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Article

Preferences under pressure: financial strain and support for progressive taxation

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Abstract

Americans have not responded to rising income inequality by demanding higher taxes on top incomes. Does this mean that ideological beliefs trump material conditions for explaining voters' views on taxing the rich? We argue that it does not. Though Americans may be insensitive to rising inequality as long as their own finances are stable, we propose that the experience of financial strain changes individuals' views about inequality and makes them more supportive of progressive tax hikes. Using panel survey evidence, we show that financial strain in the form of income loss leads to greater support for raising taxes on high incomes. This is true among both Republicans and Democrats. Financial strain appears to shift respondents' tax preferences by inducing discontent and anger about economic inequality. This suggests that voters' beliefs about the fairness of market outcomes are endogenous to changes in their material circumstances.

Key words: political economy; taxation; preferences; redistribution; inequality.

JEL classification: P16 Capitalist institutions, welfare state; D31 Personal income, wealth, and their distributions; H20 Taxation, subsidies, and revenue

1. Introduction

What drives voters to support taxing high incomes? Several decades of research have shown that popular support for progressive taxation has not significantly changed in response to rising income inequality (Kelly and Enns 2010; Ashok et al. 2015; Kuziemko et al. 2015; Cavaillé 2023). This is true not only in the USA but also across the advanced capitalist world (Lupu and Pontusson 2023). Contrary to the predictions of the social scientists' workhorse political economy model (Meltzer and Richard 1981), gradual changes in the

national income distribution do not appear to affect ordinary voters' attitudes toward progressive tax increases. Many scholars have therefore concluded that voters' attitudes toward inequality and progressive taxation reflect moral or ideological commitments that lead some to see the imposition of higher taxes on top incomes as unfair (e.g. Stantcheva 2021; Trump 2021; Cavaillé 2023; Scheve and Stasavage 2023). In the USA, beliefs about the unfairness of progressive taxation are especially widespread among Republicans (e.g. Ballard-Rosa et al. 2017; Stantcheva 2021), which may partly explain why these voters support candidates who introduce regressive changes in tax policy while in office.

By deriving voters' tax preferences from ostensibly deeply held moral and ideological commitments, this scholarship predicts stability over time in individuals' support for taxing high incomes. This is consistent with the aforementioned finding that voters are unresponsive to changes in the national income distribution. It maybe, however, that there are other ways in which changes in economic conditions affect individuals' views toward inequality and progressive taxation. In this article, we explore the possibility that financial strain at the household level leads individuals to change their minds about progressive tax proposals. We argue that an unequal distribution of income is more likely to strike an individual as unfair if she is struggling to maintain the standard of living to which she had previously become accustomed. This change in attitude toward inequality may, in turn, make a person more favorably inclined toward tax hikes on high incomes. In contrast, a person whose financial resources allow him to comfortably maintain his customary standard of living may be less troubled by inequality and less supportive of inequality-reducing policies such as progressive tax increases.

In what follows, we test this argument in two steps with evidence from the USA. First, we draw on cross-sectional evidence from the International Social Survey Programme (ISSP), which asked American respondents a battery of questions to gauge their beliefs about inequality and public policy in 2020 and 2021 (ISSP Research Group 2022). Our analysis shows that Americans who report experiencing financial strain (i.e. having difficulty making ends meet) are more likely than other demographically similar respondents at the same income level to be dissatisfied with and angry about inequality and to support government action to reduce income differences, including through progressive tax hikes. This remains true when controlling for partisanship.

Given the inferential limits of cross-sectional analyses of this sort, the second part of our analysis uses panel survey data to more credibly assess the relationship between financial strain and support for progressive taxation. The data come from the Voter Study Group (VSG) panel study (Democracy Fund Voter Study Group 2021), which ran between 2011 and 2020. Our findings show that survey respondents who experience a decline in household income between survey waves—a plausible measure of the onset of household financial strain—become more supportive of raising taxes on families earning more than $200,000 a year than they had been before experiencing income loss. We observe this increase in support for progressive tax increases among both Republican and Democratic survey respondents who experience household income loss between survey waves. We show that this result is not a consequence of respondents leaving the affected tax brackets as a result of income loss. While our cross-sectional analysis shows that financial strain correlates with dissatisfaction and anger about inequality and support for progressive taxation, our panel analysis provides evidence for a plausibly causal link between financial strain and support for tax

hikes on high incomes. This result is robust to a range of estimation methods commonly used in the analysis of panel data.

