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Policy misperceptions, information, and the demand for redistributive tax reform: experimental evidence from Latin America

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Abstract

Why do individuals fail to support tax reforms that serve their material self-interest? Using an original online survey experiment spanning eight countries and 12,000 respondents across Latin America, one of the most unequal regions in the world, we find evidence for a previously unexplored explanation: misperceptions regarding the current incidence of the taxes to be reformed. Treated respondents who are informed that the value-added tax (VAT) is regressive are significantly more likely to prefer reforms that make it more progressive. Treatment effects are driven by the large fraction of respondents who underestimate the regressivity of the VAT. They are disproportionately right-leaning and more likely to attribute success to individual effort than luck; treatment effects are largest among individuals who hold these views of the world. Many respondents exhibit inconsistent preferences, violating the generalised axiom of revealed preferences; treatment effects are significantly stronger among consistent respondents. These findings expand the potential for information interventions to shift support for fiscal policy reforms protecting the most vulnerable.

KEYWORDS
taxes, redistribution, survey experiment

JEL CLASSIFICATION
D72, D90, H20, H30

1 | INTRODUCTION

A burgeoning literature on the sources of support for income redistribution has highlighted an important puzzle: information about the extent of inequality has a large effect on whether individuals

believe inequality is a significant problem, but a more modest effect on their support for specific redistributive tax reforms. Following a conjecture by Slemrod (2006), we ask whether support for specific tax reforms depends on beliefs about the efficacy of the proposed solution and not only on whether they think that inequality is a serious problem. One reason individuals may doubt the efficacy of reform is a mistaken belief that the tax targeted for reform is already progressive. We therefore test whether individuals' misconceptions regarding the incidence of the value-added tax (VAT) reduce their support for progressive reforms to that tax. Experimental data from an original online survey of 12,000 respondents from eight countries in Latin America indicate precisely this: individuals who are shown information that illustrates the regressive incidence of the VAT are more supportive of reforms that would make that tax more progressive.

Previous research applies powerful information treatments to inform individuals about the extent of inequality and the potential benefits of reducing it.[1] These treatments have a large and significant effect on beliefs that income inequality is a serious issue and that progressive taxes in general are an important tool to reduce inequality. The effects on beliefs about specific tax policies are significantly smaller.

Our intervention, a figure showing the regressive incidence of the VAT, differs in two important respects from information interventions in prior research. First, treated respondents are told only the current incidence of the VAT but nothing about the overall problem of inequality. Second, under the progressive reforms considered here, a large fraction of respondents would pay higher VAT rates in order to exempt poorer deciles from higher rates. Past research asks about progressive tax reform options to which respondents would not be exposed, such as higher income tax rates on the top 1 per cent.

The absence of information in the treatment about the extent of inequality, and the higher taxes that many respondents would pay under the different reform options, should reduce treatment effects on preferences for tax reform. Nevertheless, treated respondents indicate that they are significantly more likely to vote for the government that implements more redistributive reforms of the VAT. The effects are electorally meaningful: support for governments that maintain the status quo is 4 percentage points less in the treated group than in the control group.

Given the centrality of incorrect beliefs about the progressivity of the VAT, the analysis also examines the correlates of these beliefs and whether they are rooted in knowledge about the tax system or are rather a product of individuals' world view or ideology. Ideology affects incentives to collect and absorb factual information about policy: the more individuals value their ideology and the policies that are consistent with it, the greater their reluctance to accept facts that contradict their ideology. Data from the survey reveal that beliefs about incidence are strongly correlated with ideology. Nevertheless, a factual intervention succeeds in shifting policy preferences even among individuals with misperceptions that are correlated with their ideologies.

This research contributes to a rich literature examining preferences for redistribution and concerns about inequality. Stantcheva (2021) shows treated respondents a two-minute 'Redistribution' video that describes the distribution of income in the United States, demonstrates that a progressive tax system can reduce income inequality, and indicates that the welfare of the recipients of redistributive transfers is likely to rise more than the welfare of those who pay higher taxes is to fall. The video has a large and significant effect on beliefs that progressive taxes are an important tool to reduce inequality. However, treated respondents are no more likely to say that the current US federal income tax is fair nor that they are dissatisfied with it. Our intervention implicitly increases dissatisfaction with the current VAT as it significantly increases support for specific progressive VAT reforms.

The experiment in Kuziemko et al. (2015) informs treated respondents that inequality is significant and has increased. Treated respondents with lower incomes learn that their earnings would have been higher had income gains been more evenly distributed. All respondents are then asked to choose the tax rate that should be imposed on the top 1 per cent of earners. Treated respondents choose a higher tax rate than the control group. In contrast, treated respondents in the survey analysed here are not

[1] See especially Stantcheva (2021) for a review of the most recent advances.

told about inequality in general. Instead, they are informed about the regressive incidence of a tax. All respondents are then asked about progressive tax reforms that would affect most taxpayers and not only the top 1 per cent. Treated respondents are significantly more likely to support higher taxes on the highest earning 50 or 70 per cent of households. According to respondents' self-reported incomes, about 70 per cent of the sample are in the top 70 per cent, and about 80 per cent believe that they are in the top 70 per cent.[2]

Other studies also focus on the problem of inequality rather than the efficacy of specific redistributive reforms. Cruces, Perez Truglia and Tetaz (2013) and Fernandez-Albertos and Kuo (2018) examine the effects of information about income distribution and find that individuals who learn they are poorer than they thought support more redistribution. Karadja, Mollerstrom and Seim (2017) conclude that individuals who find out that they are richer relative to others demand less redistribution.[3] Hoy and Mager (2021) reach different conclusions from a survey experiment involving 30,000 participants in ten middle- and upper-income countries: poorer individuals who are told that their position in the income distribution is lower than they thought does not increase their support for redistribution.[4]

Hoy (2022) is concerned about the impact of the progressivity of fiscal policy on the willingness to pay taxes. In a large multi-country survey, he informs treated respondents about the progressivity of all taxes and government transfers in their countries. Respondents' willingness to pay taxes rises the more progressive the fiscal policy is in their countries. Unlike Hoy (2022), we present all respondents with the same information on VAT incidence for a typical or representative country in the region. This is because we are especially interested in both internal and external validity and in whether attitudes towards progressive tax reforms are similar across countries. We find that they do not differ significantly, even across countries with different levels of VAT taxation.

Both Bartels (2005) and Slemrod (2006) document widespread misconceptions regarding the progressivity of specific tax policies in the United States. Slemrod (2006) analyses data from a large survey of Americans and finds that many believed that a new sales or flat tax would be more progressive than the current income tax and those who held this belief were significantly more likely to support the sales/flat tax alternatives. Slemrod (2006) closes with a question for future research: whether these misconceptions are causally related to tax policy preferences. Our contribution is directly linked to this question and offers novel insights.[5]

To capture redistributive policy preferences, Alesina, Miano and Stantcheva (2023) and Alesina, Stantcheva and Teso (2018) ask subjects to manipulate income tax rates paid by each quintile, holding total income tax revenues constant, allowing the subjects to observe how their manipulation would change each quintile's actual after-tax income. We follow their practice of holding total tax revenues constant. For reasons we discuss below, we ask respondents to choose among discrete policy options rather than choose tax rates from a continuous set of options. Also holding constant total tax revenues, de Bresser and Knoef (2022) find that, on average, respondents prefer a more redistributive tax system, giving rise to the same conjecture advanced by Slemrod (2006), that knowledge of the incidence of the current tax system increases support for redistributive tax reform. We experimentally evaluate this conjecture.

Other research specifically explores bias against redistributive tax reform, focusing especially on ideologically induced bias. A repeated finding is that information predicted to increase support for redistribution has larger treatment effects among right-leaning respondents. Boudreau and MacKenzie

[2] Numerous studies observe strong effects of similar information treatments on estate taxes (Kuziemko et al., 2015; Sides, 2016; Bastani and Waldenstrom, 2021). Fisman et al. (2020) study preferences for wealth taxation. Again, though, as with the income tax reforms considered in the literature, survey respondents are rarely liable for these taxes.

[3] Fehr, Mollerstrom and Perez-Truglia (2022) report results from a two-year survey experiment in Germany: correcting respondents systematic underestimation of their true place in the world's income distribution does not affect support for policies related to global inequality.

[4] Bublitz (2022) also reports results from a multi-country survey experiment that informs individuals of their place in the income distribution, but with mixed results that she attributes to offsetting treatment effects on those who underestimated and overestimated their position.

[5] Slemrod (2006) also notes that sales and flat taxes could, in principle, be designed in such a way as to make them more progressive. Respondents to our survey are given unambiguous information about the progressivity of different tax options.

