also conduct an omnibus test of the extent to which respondent ideology matters for choices in each country. This
can be done through a nested model comparison that will estimate whether a model of choices that accounts for ideological differences better fits the data than a restricted model with only conjoint attributes as predictors (Leeper, Hobolt and Tilley 2020). Table 7 presents the results of such an exercise using ideological self-placement to identify the relevant subgroups. The table includes measures of the additional deviance explained by including ideological self-placement in the model, as well as significance levels of an F-test of the null hypothesis that all interaction terms are equal to zero. I take this residual deviance as a summary measure of the polarization in fairness preferences in each country. As we can see, polarization is much larger in the U.S. than Australia, in line with H1 and similar in Argentina and Chile, in line with H3. This pattern of results holds whether using vote choice, party identification or the complete range of ideological self-placement (including centrists) to define subgroups. Nonetheless, I focus on ideological self-placement because party identification is very low in Latin America (leading me to lose more than 80% of observations in some countries), and vote choice is subject to strategic considerations beyond ideology.

Table 2: Summary Measures of Ideological Polarization by Country

<table>
<thead>
<tr>
<th>Trust in the State</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support for Redistribution Low</td>
<td>USA</td>
<td>Australia</td>
</tr>
<tr>
<td>23.8***</td>
<td>3.9**</td>
<td></td>
</tr>
<tr>
<td>Support for Redistribution High</td>
<td>Argentina</td>
<td>Chile</td>
</tr>
<tr>
<td>3.8**</td>
<td>3*</td>
<td></td>
</tr>
</tbody>
</table>

Cell numbers measure the reduction in residual deviance due to including interactions with ideological self-placement (Left-Right) in model. ***p < .001, **p < .01, *p < .05.

Nonetheless, ideological differences remain in all countries and H2 requires a more detailed understanding of where these differences are located. Figure 3 presents estimated differences in marginal means for each country. In all countries the difference in preferences between left and right wingers follows the same predictable pattern, consistent with left-wingers caring more about ability to pay than right-wingers: high income increases

---

21 See SI for these results.
the probability of selection more for the left than the right, and low income decreases this probability more for the left than for the right. Figure 3 also shows that while in the U.S. liberals and conservatives disagree on the importance given to both level and source of income, the reduction of polarization in its high-trust counterpart, Australia, is largely driven by a greater agreement on ability to pay, as stated in H2. Thus, respondents at the left and right of the political spectrum in Australia largely agree on the importance of progressive taxation, but disagree when it comes to deservingness considerations, particularly regarding social background and luck (for which differences are even larger than in the U.S.). In Chile and Argentina, on the other hand, right - left differences are quite similar. In both countries, significant differences in preferences are limited to ability to pay and luck.
Figure 3: Differences in Marginal Means by Respondent Ideological Self-Placement and Country

![Graphs showing differences in marginal means by respondent ideological self-placement and country.](image)

**Note**: Plots show estimated difference in conditional marginal means outcomes by respondent ideological self-placement (left and center-left vs right and center-right) and country. Estimated differences are right - left wing. Estimates are unweighted and clustered by respondent. Bars represent 95% confidence intervals.

Finally, **H4** focuses on the relative importance of ability to pay and deservingness considerations, with the expectation that in high support for redistribution countries respondents will privilege ability to pay over deservingness to a greater extent than in low support for redistribution countries. The idea is that in high support for redistribution
countries right and left wingers not only coincide in their preference for redistributive taxes but also give more importance to ability to pay, leading to low overall levels of polarization. In order to test this hypothesis, I will use the method presented in Clayton, Ferwerda and Horiuchi (2019) to measure the relative salience of attributes. This measure calculates, for each attribute, the average of the absolute value of the distance between the marginal mean of each of its levels and 0.5. The intuition is that if an attribute is not very salient, the marginal means of its various levels will not be very distant from 50%, which is the probability of selection we would get if a profile was chosen at random. Conversely, the marginal means of very salient attributes should deviate substantially from 50%. Attribute salience is calculated for the two country pairs determined by levels of support for redistribution. Moreover, to allow for comparisons not only of the salience of a given attribute across countries, but also of the salience of different attributes, the above method is complemented by scaling the salience of each attribute by its empirical bounds.