Taken together, our cross-sectional and panel results provide evidence that financial strain induces a significant shift in support for progressive taxation. We observe this progressive shift in tax preferences even among Republicans, who are often thought to ideologically oppose progressive taxation. These findings extend and complement the work of other scholars who have shown that aggregate levels of support for progressive taxation and related policies are shaped by societal shocks, such as wartime mobilization, financial crises, and pandemics (Scheve and Stasavage 2016; Limberg 2019; Limberg 2020; Harrs and Sterba 2023). The results of this article challenge the common view that Americans' policy preferences are determined by dogmatic ideological commitments or party loyalties (e.g. Barber and Pope 2019)—when they suffer significant material setbacks, it appears that Americans are, indeed, capable of rethinking their policy preferences. Most importantly, this article draws attention to one of the material factors that may jointly determine individuals' beliefs about inequality and their tax preferences.

2. Household circumstances and tax preferences

The relationship between household-level economic experiences and policy preferences is a topic of considerable interest in political economy scholarship (e.g. Alesina and Giuliano 2011). The most credible way to study this relationship is through the use of individual-level panel data, which allows researchers to assess whether changes in economic circumstances lead to changes in individuals' political attitudes (e.g. Margalit 2019). Empirical work of this kind has largely been confined to examining the effect of certain kinds of economic experiences on preferences toward certain kinds of public expenditures. The most established finding in this literature is that people who experience unemployment become more supportive of unemployment insurance and closely related policies (Margalit 2013; Owens and Pedulla 2014; Naumann et al. 2016; Marten 2019). This evidence is consistent with the conclusions of scholars who examine the cross-sectional relationship between various forms of economic insecurity and support for social insurance (e.g. Hacker et al. 2013; Marx 2014; Emmenegger, Marx, and Schraff 2015; Rehm 2016). Panel studies like those of Margalit (2013) offer a "most likely" case for an effect of changes in individual-level economic conditions on policy preferences, since the receipt of treatment turns survey respondents into the immediate beneficiaries of the policy in question.

Whether economic experiences affect voters' attitudes toward other kinds of policies is far less clear. This uncertainty is especially present when it comes to tax policy. The dominant trend in recent scholarship is to treat preferences toward the taxation of top incomes as a domain that warrants separate study (Barnes 2015; Cavaillé and Trump 2015; Ballard-Rosa et al. 2017; Limberg 2020; Stantcheva 2021; Alvarado 2024; Hope et al. 2023, 2025; Trump 2024). This is because voters' views about taxation are often thought to be based on a distinctive set of ideological or fairness-based considerations (e.g. Scheve and Stasavage 2016, 2023; Stantcheva 2021; Cavaillé 2023). This implies that some voters may support generous social insurance policies while adhering to the view that it is unfair to "punish" high earners with high marginal tax rates. This may, in part, reflect ignorance: voters may fail to see the connection between top income tax rates and government spending on programs from which they benefit. As Fastenrath and Marx (2025) report on the basis of

extensive focus group evidence from Germany, many voters fail to recognize that "additional tax revenue [from progressive tax increases] could benefit them personally" and rely on "various misleading mental shortcuts" that prevent them from seeing progressive tax increases as "a tool for redistribution that might help them." This evidence is consistent with Bartels's (2016) canonical findings about American voters' apparent inability to grasp the connection between regressive tax cuts and government spending on programs that they support. These cognitive limitations could lead voters to form judgments about tax proposals on the basis of abstract fairness considerations rather than on the basis of reflection about what is best for their own families.

Even in the absence of cognitive limitations, voters may hold the view that the government should be able to provide more of the benefits and services they want without imposing punitive taxes on high earners (Zaller 2003, in Gilens 2012). Some voters may think that this could be achieved by eliminating government waste or by cutting spending on programs they dislike (Williamson 2017). Others may think that increases in government spending should be financed through different kinds of taxes. This reflects the reality that there are many different ways of financing a given level of social provision, not all of which involve a disproportionate burden on the highest earners (Barnes 2015; Beramendi and Rehm 2016; Sumino 2016). By the same token, voters may recognize that there are many different programs on which the revenue from a progressive tax increase could be spent, not all of which they care about or support. Thus, even if a voter supports increased spending on certain social programs, this does not mean that she will support higher taxes on high incomes: the thought that the additional revenue collected from such taxes *might* be spent on programs she cares about may not outweigh ideological or fairness-based considerations that lead her to oppose progressive tax hikes.