(2018) inform survey respondents in California about the true level of inequality in the state. In contrast to Kuziemko et al. (2015) and Stantcheva (2021), they find significant effects on support for specific tax reforms, but only among members of the political party that normally oppose such reforms. Results in Karadja, Mollerstrom and Seim (2017) are similarly driven by respondents who are more right-wing and believe more strongly that economic success is a product of effort rather than luck. Sides (2016) also demonstrates that treatment effects on support for a higher inheritance tax are strongest among right-leaning respondents. We are able to investigate the mechanisms behind this relationship. Specifically, we can show that treatment effects are strongest among those who misperceive the incidence of the VAT, and right-leaning respondents are among those who are most likely to have incorrect perceptions.

2 | HYPOTHESES

Even if they are convinced that inequality is a problem, individuals must still decide what policy options they should support in order to reduce it. Central to this decision is whether the policy reform will solve the problem at a reasonable cost. In the case of inequality, for example, they might ask whether a progressive reform of the VAT will reduce inequality enough to offset the costs of increased progressivity, such as deadweight losses. Data reported by Stantcheva (2021) confirm that these are real concerns: among respondents in the experimental control group, 48 per cent believe that income taxes cause high earners to work less, 43 per cent that they cause spouses of high earners to work less, and 50 per cent that they reduce entrepreneurial activity among high earners.

As the model in online Appendix A demonstrates, beliefs about deadweight losses interact with perceptions of the progressivity of the current tax system to influence support for progressive tax reforms. Consider two individuals who share the same perceptions about post-tax inequality and who derive identical utility from reductions in inequality. However, one of these individuals believes that post-tax inequality is the product of a highly progressive tax system combined with highly unequal pre-tax incomes. This individual therefore expects the deadweight losses from additional progressivity to be high. The other individual believes that post-tax inequality is the product of a regressive tax system and expects that the deadweight losses from additional progressivity will be low. Although both equally value additional equality, the first individual is more likely than the second to oppose progressive tax reform.[6]

This logic yields the two hypotheses in our pre-analysis plan. First, information about the (regressive) incidence of the VAT should increase support for policy reforms that make the VAT more progressive. Treated respondents are more likely to believe that tax reform can significantly reduce inequality with lower deadweight losses. The second, corollary prediction is that the effects of the information treatment should be strongest among respondents with incorrect (excessively progressive) beliefs about the distributional incidence of the VAT.[7]

3 | VALUE-ADDED TAXES IN LATIN AMERICA

The VAT is the single most important source of revenue for Latin American governments and is highly salient for households.[8] Because of its ease of implementation, it is also a favoured instrument for

[6] With two modest concavity assumptions, the model predicts that support for reform falls with the progressivity of the current tax system: first, that deadweight losses are convex in progressivity (they increase faster when the difference between the tax rates of the rich and poor is greater); and, second, that the utility individuals derive from equality is concave in equality (it increases more slowly when equality is already high).

[7] This second hypothesis is less obvious than it appears because, as we discuss below, beliefs about the VAT are highly correlated with respondent ideology. This correlation may make respondents with incorrect beliefs resistant to accurate information.

[8] The VAT accounts for about a third of total revenue collection in a typical Latin American country, and its contribution to the overall tax take is three times as large as that of the personal income tax.

fiscal adjustment. Hence, the three reform options that respondents consider are framed around fiscal crisis: 'how should governments raise tax revenues in response to a fiscal crisis?'

Significant technical advances allow countries to introduce a 'personalised VAT', one that allows poor households to be exempted from VAT payments or to have those payments be refunded to them. Such systems have been introduced in the region, so the three policy options we describe, exempting different deciles of poor households, are not foreign to the survey respondents.[9] Though the details vary, Argentina, Ecuador and Bolivia all return VAT payments made by poor households that use debit cards issued to them by the government. Uruguay goes further and exempts poor households from paying the VAT if they use the government debit card that they have been issued. Colombia's VAT compensation scheme currently reaches around two million poor households.[10]

A key point of departure of the experiment is that the VAT is, in fact, regressive, as the poor consume, and therefore pay VAT on, a larger fraction of their income than the rich.[11] Informality may make the VAT less regressive: lower-income families are more likely to buy from informal businesses at lower prices than those of larger and more formal businesses such as supermarkets (Bachas, Gadenne and Jensen, 2021). However, even the attenuating effect of informality on VAT regressivity depends on assumptions about the pass-through of taxes to informal sector prices.

4 | SURVEY EXPERIMENT

To explore respondent attitudes towards a more progressive VAT, in March 2022 we conducted an online survey in eight countries in Latin America: Argentina, Brazil, Chile, Costa Rica, Colombia, Guatemala, Mexico and Peru. In each country, we collected the answers of 1,500 respondents for a total of 12,000 responses. The survey was administered by the Latin American Public Opinion Project (LAPOP), which, in turn, uses a standing online panel from two different survey providers (Netquest and Offerwise).[12]

The survey is divided into three sections. In the first, respondents answer questions about their nationality, gender, age, region, confidence and trust, views on tax administration, knowledge about who decides tax policy, political participation and alignment, time preferences, risk preferences, and perceptions of their location in the income distribution. In the third section, respondents answer questions about their education, occupation, income and the characteristics of their household.[13]

The second, main part of the survey elicits information about their preferences regarding three possible VAT reforms with varying degrees of progressivity. It also includes an information treatment about the current incidence of the VAT. Treated respondents from the different countries receive the same information about incidence, calculated from household consumption surveys in ten Latin American countries. The uniformity of the treatment is key. By holding constant the level of incidence across respondents we can verify that the effect of information about actual incidence is independent of country-specific conditions. This would not be possible if we gave respondents information about incidence in their own countries.

The potential disadvantage of this strategy is that respondents react differently to the treatment depending on whether the incidence in their own countries is higher or lower than what they are

[9] For overviews, see Barreix et al. (2022), Rastelletti (2021) and Kotlikoff, Lagarda and Marin (2025).

[10] If they believed that exempting poor households from the VAT were impossible or impractical, survey respondents might have been confused by the policy reform options, or not taken them seriously. This would have injected noise into our estimates and reduced the power of the treatment. The large treatment effects indicate, though, that respondent confusion about the personalised VAT was unlikely to have been a serious issue.

[11] It is also the case that the young consume a larger fraction of their income than the elderly. When they look at tax payments over the life cycle, Metcalf (1994) and Gasparini (1998) conclude that the VAT is proportional (though still not progressive). However, the intertemporal criterion may be less relevant to voters and the decisions that governments make to combat fiscal crisis.

[12] The survey was pre-registered at https://osf.io/wd6tb.

[13] The web interface of the survey can be followed interactively at https://vanderbiltpolisci.co1.qualtrics.com/jfe/form/SV_eMbkj4ZVNCCuia2.

shown. This turns out not to be a concern. First, the VAT in all countries in the sample is regressive. Hence, in no case would control respondents have indicated that the VAT is progressive because, in their country, it happened to be. Second, we control for country fixed effects in all specifications to eliminate possible bias due to divergences between country incidence and treatment incidence. Finally, we further report in the robustness section that treatment effects vary little across countries, regardless of how close or far actual VAT incidence is from the regional average.

4.1 | Tax policy reform preferences

Respondents are shown three policy options for raising tax revenues in response to a fiscal crisis. The least progressive exempts no poor households from the tax increase; the moderately progressive reform exempts the poorest 30 per cent of households and asks the remaining households to pay more; the most progressive exempts the poorest 50 per cent of households, raising taxes even more on the remaining households.

These options are carefully constructed to hold constant the amount of tax revenue that each option collects. Two parameters are adjusted to construct the options: the amounts by which tax rates will increase, and the fraction of the population that is exempted from the increased tax rates. We set these parameters to ensure that all reform options increase total VAT collection by the same amount.[14] The baseline adjustment option raises the standard VAT rate by 1 percentage point for all households, enough to finance a 4 per cent increase in total VAT revenues.[15] This is the 'All Pay' option. The 'Top 70% Pay' option redistributes to the poorest 30 per cent. The tax rate therefore rises by more than 1 percentage point on the 70 per cent who pay, such that their total VAT payments rise by 5 per cent, ensuring that the VAT reform still yields an increase of 4 per cent in VAT revenues for the government. The 'Top 50% Pay' option exempts the poorest 50 per cent of voters from paying the higher VAT. The tax rate rises by more than in the Top 70% Pay option and the 50 per cent of households who pay it therefore see a 6 per cent increase in their VAT payments, enough to yield a 4 per cent net increase in VAT payments to the government. These trade-offs are made clear to respondents.

Therefore, the three policy options are the following.

(1) All Pay: 4 per cent increase in VAT payments; no exemptions.
(2) Top 70% Pay: 5 per cent increase in VAT payments by top 70 per cent; poorest 30 per cent are exempted.
(3) Top 50% Pay: 6 per cent increase in VAT payments by top 50 per cent; poorest 50 per cent are exempted.

We calculate the incidence of the current VAT and the key parameters of the three VAT reform options using micro-data taken from household consumption surveys in ten Latin American countries – Argentina, Bolivia, Brazil, Colombia, Chile, the Dominican Republic, Honduras, Mexico, Peru and Uruguay – based on Inter-American Development Bank (2022). With information on both household income and VAT payments, the survey data allow for the calculation of VAT payments as a fraction of household income for households in each income decile. For example, households in the poorest income decile in Argentina pay 20.9 per cent of their income in VAT payments while households in the richest decile pay 8 per cent.