Figure 4 presents the results of this exercise. In the left panel, x and y axis plot the salience of each attribute in high and low support for redistribution countries, and deviation from the 45° line indicates the difference in salience of a given attribute across country pairs. As we can see, it is not the case that in Argentina and Chile respondents privilege ability to pay over deservingness to a greater extent than in the USA and Australia. In fact, the opposite is true. While in high support countries the salience of both attributes is very similar, in low support countries ability to pay is much more salient than deservingness. In absolute terms, the right panel shows that in USA and Australia respondents care more about ability to pay than in Argentina and Chile, and the opposite is true about deservingness.

As highlighted by Leeper, Hobolt and Tilley (2020), we cannot directly compare the relative size of attributes with different numbers of levels as their empirical bounds are different. Since pairs of profiles can have the same level of a given attribute, marginal means will not range from 0 to 1 but rather from the probability of co-occurrence to 1 minus that probability. Because this probability gets smaller with the number of levels in an attribute, the bounds of attributes with different numbers of levels will vary. In this case I divided the salience of each attribute by its upper bound.
Figure 4: Attribute Salience by Country Pairs

Note: Left hand panel presents salience measures for each attribute and country-pair. Right hand panel presents estimated differences in salience for each attribute and their 95% bootstrapped confidence intervals. Estimated differences are salience USA + Australia - salience Argentina + Chile. Estimates are unweighted and clustered by respondent.

Combines with figure 3, these results indicate that low levels of polarization in Latin American countries are not driven merely by agreement on the importance of ability to pay, but reflect a broader consensus encompassing the different fairness ideals. In a recent paper [Holland (2018)] uses observational data to show that preferences for redistribution in Latin America do not conform to material interest models in as much as the redistributive
preferences of the rich and the poor do not diverge. She argues that due to the truncated nature of welfare states in the region, the poor do not expect to benefit from redistribution and therefore do not have strong preferences for it. My data also—which also shows preferences for progressive taxation do not vary significantly by level of income—suggests a supplementary explanation: similarities in preferences are based on shared fairness ideals.

8 Micro-Level Evidence

Macro-level evidence presented so far is broadly consistent with my expectations. However, since the mechanism I have proposed operates at the individual level, examining more micro-level results may prove informative. To recap, I have argued that when it comes to redistributive preferences, trust in government has a larger effect on the preferences of rightists than on those of leftists. While leftists will always prefer redistributive taxation (progressive taxes), rightists are more likely to do this if they exhibit high levels of trust in government. But this only holds in low support for redistribution countries, where there is room for disagreement. In the U.S., a medium-low trust country, there is ample evidence that high levels of polarization on redistributive issues are driven by the opposition of low trust conservatives to redistributive policies (Hetherington and Rudolph 2011; Rudolph and Popp 2009; Rudolph and Evans 2005). What should I expect in the other countries in my sample?

As stated in H2, I expected that in Australia high trust conditions allow rightists to support progressive taxation and more closely approximate the preferences of liberals. This average effect can occur through two potential mechanisms: either 1) only high trust conservatives approximate liberals’ positions but—being a high trust country—their larger proportion is reflected in the average effect; or high overall levels of trust mean all rightists—even low trust ones—trust the government enough to support redistributive taxes. The question thus is whether the confluence in preferences of liberals and conservatives we observe in the average effect is driven mainly by high trust respondents or by

23These analyses were not considered in the pre-analysis plan.
all respondents. My expectation was that the first mechanism was at play in Australia, and the second in Chile and Argentina. In these two highly unequal countries, I expected that the need for redistribution would be so uncontroversial the preferences of rightists would unconditionally approximate those of leftists -regardless of their level of trust-. I will use survey responses and conjoint data to assess the extent to which any of this occurs.

One of the questions in my survey asked respondents whether they agreed with the statement “Most public servants can be trusted to do what is best for the country”. In Australia, 49% of rightists agreed with this statement, a proportion higher than in Chile and Argentina (25 and 17%, respectively) but perhaps not high enough to drive average results.\(^{24}\)

In terms of support for redistribution, another question asked respondents whether they thought everyone should pay the same proportion of their income in taxes or some should pay a greater proportion than others. Since it is unlikely people will wish the poor to pay a greater proportion than the rich, I take the last response option as expressing support for tax progressivity and expect high overall agreement among Latin American rightists. The proportion of rightists supporting progressivity in Chile and Argentina was indeed quite large (76 and 68% respectively), and not that much smaller than the proportion of leftists (89 and 81% respectively). However, Australia is not too far behind.