These considerations give reason to be skeptical of the connection between household economic difficulties and support for progressive tax increases. Even if individuals experiencing economic difficulties become more supportive of social insurance policies to stabilize household finances, it is not obvious that they will respond by demanding higher taxes on top incomes. The connection between these two policy areas may seem immediate to social scientists, but the main upshot of the aforementioned literature on tax preferences is that this connection is not apparent for a large share of ordinary voters who are accustomed to hearing about specific policies rather than about the academic abstraction of "redistribution." If individuals *do* respond to financial strain at the household level by becoming more supportive of tax hikes on high incomes, this is likely to be because financial strain triggers a change in individuals' views about inequality and about the fairness of disproportionately taxing top incomes. Put differently, if financial strain did not lead to a change in these views, it is unlikely that we would observe increased demand for tax hikes on top incomes *even if* financial strain triggered a demand for more spending on social insurance policies.

3. How financial strain may affect tax preferences

In this article, we develop and test an argument about how the experience of economic difficulties at the household level may, indeed, change people's views about the acceptability of inequality and the fairness of higher taxes on top incomes. We focus on *financial strain*, which is experienced when a household is struggling to maintain the standard of living to

which it had previously become accustomed. Even in two households earning the same income, it may be that only one is experiencing financial strain: one household may have been at the same income level for many years, whereas the other may have recently fallen to that income level, leading to a mismatch between its financial resources and the standard of living to which its members are accustomed.

We argue that the experience of financial strain increases the perceived unfairness of income inequality and makes individuals more supportive of tax hikes on high incomes than they had been previously. The idea is that individuals may be more likely to be unconcerned about the high incomes of the rich when they are able to maintain their conventional standard of living without difficulty. The unequal distribution of income may seem more unfair and more worthy of correction through progressive tax increases once an individual begins to struggle to maintain what she once had. Since perceived unfairness is often accompanied by feelings of aggrievement and anger, individuals who experience financial strain may report being angrier about inequality than others at the same income level who are not experiencing financial strain.

We briefly contrast this prediction against Meltzer and Richard's (1981) canonical model. The MR model predicts that the experience of relative income decline makes individuals more supportive of tax hikes: the median voter will become more supportive of tax hikes as the distance between her income and the mean income grows (i.e. as top-end inequality rises). This can occur while the median voter's income is stable or rising, so long as top incomes are rising more quickly. As discussed in this article's introduction, existing research has clearly shown that rising top-end inequality has not led to an increase in support for progressive taxation in the USA or in other advanced economies. This indicates that the MR model's emphasis on *relative decline* as a determinant of attitudinal change is misplaced. The argument here focuses on the possibly distinctive attitudinal effect of *absolute decline*: that is, a person's inability to maintain the standard of living to which she had previously become accustomed. Our contention is that absolute decline may induce a change in attitudes toward inequality and support for progressive taxation.

Our argument is closely related to the idea that disappointed expectations play an important role in political preference formation (e.g. Kurer and van Staalduinen 2022). We focus on the disappointment of the expectation that one will be able to maintain the standard of living that one had previously maintained. A person's failure to meet this expectation may lead her to conclude that the existing distribution of income is unfair and to support tax hikes on high incomes. This is consistent with experimental findings that show that individuals update their beliefs about income inequality in light of adverse experiences (e.g. Cassar and Klein 2019; Valero 2022; Harrs and Sterba 2023), as well as with Hvidberg et al.'s (2023) finding that individuals' views on inequality shift in response to household shocks. The view developed here is also consistent with Marx's (2020) argument that the experience of pocketbook problems can trigger anger and shape political attitudes. Finally, our argument is compatible with the view that downward mobility spurs a broadly leftward shift in political attitudes (Helgason and Rehm 2023). Financial strain and downward mobility are, however, conceptually distinct in that the latter typically refers to a trend over a lifetime, whereas the former refers to a shorter-term shift in economic circumstances that may or may not be part of a long-term downward trajectory.