These survey data are also sufficient to calculate how much greater the VAT payments of households in higher deciles would have to be in order to ensure that governments would achieve their VAT

[14] The potential impact of fiscal adjustment itself on income inequality is ambiguous and not mentioned to respondents. Potential heterogeneity in respondent beliefs about this should not introduce bias into the experiment as the adjustment is identical across all options.

[15] For example, if the VAT rate goes from 24 to 25 per cent, household payments rise by an average of 4 per cent.

revenue goals when poorer deciles are exempted from a VAT increase.[16] We first calculate total household consumption in every decile from survey data. We then calculate how much each decile's total VAT payments would rise with a 1 percentage point increase in the standard VAT rate, a typical policy response to fiscal crisis of governments across the region (David and Leigh, 2018).[17]

In the All Pay option, in which no decile is exempted, total VAT revenues rise by approximately 4 per cent following the 1 percentage point increase in the VAT rate.[18] For each of the other two options, Top 70% Pay and Top 50% Pay, we then calculate the additional amount by which the VAT tax rate would have to rise to ensure that total VAT tax receipts to the government still rise by 4 per cent after the bottom three (Top 70% Pay) or bottom five deciles (Top 50% Pay) are exempted.[19] Respondents are told, for each policy option they compare, the percentage increase in monthly VAT payments by the average household in those deciles that would have to pay the increased rate (e.g., all households in the All Pay option, and the highest earning 70 per cent of households in the Top 70% Pay option). Compared with information about the new rates themselves, the percentage increase in total payments is more salient and reduces the cognitive burden on respondents.

All respondents see the three policy alternatives and are then asked to make three pairwise comparisons of each against the others. They indicate on a five-point scale if they are more likely to vote for the government if the government implemented Option x versus Option y. A value of 1 indicates that the respondent is much more likely to support the government that proposes the more redistributive option (e.g., Top 50% Pay); a value of 5 indicates that the respondent is much more likely to support the government that proposes the less redistributive option (e.g., All Pay); and a value of 3 indicates that the respondent is indifferent between the government proposing one option or the other. The order of the three comparisons is randomised across respondents.

After respondents complete these comparisons, they are guided to a new screen that asks them to choose their most preferred option among four alternatives. These are the three policy reforms they previously compared, and an additional option to do nothing: the government should not adjust the VAT to address the fiscal crisis.

Some prior research does not ask respondents to choose from among discrete policy options, as in the experiment described here, but instead asks them to choose tax rates for different groups on the income distribution (e.g., Alesina, Stantcheva and Teso, 2018). The discrete choice approach has two advantages. First, it imposes fewer cognitive demands on respondents, which is of greater concern in countries where educational levels may be lower. Second, it allows us to examine the robustness of the treatment effects to a new and powerful attention check. We can identify respondents whose choices are consistent with or violate the generalised axiom of revealed preferences (GARP) and we investigate how treatment effects vary across respondents whose choices are consistent or not with the GARP.[20]

Inconsistent responses may indicate either genuinely inconsistent preferences or inattention, assessed by time spent on various aspects of the survey. Treatment effects reported below are higher among consistent respondents than among attentive respondents. This reflects the value of

[16] The poorest decile consumes far less than 10 per cent of total household consumption and therefore its VAT payments at any given rate are far less than 10 per cent of total VAT payments. Hence, if the poorest decile is exempted from an increase in the VAT, the amount that the remaining households will have to pay is something less than 10 per cent higher than they would have had to pay if no decile were exempted.

[17] VAT exemptions and rate reductions for particular goods proliferate in most Latin American countries. The survey data are detailed enough to allow us to assign shares of household consumption to the corresponding rates. However, to avoid complicating the options we present to the respondents, we do not mention reduced rates. Our policy options incorporate only increases in the standard VAT rate, not the reduced rates.

[18] The exact amount that the All Pay option increases revenues varies from country to country depending on their prior VAT tax rate and base. However, this variation is small.

[19] As is standard in this type of analysis, we assume that household consumption is inelastic with respect to the changes in the VAT tax rate and that households bear the full burden of the tax (see Lustig, 2018; Inter-American Development Bank, 2022).

[20] GARP violations are more common among our respondents than those reported in incentivised dictator games. Fisman, Kariv and Markovits (2007) and others find that departures from GARP are small among a large sample of individuals who are asked to play repeated dictator games that vary in their budget and other parameters.

this additional check and the potential importance of inconsistent preferences in shaping responses to information treatments.

The consistency results also provide reassurance that the discrete policy choices that respondents compare are reasonable and informative of how they would make choices among policy options that are outside of the choice set. For example, few VAT systems in Latin America can be characterised as All Pay, as many exempt food, effectively reducing the rate paid by the poor. However, although the specifics of the Top 50% Pay option cannot be found in the region, a formal tax regime that exempts a large fraction of the population is not unknown; for instance, household survey data reveal that more than 60 per cent of households have no income tax liability across countries included in our sample.[21]

4.2 | Information treatment

Treated respondents are told the fraction of monthly income devoted to VAT payments by different income groups. This information reveals that lower-income households devote a higher share of their income to VAT payments than higher-income households (see Figure 1). We highlight the fact that the poorest households pay up to 23 per cent of their income on the VAT and the richest households pay only 11 per cent of their income on VAT payments. To increase salience and comprehension, the information is presented both verbally and graphically.[22]

Treatment length or content could affect attrition in the treatment group relative to the control group, potentially biasing responses. However, attrition was notably lower than in prior research and nearly the same in the two groups: on average, 6.2 per cent of respondents in the control group and 6.6 per cent in the treatment group. The difference is entirely insignificant, whether or not we control for country fixed effects and respondent characteristics (see Table C.1 in the online Appendix).[23]

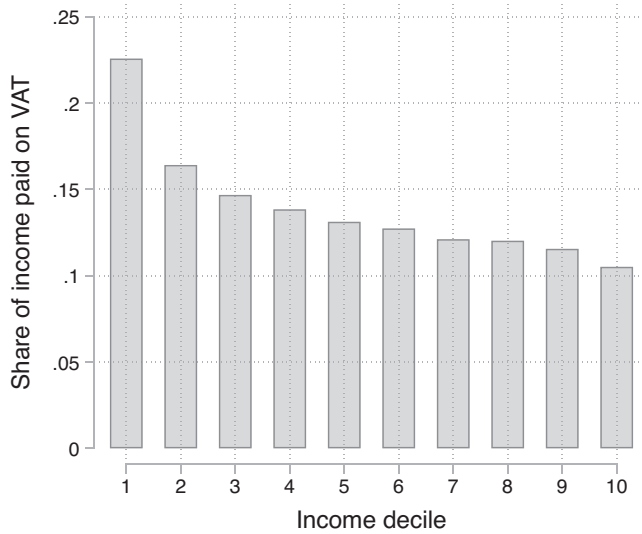

FIGURE 1 Impact of VAT on income deciles; averages across selected countries in Latin America.

[21] For evidence on tax concentration at the top of the income distribution in Latin America and contrasts with the United States, see Riera-Crichton, Venturi and Vuletin (2022).

[22] Online Appendix B shows a screenshot from the survey with the actual graph shown to the treatment group. In order to generate a common treatment across countries, the figure presents average values across the countries in our sample, thus representing the distributive impact of VAT in a typical or representative country in Latin America.

[23] In their work, using more intensive treatments, Kuziemko et al. (2015) and Stantcheva (2021) experienced overall attrition rates of 15 per cent and 19–20 per cent, respectively. In Kuziemko et al. (2015), treated individuals were 11.3 percentage points less likely to finish the survey and in Stantcheva (2021) the treated were between 2 and 6 percentage points less likely.

4.3 | Key variables

The survey collected data on household and respondent characteristics that might influence their support for more progressive tax reform. These included basic data about education, age, gender, household size and employment status. In addition, respondents provided information that gives their actual and perceived location in the income distribution and describes their attitudes on key issues. These responses are all balanced across treatment and control groups. We include them to identify empirical regularities in the data that link this research to prior work, yield surprising new regularities or, most importantly, help to estimate heterogeneous treatment effects that illuminate mechanisms.

4.3.1 | Actual and perceived position in the income distribution

Substantial theoretical and empirical attention has been given to household income as a determinant of redistributive preferences. If respondents are only motivated by their material self-interest, respondents in the top half of the income distribution should prefer the All Pay option over the other two; those in the fourth or fifth deciles should prefer the Top 50% Pay option over the other two; and those in the first, second or third deciles should prefer either of the redistributive options over the first.