\(^{24}\)This answer shows a similar proportion of low-trust respondents in Chile and Argentina (67 and 65%, respectively) which was unexpected considering previous survey data (see SI section A7). The drop in trust in Chile is likely due to both the timing of the survey and the nature of the question. My survey was conducted in February 2020, in the immediate aftermath of the largest protests Chile had seen in a generation, with over a million people in the streets protesting against inequality. Moreover, the question likely captured distrust towards security services that in this context were seen as responsible for brutal repression and human rights violations (see for example BBC, “Chile protests: Concerns grow over human rights abuses”, November 7th 2019, https://www.bbc.com/news/world-latin-america-50315106, accessed June 11th 2020). Whether this survey question captures a temporary or permanent drop in trust in government, remain to be seen. In any case, given evidence suggesting that redistributive preferences are quite stable, hard to move and culturally determined [Kuziemko et al. 2015, Peyton 2020], it is unlikely this drop in trust had an immediate effect on respondents’ fairness preferences regarding taxation.
with 64% of rightists supporting progressivity vs 78% of leftists. These results suggest that in all three countries the redistributive preferences of all conservatives (not just high trust ones) are broadly similar to those of liberals (for comparison in the U.S. 55% of conservatives supported progressive taxation vs. 89% of liberals). We can use conjoint responses to take a closer look at how individual-level trust affects polarization.

Figure 5 plots the estimated difference in marginal means between left and right wingers by respondent level of trust and country. As we can see, levels of polarization are quite small across the board. While it is still the case that low trust respondents’ preferences diverge more than high trust respondents’, even this level of disagreement is quite small, with a maximum residual deviance explained by ideology of 4.7 (compared to a global average of 24 in the U.S.). In all countries then, including Australia, low average polarization is the result of a general confluence in preferences between leftists and rightists, not limited to high trust respondents. In Chile and Argentina, where 77% and 74% of rightists think inequality is too high, this confluence is likely explained by a generalized agreement on the need to redistribute. In Australia, where only 47% of rightists consider inequality to be too high (this percentage is 54 in the U.S.), it seems that high overall levels of trust have led to an equilibrium in which everyone’s preferences -including those of low trust rightists- are progressive. Future work should investigate the relationship between living in a high trust society and support for redistribution more in detail. As suggested by Peyton (2020), it is possible that the relationship between trust in the government and support for redistribution is not immediate but operates through cultural change, which means not only one’s individual level of trust matters but everyone’s.

25These differences in means are all robust to a regression approach including controls for age, gender, education and household income.

26Curiously, while the level of polarization (or residual deviance explained by ideology) decreases linearly in trust in Chile and Argentina, the highest polarization in Australia is among respondents in the intermediate trust category, who are excluded from figure 5.
Figure 5: Differences in Marginal Means by Respondent Ideological Self-Placement, Trust and Country

Note: Plots show estimated difference in conditional marginal mean outcomes by respondent ideological self-placement (left and center-left vs right and center-right), trust level (slightly agrees, agrees or strongly agrees vs slightly disagrees, disagrees or strongly disagrees with statement “Most public servants can be trusted to do what is best for the country”) and country. Estimated differences are right - left wing. Estimates are unweighted and clustered by respondent. Bars represent 95% confidence intervals. Text expresses reduction in residual deviance due to including interactions with ideological self-placement in model.

28
9 Robustness Tests (in progress)

This section will include the standard diagnostic and robustness tests used in conjoint analyses (for carryover, profile order, row order and atypical profile effects), as well as population-weighted results and multiple comparisons adjustments.

10 Discussion

This paper has sought to contribute to building knowledge on the cross-country variation in fairness preferences regarding taxation and its correlates. It has used experimental methods to estimate unbiased and comparable measures of these fairness preferences across four countries, including two in a region that has largely been excluded from previous comparative work. Findings indicate that average preferences in all four countries are remarkably similar, despite originating in quite different institutional, cultural and socio-economic contexts. The differentiation of these preferences across ideological lines (what I have here called polarization) does exhibit significant variation though, and the hypotheses tested herein have attempted to make sense of it. The differentiation of these preferences across ideological lines (what I have here called polarization) does exhibit significant variation though, and the hypotheses tested herein have attempted to make sense of it, offering a potential explanation for how similar fairness preferences may give rise to different policies.