Though we expect the experience of financial strain to trigger higher support for tax increases on high incomes, this does not mean that individuals become more supportive of

paying higher taxes themselves. As shown in existing research, many people support higher taxes on top incomes while opposing an increase in their own tax burden (e.g. Barnes 2015; Ballard-Rosa et al. 2017). The experience of economic difficulties may, indeed, make people more upset about their own tax burden and more hostile to tax hikes that affect them directly, as proposed by Jacques and Weisstanner (2022), Jacques (2023), and Weisstanner (2023). Taken on its own, rising discontent with one's own tax burden has indeterminate implications for attitudes toward tax hikes on high incomes. It could make a respondent generically hostile to tax increases, as suggested by Bartels (2016). Alternatively, discontent about one's own tax burden could make one more supportive of an increase in the progressivity of the tax code through tax hikes on high incomes. Our theory predicts that by inducing a shift in individuals' views about the fairness of income differences, financial strain is likely to make individuals more supportive of tax hikes on top earners. This is the focus of the empirical analysis that follows.

Should we expect reactions to financial strain to vary on the basis of individuals' prior beliefs? On the one hand, individuals who are opposed to progressive taxation for ideological or fairness-based reasons might be expected to be resistant to attitudinal change in response to the experience of financial strain. If ideological commitments or fairness views are really freestanding and fundamental determinants of tax preferences, then those who hold these views should stand firm in their opposition to progressive taxation even in the face of an unfavorable shift in their economic circumstances. On the other hand, it is precisely these individuals who are least likely to *already* support progressive taxation. For this reason, these may be the individuals who need the shock of financial strain to push them to support tax hikes on high incomes. This has implications for the relationship between partisanship and responses to financial strain. As is well known, Republicans are more likely to oppose progressive taxation than are other Americans (e.g. Ballard-Rosa et al. 2017). This reflects the fact that many Republicans adhere to an ideology that leads them to see the imposition of higher marginal tax rates on top earners as unfair (e.g. Stantcheva 2021). Republicans' commitment to these beliefs might render their tax preferences unresponsive to the experience of financial strain. That said, Republicans' general opposition to progressive tax increases gives them the most "room to move" in a progressive direction in response to the shock of financial strain. Given these countervailing considerations, we take the relationship between partisanship and responses to financial strain to be theoretically indeterminant.

4. Data and methods

This article's empirical analysis proceeds in two steps. First, we use cross-sectional data to test our predictions about the relationship between financial strain and beliefs about inequality. Second, we use panel data to demonstrate that the onset of financial strain leads to a progressive shift in tax preferences. Both parts of the analysis use data from the USA. Our focus on the USA is warranted on the grounds that the USA has been the focus of much of the canonical scholarship on tax politics in advanced democracies, and because American voters' views on taxation are often thought to be especially ideologically motivated. In this sense, the USA is a least likely setting to observe a significant effect of financial strain on voters' views toward progressive taxation.

The cross-sectional component of our study involves an original analysis of survey data from the ISSP, which measures an array of political beliefs among voters in many countries.

We display analyses of ISSP data from the USA in this article's main text. In Supplementary Appendix P, we include a cross-national analysis including respondents from western Europe and the Antipodes. The ISSP's Social Inequality survey is distinctively valuable for testing this article's argument because it asks respondents to assess their household's financial situation and gauges their beliefs about inequality and progressive taxation. We analyzed data from the ISSP's most recent Social Inequality survey, which reached 1,852 American respondents in 2020 and 2021. Because of incomplete survey responses, our analysis includes approximately 870 respondents. See Supplementary Appendix Table A3 for descriptive statistics of the ISSP data.

To measure financial strain at the household level in our cross-sectional analysis, we use the following question on the ISSP: "Thinking of your household's total income, including all the sources of income of all the members who contribute to it, how difficult or easy is it currently for your household to make ends meet?" Respondents could answer 1–5, from "very difficult" to "very easy." We code answers "very difficult" (1/5) or "fairly difficult" (2/5) as 1 and the other three possible answers as 0, which produces a binary independent variable. This measure of difficulty making ends meet captures the existence of a mismatch between a respondent's customary standard of living and her household income at the time of the survey. This is what we call financial strain (see Section 3). Experiencing financial strain is not the same as earning a low income. Supplementary Appendix R shows the proportion of respondents in each income category who report difficulty making ends meet. We see that, for the most part, only a minority of respondents in the lowest income groups report difficulty making ends meet. Likewise, a considerable share of middle- and higher-income respondents report difficulty making ends meet. In our analysis of the ISSP data, we control for respondents' household income, meaning that we are assessing the relationship between financial strain and political attitudes among respondents with a similar household income.