Two questions capture households' actual and perceived location in the income distribution. First, prior to entering the VAT portion of the survey, respondents were asked to imagine a staircase with ten steps, with the poorest located on the first step and the richest on the tenth step. Their self-placement on the staircase is their perceived position in the income distribution. Second, we derived their actual position by asking them, at the end of the survey, to place themselves in one of the ten income categories. These categories correspond to the income deciles computed using Latin American household survey data from Sociómetro-IDB and SEDLAC.[24]

Based on their self-placement on the ten-step scale, respondents are grouped into the three income groups that are relevant for the fiscal policy questions: the lower 30 per cent of respondents who classify themselves into the poorest three income deciles; the middle 40–50 per cent of respondents who classify themselves into the fourth and fifth income deciles; and the top 50 per cent of respondents who classify themselves into the sixth to tenth deciles.

4.3.2 | Tax incidence misperceptions

Treatment effects should be strongest among those who have incorrect perceptions of the incidence of tax policy. In the first part of the survey, before the treatment was introduced, both control and treated respondents were asked whether they believe rich households spend a higher, the same, or lower fraction of their income on VAT compared with poor households.[25]

There are two potential issues with this measurement of incidence perceptions. One is the possibility that the respondents misunderstood the question. This possibility is minimised by the wording of the question, which emphasises that the tax is paid on household consumption and that respondents should consider the total value-added taxes paid by the household as a fraction of household income.

If respondents nevertheless misinterpreted the question, it would have generated two types of errors. Each type would have biased downwards the estimated impact of the information treatment on those

[24] The distribution of respondents for these two variables is shown in Figure C.1 in the online Appendix.

[25] The exact question wording is as follows. 'Over the course of a year, all households will have dedicated a certain percentage of their income to paying Value Added Tax (VAT) for the goods and services they purchased. What do you think is the percentage of income paid by poor households and rich households on VAT? Do you think that rich households spend a higher percentage of their income paying VAT, or a lower percentage, compared to poor households?' Respondents choose one of five possible answers: (1) rich households spend a *much higher* percentage of their income in VAT payments; (2) rich households spend a *higher* percentage; (3) rich and poor households spend *about the same* percentage; (4) poor households spend a *higher* percentage; and (5) poor households spend a *much higher* percentage of their income in VAT payments.

with misperceptions.[26] We find, nevertheless, a large and significant treatment effect, indicating that any bias due to mistaken responses is likely to be small.

The second potential issue is that we ask respondents to make qualitative judgements about incidence, in contrast to some prior research in which respondents provide point estimates. The substantive rationale for this design choice is that respondents think about these issues in qualitative terms and lack the experience and knowledge necessary to formulate their beliefs in quantitative terms. Qualitative responses relieve them of the need to translate their qualitative beliefs about incidence into quantitative estimates using an unobservable algorithm that is likely to vary across respondents.[27] The methodological rationale for the design choice is the prior experience of the research team with surveys in Latin America. Respondents exhibited significant frustration when they were asked for precise answers to questions for which they had no precise information. The qualitative format avoids this drawback.

4.3.3 | Attitudinal controls

The survey collected additional information that is particularly useful for understanding mechanisms. We asked respondents where they locate themselves ideologically, on a 10-point scale from left to right; right-leaning respondents were significantly more likely to underestimate the regressivity of the VAT.

Individuals' support for redistribution can also depend on whether they believe that success in life depends on one's own efforts. Those who believe this is the case turn out to have the misconception that the VAT is progressive.[28]

Beliefs about the potential for upward mobility in society might also affect support for progressive tax reform and perceptions about the progressivity of the VAT. Respondents therefore indicated which of four statements they most agreed with, from 'almost all children from poor households have the same opportunities as children from rich households' to 'almost no child from a poor household has the same opportunities as children from rich households'. Again, these beliefs are strongly associated with misconceptions about the incidence of the VAT.

Respondents had an opportunity to indicate which two potential problems in their country, out of a list of 14, most concerned them. The list was randomly reordered for each respondent. From these choices, we constructed a dummy variable to indicate those respondents who were most concerned about inequality and poverty. They were more in favour of progressive tax reform and more likely to say that the VAT was regressive.

Finally, the survey also asked various questions related to trust in others and in government. These did not have systematic effects on either preferences for tax reform or misconceptions regarding the incidence of the VAT.

[26] First, respondents could have incorrectly responded that the rich pay a higher fraction of their income, despite correctly believing that the poor pay a higher fraction of their income. Treated respondents with correct beliefs marked as incorrect would not have reacted to the treatment, as their true beliefs match the information in the treatment. Hence, they would have expressed the same policy preferences as control respondents with correct beliefs that were marked as incorrect, suppressing the estimated impact of misperceptions on treatment impact. Second, respondents might have correctly responded that the poor pay a higher fraction despite incorrectly believing that the rich pay a higher fraction. Treated respondents with incorrect beliefs, but marked as having correct beliefs, would have reacted to the treatment and expressed a preference for more progressive policies. Untreated respondents with incorrect beliefs, but marked as having correct beliefs, would not have expressed a preference for more progressive policies. This pattern of responses exacerbates the difference between treated and control respondents marked as having correct perceptions, biasing downwards the estimated impact of the treatment on those with incorrect perceptions.

[27] Krupnikov et al. (2006) find that when they offered one dollar to respondents who correctly answered a question about estate tax incidence, the number of correct responses increased by more than 30 per cent. Our questions about incidence are not incentivised, but in Stantcheva (2021) incentivised and non-incentivised respondents give similar responses to questions about the incidence of income tax burdens. In any case, the possible inaccuracy of responses does not bias our experimental results; misperceptions are balanced between treatment and control group respondents.

[28] The exact question wording is as follows. 'With which of statements A or B are you more in agreement? A. People's incomes are the product of their individual efforts; or B. People's incomes are the product of factors outside of their control?'

Figure E.1 in the online Appendix confirms that the treatment and control groups are balanced with respect to all observable variables. This is unsurprising given the random assignment of respondents to treatment and control groups. The analysis provides reassurance that the two groups are likely to be balanced as well with respect to unobservable characteristics.

4.4 | Policy preferences and beliefs: descriptive evidence

Apart from the experimental results, the survey yields novel evidence about preferences for redistribution in Latin America and perceptions about the distributive incidence of the major source of government revenues in the region. This section describes respondents' tax policy preferences and beliefs about who bears the burden of VAT payments.

The top panel of Table 1 reports the share of respondents in the control group (whose preferences for redistribution are not affected by the information treatment) who indicated a preference for the less redistributive option in three pairwise comparisons. On average, more than a third of respondents prefer All Pay to Top 50% Pay, 34 per cent prefer All Pay to Top 70% Pay, and approximately 40 per cent prefer Top 70% Pay to Top 50% Pay. When comparing the less redistributive option (All Pay), against the more redistributive alternative (Top 50% Pay), support for All Pay ranges from 26 per cent in Brazil to 42 per cent in Guatemala. The bottom panel of Table 1 reports the fraction of respondents who expressed a preference for the respective policy when asked to choose from among the reform alternatives.[29] While the Top 50% Pay option received the most votes on average, the level of support ranges from only 26 per cent in Guatemala to 42 per cent in Chile.

Table 2 reports the distribution of answers to the key question on tax policy misperceptions: whether respondents believe rich households spend a higher, the same or a lower fraction of their income on VAT compared with poor households. As in prior research looking at perceptions of income tax incidence, perceptions of VAT incidence are often wrong: only 35 per cent of respondents believe that poor households tend to pay a higher fraction of their income in VAT than the rich. A majority of

TABLE 1 Tax reform preferences.

Reform options	All	Argentina	Brazil	Chile	Colombia	Costa Rica	Guatemala	Mexico	Peru
Percentage of respondents who prefer:									
All Pay to									
Top 50% Pay	0.344	0.300	0.260	0.305	0.318	0.356	0.417	0.404	0.390
All Pay to									
Top 70% Pay	0.326	0.295	0.261	0.261	0.289	0.363	0.398	0.368	0.374
Top 70% Pay to									
Top 50% Pay	0.398	0.315	0.373	0.347	0.424	0.447	0.447	0.420	0.408
Preferred choice:									
All Pay	0.297	0.342	0.219	0.235	0.222	0.314	0.396	0.322	0.328
Top 70% Pay	0.297	0.227	0.328	0.281	0.357	0.314	0.240	0.310	0.321
Top 50% Pay	0.326	0.311	0.377	0.423	0.348	0.307	0.257	0.286	0.296
No adjustment	0.080	0.121	0.076	0.061	0.073	0.065	0.107	0.082	0.054

Note: This table presents the support of the control group for different policy options. The top panel reports the share of respondents in each country that reported preferring the less redistributive policy (reported first) for each of the three pairwise comparisons. The bottom panel reports the share of respondents that selected each of the available policy options as their preferred option.

[29] Only a small share of respondents, about 8 per cent, favour no fiscal adjustment. We do not attach a strong interpretation to the fact that more respondents prefer an uncompensated tax hike to doing nothing.

TABLE 2 VAT misperceptions.