In all of the countries studied respondents exhibit progressive preferences, with ability to pay considerations being the most salient: those who earn more money should pay the highest tax rate. Nonetheless, deservingness considerations are also an important component of preferences: in all four countries respondents were less likely to pick people who worked hard for their income to pay the higher rate, and they were more likely to pick people who benefitted from a state benefit, in line with compensatory considerations. From a comparative perspective, it is interesting to note that across countries the salience of level of income is correlated with countries' levels of market inequality (in ascending order: Argentina, Australia, Chile, U.S.) suggesting a strong influence of contextual
conditions on the salience of different fairness concerns. The U.S. therefore stands out as the country where respondents care most about level of income (though this is driven solely by liberals). Moreover, it is also the only country in which respondent’s household income significantly moderates preferences in line with standard material interest models. These differences however are never large enough to offset the influence of the fairness considerations on which I focus.

I have also sought to shed light on the relationship between trust in the government and the polarization of preferences. Building on political behavior research I have argued that -in low support for redistribution countries- trust has an asymmetric effect on the redistributive preferences of rightists and leftists, which in the aggregate results in a moderating effect on polarization. Findings are broadly in line with my expectations, showing lower levels of polarization in Australia, -the high trust country- than in the U.S., that are driven by a greater agreement on ability to pay considerations. However, contrary to my expectations, this greater congruence in preferences is not limited to high trust respondents, but reflects a wider societal consensus. It seems that not just individual trust matters but the overarching culture of trust in a country may itself facilitate agreement by shifting countries into a different equilibrium regarding the preferred role of the state.

In practical terms, falling trust in government may thus be one of the reasons why growing inequality has not led to increased redistribution: by increasing polarization, it also makes policy reform less likely in low trust countries like the U.S.

In countries with high support for redistribution on the other hand, trust does not have much of a moderating role and the ideological polarization of preferences is similar -and substantively small- in high and low trust countries. In Chile and Argentina, high support for redistribution reflects widespread agreement on the need to reduce inequality and on ability to pay considerations. This finding supplements (and my data corroborates) previous research showing a lack of polarization in redistributive preferences by income, to suggest high overall levels of congruence in fairness preferences in Latin America.

By highlighting the asymmetric and contextual effect of trust in government on partisan’s redistributive preferences, this paper also helps explain why previous efforts to link individual-level trust and redistributive preferences have often led to inconsistent
findings. By bundling high and low support for redistribution countries, and low and high trust countries, this more nuanced relationship has often gone undetected.

Though comparative scholars have failed to find a consistent relationship between trust in the government and redistributive preferences, my results suggest that one exists but is more limited and nuanced than previously considered. Moreover, they raise the important point that the effects of trust may not operate only at the individual but also at a societal level, a possibility future research must look into. Is it the case that above a certain level of average trust in the government, trust ceases to moderate rightists’ redistributive preferences (as they all support more redistribution)? While the implications of the findings presented here for countries with intermediate levels of support for redistribution are not clear, they offer a tempting ground on which to test this latter question.
References


**URL:** [http://www.lisdatacenter.org/wps/liswps/695.pdf](http://www.lisdatacenter.org/wps/liswps/695.pdf)


URL: http://www.nber.org/papers/w22934


A Supplementary Information (in progress)

A.1 Formative Study

The sources of income used in the experiment were the result of formative studies conducted on independent samples in each country with the purpose of identifying sources of income that i) would be interpreted as the product of effort, social background, state benefit and luck, respectively; ii) were relatively orthogonal to one another; and iii) were independent of level of income. In each study, respondents were presented with different sources of incomes and were asked to express their agreement with the statement that each source of income resulted from luck, effort, state benefit and social background on a 7-point likert scale. Results for the sources of income selected in each country are included below. Each figure shows four histograms with the distribution of responses for the selected source of income in each country.
Figure 6: Effort
Figure 7: Luck
Figure 8: Social Background

[Bar charts and graphs showing data related to social background, effort, and state benefit for different contexts.]
Figure 9: State Benefit
A.2 Experiment Description

In terms of presentation, two profiles were presented side-by-side on the same screen, with the following prelude:

Many observers in the United States have discussed the possibility of changing the federal income tax code to address multiple issues. The design of a new tax system raises a number of questions, including whether and why some people should pay higher rates than others. We are interested in what you think about this.