In our analysis of the ISSP data, we use four dependent variable survey questions that measure different components of Americans' beliefs about the fairness of inequality. Respondents reported their views or their degree of agreement or disagreement (on 1–5 or 1–10 scales) with the following statements and questions: (1) "Differences in income in the United States are too large," (2) "How do you feel when you think about differences in wealth between the rich and the poor in the United States?" (with answers from "Not angry at all" to "Extremely angry"), (3) "It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes," and (4) "Do you think people with high incomes should pay a larger share of their income in taxes than those with low incomes, the same share, or a smaller share?" (with answer options from "Much larger share" to "Much smaller share"). We normalize these scales to measure responses from 0 to 1. Summary statistics for these variables are reported in Supplementary Appendix Table A3.

This article then uses panel data to test our predictions about the effect of income loss on support for progressive tax increases. The primary advantage of panel data is that it tracks the characteristics and preferences of the same individuals across multiple survey waves, allowing researchers to measure change over time in individuals' responses to the same survey questions. This, in turn, enables researchers to assess the attitudinal consequences of occurrences such as income loss that affect some respondents but not others between survey waves. Observational panel data has the additional advantage of allowing us to

study the consequences of shocks like income loss that cannot be experimentally simulated for ethical reasons. In what follows, we use the panel study of the VSG (Democracy Fund Voter Study Group 2021).

The VSG sample includes waves from 2011, 2016, and 2020. 45,000 respondents participated in 2011, of whom 11,168 were invited to participate in 2016. The 2016 VSG wave yielded 8,637 respondents, who were then re-surveyed each year through 2020. Each wave yielded slightly fewer respondents than the prior year, resulting in a 2020 sample of 4,943. The full VSG sample actually includes six waves from 2011 to 2020 that include our variables of interest. We choose to focus on the 2011, 2016, and 2020 waves to avoid treatment heterogeneity and bias arising from irregularly spaced panel waves (e.g. Millimet and McDonough 2017). It is not empirically consistent to study the effect of income losses that occur between waves that are 5 years apart (i.e. 2011–6) alongside income losses that occur between waves just 1 year apart (i.e. 2016–7, 2017–8, etc.). That said, we report a regression in Supplementary Appendix B that includes all six waves that include our dependent variable survey question of interest. This also yields a statistically significant effect of financial strain on progressive tax preferences, albeit with a somewhat smaller coefficient.

The VSG panel is distinctively suitable to our study's needs because it asks survey respondents a question about a targeted tax increase that would clearly increase the progressivity of the income tax code: "Do you favor raising taxes on families with incomes over $200,000?" In 2011, earning more than $200,000 would put a household roughly in the top 5 per cent of the US distribution, but by 2020, a family earning $200,000 would fall around the 10 per cent mark (Congressional Research Service 2021). This question distinguishes the VSG from other American panel studies like the Cooperative Congressional Election Study (CCES) or the General Social Survey (GSS), which do not ask respondents to state their preference on a specific progressive tax proposal.

Respondents could answer "yes" (coded as 1) "no" (0), or "don't know." The answer to this survey question is the dependent variable in our panel analysis. We drop "don't know" responses from the data before executing the main analyses, but Supplementary Appendix K includes analyses that code "don't know" as "no." The results are similar to this article's main analyses. Figures 1 and 2 display the descriptive changes over time in support for a tax increase on family incomes above $200,000, broken down by respondent income groups and partisan ID, respectively. Substantial majorities across income groups have supported higher taxes on families earning above $200,000 over the past decade, as have majorities of Democrats and Independents (but not of Republicans). Overall support is consistent with what we would expect on the basis of existing research (e.g. Page and Seawright 2023).

It would be a problem to perform panel analysis using our estimation strategy if the voters who dropped out of subsequent panel waves were systematically different from those who stayed in, in ways that correlate with their response to the treatment (i.e. income loss). Supplementary Appendix A shows that the demographic composition of each survey wave did not significantly change from the prior wave. Supplementary Appendix Table A2 shows that income loss between 2011 and 2016 does not predict survey nonresponse in 2020.