Policy misperceptions	All	Right	Left/ Center	Argentina	Brazil	Chile	Colombia	Costa Rica	Guatemala	Mexico	Peru
Rich > Poor	0.252	0.326	0.227	0.274	0.212	0.210	0.228	0.237	0.258	0.242	0.355
Rich = Poor	0.394	0.400	0.392	0.420	0.313	0.339	0.439	0.384	0.427	0.426	0.402
Rich < Poor	0.354	0.274	0.381	0.306	0.475	0.451	0.333	0.378	0.314	0.331	0.242

Note: This table reports the distribution of VAT incidence perceptions by political alignment and country for both treatment and control groups. Each cell reports the share of respondents in each country that stated that rich households spend a higher percentage of their income on VAT payments than poor households (for the first row, abbreviated as 'Rich > Poor'), a similar percentage (for the second row, 'Rich = Poor') or a lower percentage (for the last row, 'Rich < Poor').

respondents in every country have incorrect beliefs. The share of respondents who (correctly) believe that the poor pay a greater share of their income on VAT than the rich ranges from 24 per cent in Peru to 47 per cent in Brazil. Misperceptions are significantly more common among respondents who express right-leaning political alignments. Only 27 per cent of right-leaning respondents, compared to 38 per cent of center- or left-leaning respondents, correctly indicate that the poor pay a greater share of their income on VAT than the rich. The empirical analysis that follows asks whether tax policy preferences are affected by information on the distributive incidence of the VAT and explores whether the effects vary depending on prior beliefs about who bears the burden of the tax.

5 | EMPIRICAL STRATEGY

Tests of two hypotheses highlighted in the pre-analysis plan are at the core of the analysis.[30] The first is whether the treatment increases respondent support for policy reforms that increase the VAT while compensating lower-income households. The second is whether treatment effects are greater among individuals who misperceive the distributional impact of the VAT.

The empirical specification to test the first hypothesis takes the following form:

$$y_{ic} = \alpha_c + \theta_1 Treated_i + \theta_2 X_i + \varepsilon_{ic}. \quad (1)$$

The variable y_{ic} captures the VAT reform options preferred by respondent i in country c. Following the pre-analysis plan, there are different versions of the variable, capturing respondent preferences across binary comparisons of the three options All Pay, Top 70% Pay and Top 50% Pay. $Treated_i$ is an indicator variable that equals 1 if respondent i received the information treatment, and 0 otherwise. The coefficient of interest, θ_1, captures the average differential change between those who received the information treatment and those who did not.

Estimates include a complete set of country fixed effects α_c to control for unobserved cross-country heterogeneity. Control variables X_i in equation (1) include the respondent's actual position in the income distribution, education, age, gender, employment status, whether the worker is informal or retired, whether the respondent receives any government subsidy, and household size. Some specifications also control for respondents' attitudes: their perceived location in the income distribution, whether they consider inequality and poverty as the main problems in their country, trust in the current government, beliefs about the determinants of economic success (luck versus effort), beliefs about the life opportunities of poor children, previous knowledge about who decides tax policy,

[30] The pre-analysis plan lists a number of non-experimental hypotheses regarding the effects on redistributive preferences of: income; trust, discount rates and other behavioral characteristics; and ideology. The discussion below of the estimated coefficients of the control variables touches on these.

and political alignment (left versus right). Finally, ε_{ic} is the clustered error term that allows correlation within countries.

To investigate the heterogeneity of treatment responses across respondents with different beliefs about the distributional incidence of the VAT, we estimate

$$y_{ic} = \alpha_c + \theta_1 Treated_i + \theta_2 (Treated_i \times Z_i) + \theta_3 Z_i + \mu_{ic}. \quad (2)$$

The coefficient of interest in this augmented version of equation (1) is θ_2. It captures the differential effect on tax policy preferences of those who receive the information treatment but differ in their perceptions about the regressivity of the VAT, Z_i.

6 | RESULTS

6.1 | Graphical evidence

Respondents first made pairwise comparisons between All Pay and Top 70% Pay, between Top 70% Pay and Top 50% Pay, and between All Pay and Top 50% Pay. They indicated their preferences using the five-point scale described in the previous section, where 1 or 2 indicate support for the first (less redistributive) option, 4 or 5 support for the second (more redistributive) option, and 3 reflects indifference. Respondents then indicated their preferred policy from among any of the three options plus the added option of no VAT reform at all, despite the fiscal crisis that the government confronts.

As shown by Figure 2(a), when respondents are asked to choose their preferred reform alternative, treated respondents expressed substantially less support for the least redistributive option, All Pay, and more support for the two more redistributive options: Top 50% Pay and Top 70% Pay, respectively. Similarly, Figure 2(b) shows that treated respondents are significantly more likely to prefer the more redistributive option when confronted with pairwise comparisons. The magnitude of the effect is largest, and substantial, in the most redistributive option, Top 50% Pay. This is not surprising, as a larger share of respondents were likely to perceive that they would personally benefit from this option.

6.2 | Regression results: average treatment effects

Table 3 further examines the treatment effect using a series of ordinary least-squares (OLS) regression models with country fixed effects.[31] As anticipated in the pre-analysis plan, we use two outcome variables for the analysis of the pairwise comparisons. In Table 3, the dependent variable in columns 1–3 is the five-point scale categorical variable where higher values indicate greater support for the less redistributive option (e.g., a preference for All Pay over Top 70% Pay). We also construct a dummy variable that equals 1 if the respondent supports the less redistributive option, and 0 otherwise.[32] Columns 4–7 focus on responses to the question asking respondents which of four policy options they most preferred. The outcome variable in each column is a dummy variable that equals 1 if the respondent chose the option listed at the top of the column (e.g., All Pay) and 0 otherwise.

Specifications in Panel A regress the respective outcome variable on the treatment dummy; Panel B does the same but includes a series of socio-economic control variables; and Panel C includes variables capturing a respondent's subjective perceptions, beliefs and knowledge in addition to the socio-economic controls.[33]

[31] The summary statistics of all relevant variables are given in Table C.2.

[32] Results from probit estimates of specifications using this dependent variable are similar and reported in Table E.2.

[33] The results for the control variables are given in Table E.1.

TABLE 3 Main effects: VAT experiment.

	Prefer All Pay to Top 70% Pay	Prefer Top 70% Pay to Top 50% Pay	Prefer All Pay to Top 50% Pay	Preferred choice from four options			
	(1)	(2)	(3)	All Pay (4)	Top 70% Pay (5)	Top 50% Pay (6)	No adj. (7)
Panel A. Baseline							
Treated	−0.049***	−0.050**	−0.112***	−0.039**	0.022	0.025**	−0.008
	(0.014)	(0.020)	(0.021)	(0.015)	(0.014)	(0.010)	(0.004)
Panel B. Baseline + socio-economic controls							
Treated	−0.050***	−0.050**	−0.114***	−0.040**	0.022	0.027**	−0.008
	(0.013)	(0.021)	(0.022)	(0.015)	(0.014)	(0.010)	(0.005)
Panel C. Panel B + knowledge/beliefs/perceptions							
Treated	−0.051***	−0.051**	−0.114***	−0.040**	0.022	0.027**	−0.008
	(0.013)	(0.020)	(0.021)	(0.014)	(0.014)	(0.009)	(0.005)
Observations	12,152	12,152	12,152	12,152	12,152	12,152	12,152
Mean dependent variable	2.906	3.066	2.893	0.277	0.308	0.338	0.076
Mean dependent variable (control)	2.931	3.091	2.949	0.297	0.297	0.326	0.080
SD dependent variable (control)	1.358	1.304	1.396	0.457	0.457	0.469	0.271
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents estimates of the treatment effect from a linear regression model. The dependent variable in columns 1–3 takes values from 1 to 5, where 1 indicates a much greater preference for the more redistributive option (e.g., Top 70% Pay) and 5 a much greater preference for the less redistributive option (e.g., All Pay). The pre-analysis plan also called for estimates using a dichotomised version of the dependent variable and estimates based on probit and ordered probit. Table E.3 presents ordered probit estimates using the five-point scale dependent variables, whereas Table E.2 reports probit estimates for the dummy versions. Respondents were also asked to choose which of four options they preferred: the least redistributive (All Pay), the more redistributive (Top 70% Pay or 50% Pay) or no action (No adj.). Treatment effects on the probability of choosing each of these are indicated in columns 4–7. 'Treated' is an indicator variable that takes a value of 1 if it received the treatment of experiment 1, and 0 otherwise. Clustered standard errors at the country level are reported in parentheses. ***, **, and * denote significance at the 1, 5, and 10 per cent levels, respectively.