We will show you profiles of random individuals. You will be shown pairs of individuals, along with several of their attributes. For each comparison we would like to know which of the two individuals you think should pay a higher tax rate. In total, we will show you five comparison pairs.

Bear in mind that when we talk about tax rates we mean the percentage of their income that someone pays in taxes. People with different incomes who pay the same rate actually pay different amounts (i.e., 30% of an income of $100,000 is $30,000, but of an income of $50,000 it is $15,000).

Please take your time when reading the attributes of each individual. People have different opinions about this issue, and there are no right or wrong answers.

This introduction was followed by a screen similar to figure 15.
After the first pair of profiles, respondents were asked to answer the following open-ended question, which provided supplementary information on respondents’ preferences and allows me to confirm choices were based on fairness considerations:

Why did you choose citizen <chosen citizen>?

After completing 5 choice tasks, respondents were asked to fill a survey asking for their socio-demographic information (age, gender, education, household income, partisanship, employment status, race, marital status, ideology and zip code of residence). They were also asked to answer a question regarding their general preferences for progressivity, used to measure adherence to equal treatment, and a question regarding their opinion about current levels of inequality, used to determine whether they are inequality averse:

Do you think everyone should pay the same share of their income in taxes or some people should pay a higher share than others?

American households with incomes in the top 10% earn an average of $230,000 per year, and households with incomes in the bottom 50% earn an average of
$25,000 per year. Should this difference be bigger, smaller, or about what it is now?

In Australia, Chile and Argentina, the ordering of questions was slightly altered: demographic questions (gender, age, education, employment status, household income, zip code of residence) were asked before the conjoint tables. In addition to party identification, ideology and vote in the last general election, in the last part of the survey they were also asked the following questions:

The *country* government, more than individuals, is the most responsible for ensuring the well-being of the people. To what extent do you agree or disagree with this statement?

Most public servants can be trusted to do what is best for the country. To what extent do you agree or disagree with this statement?

Moreover, attribute levels were also adapted. Table 3 presents the full list of attribute levels by country.
<table>
<thead>
<tr>
<th>Attributes</th>
<th>Attribute Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Argentina</strong></td>
<td><strong>Chile</strong></td>
</tr>
<tr>
<td>Level of income</td>
<td>$25,000</td>
</tr>
<tr>
<td></td>
<td>$60,000</td>
</tr>
<tr>
<td></td>
<td>$100,000</td>
</tr>
<tr>
<td>Source of income</td>
<td>Receives annuity from lottery prize</td>
</tr>
<tr>
<td></td>
<td>Got trained as an engineer and found a job</td>
</tr>
<tr>
<td></td>
<td>Got a job through family connections</td>
</tr>
<tr>
<td></td>
<td>Owns a company that receives government subsidies</td>
</tr>
<tr>
<td>% of income paid in sales taxes</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>15%</td>
</tr>
</tbody>
</table>
A.3 U.S. Sample and Weights

As stated in the paper, the U.S. survey was conducted on a sample of 2,000 MTurk respondents. The task was published in four batches between the 17th and 18th of October 2017, with the condition that respondents could not participate more than once. The first two batches, of 500 and 1,000 respondents had the restriction that only workers located in the US and with an approval rate of 90% or above could participate. The last two batches, of 300 and 200 respondents, had the additional restriction that respondents had to have annual household incomes above $100,000 and below $25,000, respectively. This was done with two objectives. The first was to ensure sufficient power for analyses involving splitting the sample by income (testing for the presence of self-interest). The second was to make sure representative population weights could be constructed without having to rely on a small number of observations of underrepresented high and low income respondents.