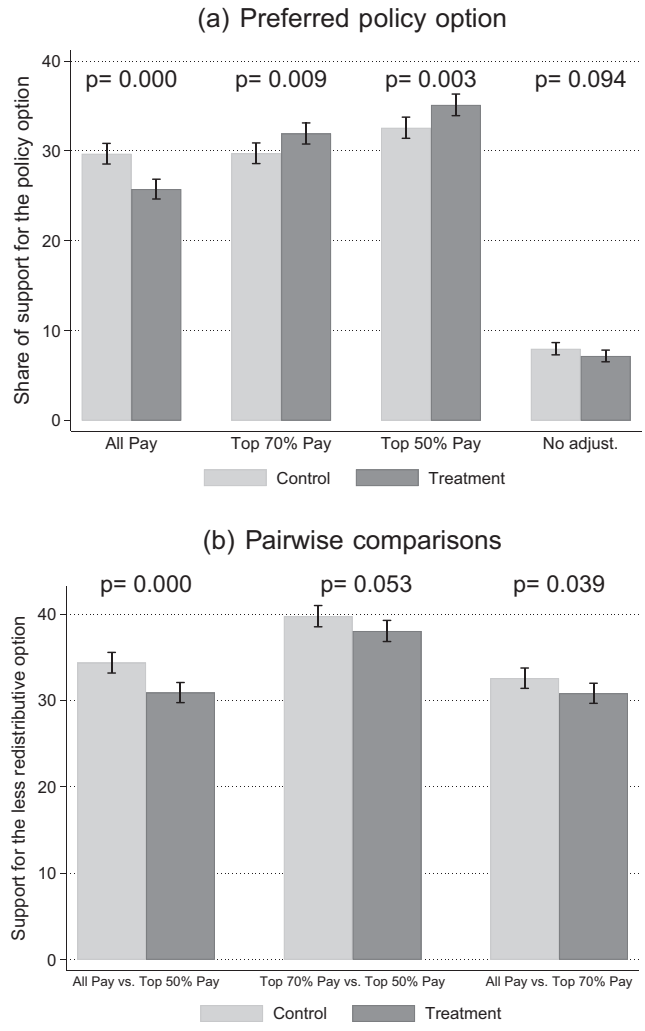

FIGURE 2 Support for policy options, in per cent. *Note*: This figure presents the support for different policy options by treatment status. (a) plots the distribution of preferred policy options, while (b) reports the share of respondents that reported preferring the less redistributive policy option (reported first) for each of the three pairwise comparisons. We present the *p*-value of a test whose null hypothesis is that the proportions in the treatment and control groups are equal. Columns 1–3 in Table C.2 present probit estimates of the treatment effect using as dependent variables three dummies (one per comparison) that take the value of 1 if the respondent prefers the less redistributive option, and 0 otherwise (i.e., if the respondent is indifferent or prefers the more redistributive option).

The results confirm the graphical analysis of Figure 2. The information treatment has a consistent and statistically significant impact on support for the different adjustment options. The negative signs on the coefficients in the 'Treated' rows of Table 3 indicate that respondents who were informed about the regressive impact of the VAT are less likely to choose the more regressive option All Pay over the more progressive options, Top 70% Pay or Top 50% Pay. The coefficients on the specifications using the dichotomous dependent variable, reported in Table E.2, illustrate the magnitude of the treatment effect. Column 3 in Table E.2 indicates that the information treatment reduces support for a government that proposes the least redistributive option by 3.4 percentage points from a base of 34 per cent in the control group, a 10 percentage point decrease and, in an electoral context, very significant. This pattern of results is unchanged using an ordered probit model (Table E.3).

Treatment effects are similar whether looking at respondents' pairwise comparisons of different reform options or their choices from among all possible policies. Treated respondents are significantly less likely to support the most regressive option, All Pay (column 4) than the other three options. The magnitude of the effect is large, particularly in electoral terms, with 3.9 per cent fewer treated respondents supporting governments that adopt the regressive option. Most of these respondents support, instead, governments who implement the Top 50% Pay option.

The treatment in Kuziemko et al. (2015) increases the preferred rate of taxation on the top 1 per cent, which respondents do not pay, by 0.05 standard deviations of the control group's preferred tax. The Top 50% Pay option benefits more respondents than any other in our experiment but also imposes the highest tax rates on the remaining large fraction of respondents. Nevertheless, the treated group expresses 0.11 standard deviation greater support for governments that propose this option rather than the non-redistributive All Pay option.

Another way to see that these effects are substantively important is to compare them with the effects of other respondent characteristics that are known to be electorally important: political alignment, concern for inequality, and beliefs about the relative opportunities of children from poor and rich households. Estimates of their association with preferences for redistribution are given in Table E.1.

A one standard deviation leftward shift in political alignment increases by 2 percentage points the probability of supporting the Top 70% Pay option, which increases taxes paid by about 70 per cent of respondents, compared with the more regressive All Pay option. The effect of the information treatment is larger than this. Treatment effects are similar to the impact of concerns about inequality and poverty and are half as large as the effect of believing that poor children have fewer opportunities than rich children.

Among the control variables, ideology and beliefs have the strongest consistent impact on a respondent's fiscal attitudes (see Table E.1). Compared with left-leaning respondents, those on the right are significantly more likely to support the more regressive over more redistributive options (e.g., All Pay over Top 70% Pay). Respondents who do not indicate that inequality and poverty are among their two greatest concerns are similar to right-leaning respondents. Respondents who agree more with the statement that children from poor households have the same opportunities as children from rich households also express significantly less support for the more redistributive reform options.[34]

Respondents' actual location in the income distribution, based on their reports of the income decile to which their household belongs, exhibits a counter-intuitive relationship with preferences for redistribution. Contrary to their material interests, and to the hypotheses specified in the pre-analysis plan, respondents in the bottom 30 per cent of the income distribution are more likely to support less redistributive options than those in the top 50 per cent group (the reference category in our analysis). The same is true for the respondents in the fourth and fifth deciles of the income distribution.

However, when we compare respondents' actual location in the income distribution, based on household income information that they provide at the end of the survey, with their perceived location, based on information they provide at the beginning, significant inconsistencies emerge. In line with previous research (Cruces, Perez Truglia and Tetaz, 2013; Karadja, Mollerstrom and Seim, 2017), respondents have difficulty placing themselves in the income distribution.[35] Hence, we also ask how perceived location in the income distribution is related to preferences for redistributive tax reform. These coefficient estimates yield more intuitive results.

Respondents who perceive themselves to be in the bottom three deciles or in the fourth and fifth deciles of the income distribution are more likely to choose the most redistributive option, Top 50%

[34] Tests of these observational hypotheses were specified in the pre-analysis plan. Other pre-specified hypotheses find less support. The belief that luck is a significant determinant of income is positively associated with redistributive preferences, but is significant in only some specifications. Individual beliefs about local collective action capacity are not significant. Standard survey measures of trust in others, public officials and politicians have no effect on preferences for VAT reforms.

[35] As Figure C.1 shows, respondents tend to place themselves closer to the middle of the income distribution than their actual income would suggest. Poor respondents perceive themselves as less poor and rich respondents perceive themselves as less rich than they really are.

Pay, over All Pay. These results are robust to whether or not the specification controls for actual location in the income distribution. However, even perceived income is not correlated with preferences across other policy comparisons (e.g., Top 70% Pay versus All Pay).[36]

6.3 | Robustness and external validity

Online Appendix D details evidence that mitigates concerns about several threats to robustness and external validity. One robustness concern is that the results are the product of experimenter demand effects. It turns out, however, that the upper limits on demand bias are generally low (de Quidt, Haushofer and Roth, 2018; Mummolo and Peterson, 2019) and the structure of our experiment has several characteristics that make it lower still. First, both control and treated individuals are primed to think about inequality, as in Hoy and Mager (2021). Second, the survey is online and online surveys are less vulnerable to experimenter demand bias: respondents are anonymous to the experimenter and to each other and do not interact directly with anyone while completing the survey (Hoy and Mager, 2021). Third, the information treatment is short. In addition, as discussed in the next section, treatment effects are largely driven by those who incorrectly believe that the VAT is progressive. There is no reason to believe that individuals with these beliefs are more susceptible to experimenter demand effects.

A second robustness concern is that the results are driven by respondents who did not understand the policy alternatives. Close to 70 per cent of the sample correctly answered at least one of two questions testing their understanding of the distributive effects of the different reform options. Treatment effects are significantly larger when estimated only using this group of respondents. Estimated effects are also unchanged or larger when excluding respondents who spent the least or the most time on different parts of the survey, including the entire survey.

A third potential robustness concern is that treatment effects are driven by respondents whose policy choices violate the GARP. Approximately 39 per cent of respondents violated the GARP in at least one of the policy comparisons that they made. Treatment effects are significantly larger among respondents who answered consistently compared with those who exhibited at least one GARP violation.

One notable finding in this context is that controls for attentiveness are insufficient to identify consistent respondents. In fact, consistent respondents exhibit notably stronger treatment effects than attentive respondents. This is because consistency is a function not only of interest and attention, but also of respondent income and education.

Finally, two features of the experimental design could raise questions related to external validity. One is whether respondent reactions are influenced by differences between the average incidence of the VAT that is described in the information treatment and the specific VAT incidence in their own country. Online Appendix D reviews a series of results showing that individual country results are similar to the average treatment effect. This is true, in particular, for countries with a VAT incidence that diverges significantly from the average incidence used in the survey.

The use of online survey panels also raises concerns about external validity. Firms employ these panels for market research, but they are nevertheless not fully representative of the general population. We re-estimate our main specifications applying the sample weights provided by our survey administrator for gender, education, age and region of residence. Notably, the types of individuals who are under-represented in the online samples, and whose influence is therefore enhanced by the survey weights, are also the ones who are less attentive and consistent in their responses. The magnitudes and significance of the estimates drop somewhat, especially for the treatment effect of the All Pay versus

[36] Misperceptions regarding one's location in the income distribution are likely to be related to unobserved characteristics that also influence demand for redistributive policies.Weisstanner and Armingeon (2022) note that perceptions of location in the income distribution are endogenous. They also find, in their study of Swiss respondents, that perceived income is only associated with redistribution preferences among centre-right, not left-leaning respondents.

Top 70% Pay choice. However, effects on All Pay versus Top 50% Pay and the preferred choice from among all options (Top 50% Pay) are statistically and economically robust.

7 | MECHANISMS: THE ROLE OF TAX INCIDENCE MISPERCEPTIONS

The experimental data demonstrate that individuals informed of the actual incidence of the VAT are more likely to prefer progressive tax reforms than uninformed individuals. However, prior research links individual support for progressive tax reform to deeper beliefs regarding individuals' views of the world (Boudreau and MacKenzie, 2018; Stantcheva, 2021). Moreover, misconceptions about tax reform can also be rooted in such beliefs as individuals are reluctant to acquire information that demonstrates that policies operate in a way that is inconsistent with their beliefs (see, e.g., Bénabou and Tirole, 2016). How do information treatment effects interact with respondents' beliefs and knowledge?

The rich data from the survey allow us to explore the mechanisms linking misperceptions of VAT incidence to opposition to progressive tax reform, the second hypothesis specified in the pre-analysis plan. Two key conclusions emerge from this exploration. First, the effects of the information treatment are strongest among respondents with misperceptions regarding incidence. Second, misperceptions appear not to be related to the availability of relevant knowledge; education is not correlated with beliefs about the progressivity of the VAT. Instead, policy misperceptions are correlated with individuals' world views; they are consistently higher among right-leaning respondents, respondents who believe that poor children have similar opportunities as children in rich households, and respondents who believe that effort is more important than luck in determining household incomes.

It is intuitive that misperceptions about the progressivity of the VAT might be strongest among individuals with these beliefs. Less intuitive and more remarkable is the finding that information that corrects these misperceptions is sufficient to overcome these beliefs and change respondents' preferences regarding progressive tax reform.

7.1 | Misperceptions about the incidence of VAT

We first examine how respondents' prior beliefs about the distributive impact of the VAT influences policy choices. Table 4 regresses the outcome variables on PerceptVAT, a variable that takes higher values for those respondents who incorrectly perceive that the VAT is progressive, and on the interaction of PerceptVAT with the treatment variable.[37] The coefficient estimates of PerceptVAT are positive, indicating that untreated respondents who incorrectly believe that rich people pay a greater share of their income on the VAT than poor people are significantly more likely to support the All Pay option, which does not compensate poor people. The effect is most pronounced when this option is compared with the most redistributive alternative, Top 50% Pay.

The negative coefficient on the interaction term reveals that the information treatment significantly moderates the impact of misperceptions, especially when the respondents compare the least and most progressive options. Figure 3 shows the marginal effect of the information treatment among respondents with different perceptions regarding the impact of the VAT. The strongest treatment effects are observed among those who misperceive the impact of the VAT. Those who (correctly) believe that poor people pay a greater share of their income on VAT than rich people are less likely to prefer the less redistributive reform to the more redistributive reform, but the point estimate is not statistically significant. Those who (incorrectly) believe that rich people pay a greater share of their income on

[37] The misperceptions variable takes a value of 1 if the respondent believes that richer households spend a higher or similar percentage of their income on VAT payments relative to poorer households, and 0 otherwise.

TABLE 4 Heterogeneous treatment effects: misperceptions of VAT incidence.

	Prefer All Pay to Top 70% Pay	Prefer Top 70% Pay to Top 50% Pay	Prefer All Pay to Top 50% Pay	Preferred choice from four options			
	(1)	(2)	(3)	All Pay (4)	Top 70% Pay (5)	Top 50% Pay (6)	No adj. (7)
Treated × PercepVAT	−0.098	−0.097**	−0.111**	−0.028	0.008	0.022	−0.002
	(0.061)	(0.038)	(0.042)	(0.017)	(0.019)	(0.021)	(0.012)
Treated	0.014	0.013	−0.040	−0.021	0.016	0.011	−0.007
	(0.048)	(0.023)	(0.041)	(0.019)	(0.016)	(0.015)	(0.009)
PercepVAT	0.185**	0.194***	0.220***	0.065***	0.008	−0.068**	−0.005
	(0.066)	(0.047)	(0.044)	(0.013)	(0.014)	(0.021)	(0.010)
Constant	2.811***	2.966***	2.807***	0.255***	0.292***	0.370***	0.083***
	(0.044)	(0.030)	(0.031)	(0.008)	(0.008)	(0.015)	(0.006)
Observations	12,152	12,152	12,152	12,152	12,152	12,152	12,152
Mean dependent variable	2.906	3.066	2.893	0.277	0.308	0.338	0.076
Mean dependent variable (control)	2.931	3.091	2.949	0.297	0.297	0.326	0.080
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table presents the results of heterogeneous treatment effects. The dependent variable in columns 1 to 3 takes values from 1 to 5, where 1 indicates a much greater preference for the more redistributive option (e.g., Top 70% Pay) and 5 a much greater preference for the less redistributive option (e.g., All Pay). Respondents were also asked to choose which of four options they preferred, the least redistributive, All Pay, more redistributive 70 per cent Pay or 50 per cent Pay, or no action (No Adj). Treatment effects on the probability of choosing each of these are indicated in columns 4–7. 'Treated' is an indicator variable that takes values of 1 if it received the information treatment, and 0 otherwise. 'PercepVAT' is an indicator variable equal to 1 if respondent believes that rich households spend a higher or similar percentage of their income on VAT payments relative to poor households, and 0 otherwise. Clustered standard errors at the country level are reported in parenthesis. ***, **, and * denote significance at the 1, 5, and 10 per cent levels, respectively.

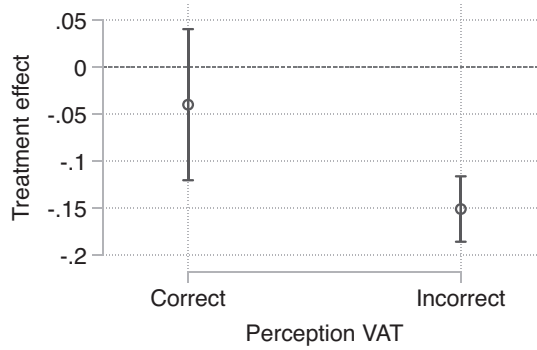

FIGURE 3 Treatment effects by perception about VAT incidence. *Note*: This figure presents treatment effects conditional on the respondent's perception of the impact of the VAT. The results are based on the model in column 3 of Table 4. The dependent variable takes values from 1 to 5, where 1 indicates a much greater preference for the more redistributive option (i.e., Top 50% Pay) and 5 a much greater preference for the less redistributive option (i.e., All Pay). Respondents have an incorrect perception of VAT incidence if they (incorrectly) believe that richer households spend the same or a higher percentage of their income on VAT relative to poorer households. Respondents with a correct perception of VAT incidence believe that poorer households spend a higher percentage of their income on VAT relative to richer households.

VAT are significantly less likely to prefer the less redistributive treatment option; the point estimate is larger and the 95 per cent confidence interval does not span the zero line. In short, the treatment effect is driven by misinformed people who change their attitude towards progressive fiscal reform when they learn that their beliefs about the incidence of the VAT are wrong.

Figure E.4 shows the treatment effects for three categories of VAT perceptions: those with correct perceptions, those who believe that the poorer and the richer pay the same, and those that believe that the richer pay more than the poorer.[38] It turns out that the treatment primarily shifts the attitudes of those who believe that the poorer and richer pay the same.[39] This estimate is large and precisely estimated. The point estimate for those who believe that the richer pay more is also negative, but considerably smaller and barely statistically significant at the 5 per cent level. This latter group not only reacts less to the treatment, but is also systematically more opposed to redistribution than the other two groups.

7.2 | Correlates of policy misperceptions

Table 5 displays the correlates of tax incidence misperceptions. Beliefs and ideology, but not education, are significantly related to misperceptions. The positive coefficient on political alignment in Table 5 shows that people on the centre/right tend to be more likely to report that the rich pay a larger fraction of their incomes in VAT than the poor. In contrast, people who think inequality and poverty are a significant concern are more likely to believe that the poor pay a larger fraction than the rich, as the negative coefficient on concern for inequality in Table 5 shows.