Once the sample was ready, entropy balancing weights (Hainmueller 2012) were constructed to adjust the sample to the margins of the adult population on age, gender, education, race, household income, partisanship and census region. Table 4 presents the distribution of socio-demographics in the raw sample, the weighted sample, and the population. Weights range between 1 and 15.
<table>
<thead>
<tr>
<th>Group</th>
<th>Raw Sample</th>
<th>Weighted Sample</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender: Male</td>
<td>.50</td>
<td>.49</td>
<td>.49</td>
</tr>
<tr>
<td>Race: White</td>
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<td>.78</td>
<td>.78</td>
</tr>
<tr>
<td>Age: 18-29</td>
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<td>.21</td>
<td>.21</td>
</tr>
<tr>
<td>Age: 30-49</td>
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<td>.34</td>
<td>.34</td>
</tr>
<tr>
<td>Age: 50+</td>
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<td>.45</td>
<td>.45</td>
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<tr>
<td>Education: Some college or less</td>
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<td>.60</td>
<td>.60</td>
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<tr>
<td>Education: College graduate</td>
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<td>.29</td>
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<tr>
<td>Education: Post-graduate</td>
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<td>.11</td>
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<td>HH Income: $9,999 or less</td>
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<td>HH Income: $20,000-$29,999</td>
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<td>.08</td>
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<td>HH Income: $30,000-$39,999</td>
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<td>.08</td>
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<td>HH Income: $80,000-$99,999</td>
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<td>.11</td>
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<td>HH Income: $100,000+</td>
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<td>Region: South</td>
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<tr>
<td>Region: West</td>
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<td>.23</td>
<td>.24</td>
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<td>.35</td>
<td>.35</td>
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<tr>
<td>Party ID: Republican</td>
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<td>.28</td>
<td>.28</td>
</tr>
</tbody>
</table>

A.4 Additional U.S. Results

A.5 AMCEs by Ideology

Figure 11: Effect of Profile Attributes by Respondent Party Identification

Note: This plot shows estimates of the effects of the randomly assigned individual attributes on the probability of being selected to receive the higher tax rate. Estimates are based on the benchmark OLS model with robust standard errors clustered by respondent, estimated for two different groups of respondents: those who identify as Republicans and those who identify as Democrats. The points without horizontal bars denote the attribute value that is the reference category for each attribute.
A.6 Effect of Level of Income by Source of Income in Profile and Ideology

Figure 12: Level of Income by Source of Income

Note: Left plot shows marginal mean outcomes from forced choice conjoint experiment by source of income in profile for Republicans. Right plot shows the same for Democrats. Estimates are unweighted and clustered by respondent. Bars represent 95% confidence intervals.
A.7 Survey Data on Countries’ Levels of Trust in Government and Support for Redistribution

Figure 13: ISSP 2016 Data
Figure 14: Latinobarometer 2018 Data
Figure 15: LAPOP 2018 Data
A.8  Summary Measures of Polarization Using Alternative Criteria to Define Subgroups

Table 5: By Vote Choice

<table>
<thead>
<tr>
<th></th>
<th>Trust in the State</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Low</td>
<td>USA</td>
<td>Australia</td>
</tr>
<tr>
<td>Support for Redistribution High</td>
<td>Argentina 17.5***</td>
<td>Chile 1.6**</td>
</tr>
<tr>
<td></td>
<td>5.2*</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Cell numbers measure the reduction in residual deviance due to including interactions with vote choice (Left vs Right wing parties) in the last general election in model. ***p < .001, **p < .01, *p < .05.

Table 6: By Party Identification

<table>
<thead>
<tr>
<th></th>
<th>Trust in the State</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Low</td>
<td>USA</td>
<td>Australia</td>
</tr>
<tr>
<td>Support for Redistribution High</td>
<td>Argentina 17.2***</td>
<td>Chile 2.1</td>
</tr>
<tr>
<td></td>
<td>3*</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Cell numbers measure the reduction in residual deviance due to including interactions with party identification (Left vs Right wing parties) in model. ***p < .001, **p < .01, *p < .05.
Table 7: By Ideology (including center)

<table>
<thead>
<tr>
<th>Support for Redistribution</th>
<th>Low Trust in the State</th>
<th>High Trust in the State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low USA</td>
<td><strong>24.3</strong>*</td>
<td>5.6*</td>
</tr>
<tr>
<td>High Argentina</td>
<td>4.6*</td>
<td>3.6</td>
</tr>
<tr>
<td>High Chile</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cell numbers measure the reduction in residual deviance due to including interactions with ideological self-placement (Left-Center-Right) in model. **p < .01, *p < .05.