We might therefore expect that the information treatment should mostly affect people on the centre and right of the ideological spectrum because the perceptions of VAT incidence of those on the left are more consistent with its actual distributive impact. Similarly, the treatment should affect respondents who believe that inequality is the main problem less than those who believe other issues to be more salient. This is because the perceptions of the latter about the VAT impact are less accurate than the perceptions of the former. This is what Figures 4 and 5 show.[40]

[38] Table E.13 replicates Table 4 using these three groups.

[39] After the treatment, the average support for redistribution is almost identical to the average support in the group that (correctly) believes that the poor pay more than the rich.

TABLE 5 Correlates of VAT misperceptions.

	VAT incidence misperception				
	(1)	(2)	(3)	(4)	(5)
Educated	0.005	−0.009	−0.007	−0.015	−0.015
	(0.016)	(0.016)	(0.015)	(0.015)	(0.015)
PoliticalAlign	0.027***	0.027***	0.026***	0.026***	0.022***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)
Bottom30Actual		−0.053***		−0.036**	−0.043**
		(0.014)		(0.014)	(0.013)
B40and50Actual		−0.005		0.002	−0.001
		(0.016)		(0.015)	(0.015)
Bottom30Perceived			−0.095***	−0.083***	−0.070***
			(0.009)	(0.007)	(0.008)
B40and50Perceived			−0.022	−0.017	−0.012
			(0.012)	(0.011)	(0.010)
KnowledgeTaxes					−0.001
					(0.010)
ConcernIneqPov					−0.044***
					(0.010)
TrustGov					0.021
					(0.018)
BeliefsLuck					−0.028***
					(0.007)
PoorChildOpportunity					−0.092***
					(0.017)
Constant	0.499***	0.526***	0.542***	0.553***	0.654***
	(0.019)	(0.021)	(0.023)	(0.025)	(0.028)
Observations	12,152	12,152	12,152	12,152	12,152
R^2	0.039	0.041	0.043	0.044	0.054
Mean dependent variable	0.580	0.580	0.580	0.580	0.580
Country fixed effects	Yes	Yes	Yes	Yes	Yes

Note: This table presents the determinants of respondents' misperceptions about VAT. The dependent variable is a dummy variable equal to 1 if the respondent believes that rich households spend a higher or similar percentage of their income on VAT payments relative to poor households, and 0 otherwise. BottomXXActual and BottomXXPerceived identify respondents whose reported income puts them in the bottom XXth percentile and whose perceived income puts them in the bottom XXth percentile, respectively. Clustered standard errors at the country level are reported in parentheses. ***, **, and * denote significance at the 1, 5, and 10 per cent levels, respectively.

Figure 4 illustrates the impact of the information treatment for respondents who place themselves on different locations on the left–right political dimension. The treatment does not affect respondents on the left; the marginal effect for these respondents is zero, which means that treated and untreated respondents from the left, on average, do not differ when they compare options All Pay versus Top 50% Pay. In contrast, the information treatment has a strong effect on respondents on the right; they are correspondingly less likely to select the least redistributive option, All Pay, over the most redistributive alternative, Top 50% Pay, when they learn about the regressive impact of the VAT.

[40] The figures are based on the results in Tables E.15 and E.16.

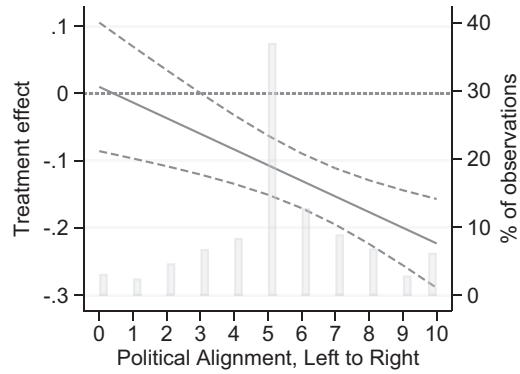

FIGURE 4 Treatment effects by political alignment. *Note*: This figure presents treatment effects conditional on the respondent's political alignment. The results are based on the model in column 3 of Table E.15. 'Prefer All Pay to Top 50% Pay' takes values from 1 to 5, where 1 indicates a much greater preference for the more redistributive option (i.e., Top 50% Pay) and 5 a much greater preference for the less redistributive option (i.e., All Pay). Political alignment is the respondent's position on the left–right political dimension, based on respondent's self placement on a 0 (left) to 10 (right) scale.

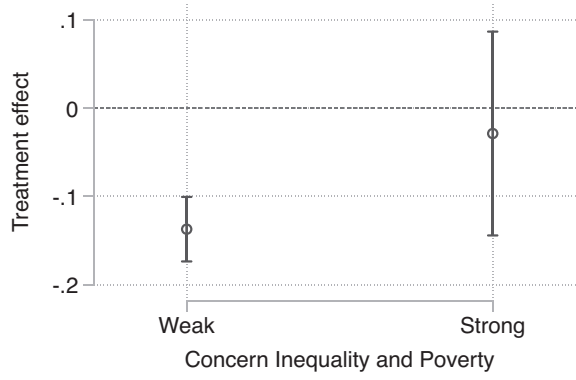

FIGURE 5 Treatment effects by concern about inequality and poverty as problems. *Note*: This figure presents treatment effects conditional on the respondent's concern for inequality and poverty. The results are based on the model in column 3 of Table E.16. 'Prefer All Pay to Top 50% Pay' takes values from 1 to 5, where 1 indicates a much greater preference for the more redistributive option (i.e., Top 50% Pay) and 5 a much greater preference for the less redistributive option (i.e., All Pay). Concern for inequality is an indicator variable that takes the value 1 if the respondent chose inequality and poverty as the most important problems in their country, from a list of 14 potential problems, and 0 otherwise.

Figure 5 compares treatment effects for respondents with strong and weak concern for inequality and poverty. The figure shows that the treatment effect is not statistically significant for respondents who have a strong concern for inequality. In contrast, it is large for those with a small concern, indicating that respondents who are not much concerned with inequality are less likely to choose All Pay over Top 50% Pay when they are informed about the regressive impact of VAT.

8 | CONCLUSIONS AND POLICY IMPLICATIONS

Individuals who incorrectly perceive that a tax is already progressive may be reluctant to make it more progressive. They might doubt the efficacy of greater progressivity or, as in the theoretical example presented earlier and in the evidence presented in Stantcheva (2021), they might believe that further progressive reforms will come at high cost. Consistent with this conjecture, novel evidence

from 12,000 individuals across Latin America shows that when respondents are informed that the VAT is regressive, they are less sceptical about the potential for reform to increase equality and are significantly more supportive of progressive reform.

The treatment effects are largest among those who incorrectly perceive that the VAT is progressive. Those respondents, in turn, are drawn from groups that one might have anticipated are particularly resistant to the information treatment: those whose ideologies and view of the world lead them to assume that the VAT is not regressive and that redistribution is an inappropriate goal for public policy. In fact, treatment effects are stronger among this group.

Survey experiments commonly raise a series of concerns that we show are not likely to spuriously account for the treatment effects we estimate. In the context of the experiment here, one important issue is whether results are driven by respondents whose behaviour violates the GARP. We find, on the contrary, results are strongest when inconsistent respondents are excluded. Results from survey experiments may be distorted by inattention, but our results substantially strengthen when we exclude outliers with respect to time spent on the survey. Our results underline that attention and consistency are separate phenomena that each require attention. Experimenter demand bias is also unlikely as respondents from both treated and control groups are primed to think about inequality and taxes. In addition, there is no reason that individuals who misperceive the current incidence of the tax should be more susceptible to such bias, and yet our results are strongest with this group. Finally, treatment effects are strong in countries in which the incidence of the VAT is similar to the average incidence in the treatment group and in which it is dissimilar. This is reassuring evidence that we are capturing general attitudes towards progressive tax reform rather than a reaction to the specific tax systems in respondent countries.

These results suggest that future research, and reform designs, should consider the combined impact of informing individuals about both the extent of inequality and the current incidence of the specific taxes targeted for reform. This complementarity is intuitive. Individuals who discover that an existing tax is regressive may still not be motivated to make it more progressive if they do not know that inequality is severe. Individuals who know only that inequality is severe may nevertheless be reluctant to support a specific reform if they are unsure that it will solve the problem and not create new problems.

The analysis also has implications for the design of fiscal adjustment strategies. To the extent that countries adopt tax-based strategies to make fiscal adjustments, they can choose to make those adjustments more progressive not only for normative reasons, but also because it can make these adjustments somewhat less unpopular.

Future research is needed, however, to explore the limits of this strategy. Must current tax systems be regressive for individuals to support progressive reforms? Or could information showing positive but small redistributive effects of the current tax system be sufficient to lead individuals to support greater progressivity? A further area for research concerns inattentive and inconsistent voters. A substantial fraction of individuals, approximately 35 per cent, exhibit intransitive policy preferences, and information has essentially no effect on them. More needs to be discovered about these individuals across at least three dimensions: how politically active are they, what incentives do they require to make consistent decisions in response to new information, and how should that information be presented?

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