In our panel analysis, we measure financial strain with a simple measure of whether a respondent's self-reported family income dropped between survey waves. A measure of this sort was not possible in the preceding cross-sectional analysis from the ISSP, since respondents only reported their income at the time of the one-wave survey. That is why we used a
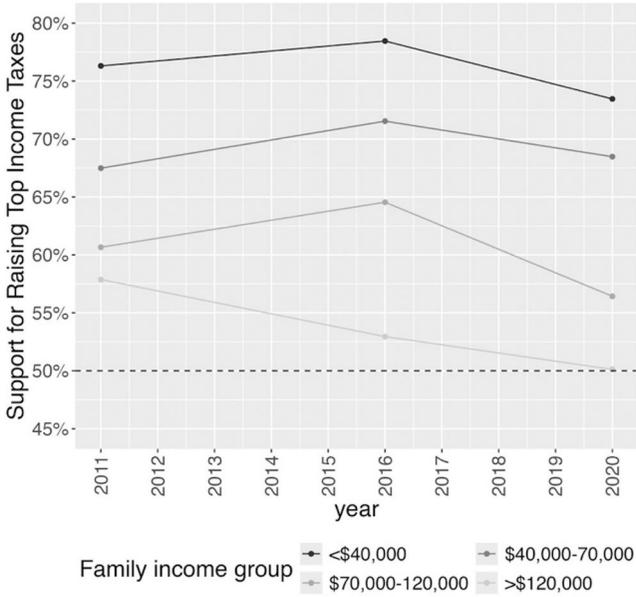
Figure 1. Support for raising taxes on family incomes above $200,000—by income group, over time (VSG).
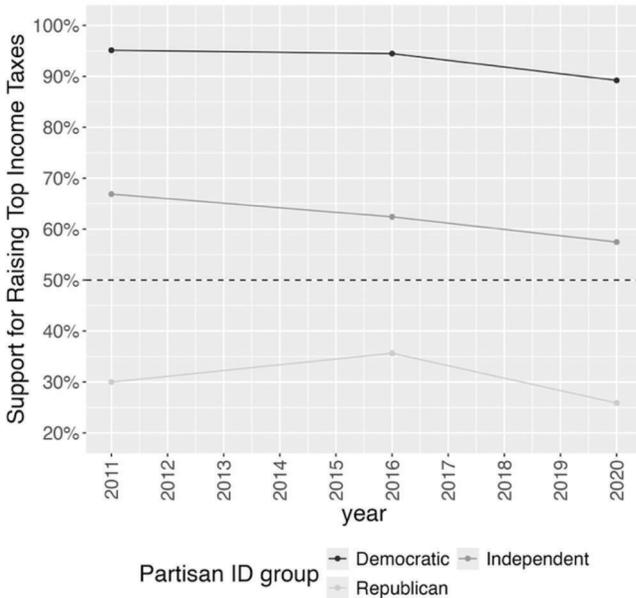

Figure 2. Support raising taxes on family incomes above $200,000—by partisan ID group, over time (VSG).

subjective measure of financial strain for our analysis of the ISSP data. In the VSG panel study, by contrast, respondents reported their household income in each wave of the panel study. This allows us to measure change over time in self-reported household income. The VSG allowed respondents to select family income categories in increments of $10,000 (e.g. "$0–10,000") or, for higher incomes, increments of $20,000 or $50,000. The exhaustive list of family income categories in the VSG is as follows: less than $10,000, $10,000–19,999, $20,000–29,999, $30,000–39,999, $40,000–49,999, $50,000–59,999, $60,000–69,999, $70,000–79,999, $80,000–99,999, $100,000–119,999, $120,000–149,999, $150,000 or greater. We code "income loss" as a drop of at least one income category from one survey wave to the next. Those who experience income loss are coded as 1, while those who do not move income categories from year to year or who enjoy income growth are coded as 0. We analogously code income gain as a separate treatment.

To be sure, this is not the only possible way of measuring income loss. To ensure that our results are not driven by measurement decisions, Supplementary Appendix D shows our main analysis with income changes coded continuously, rather than with the binary variable of income loss that we use in the main text. Supplementary Appendix O shows our main analysis with income change coded as the *share* of prior income lost. Both show significant effects of income loss on tax preferences. Data limitations prevent us from normalizing household income by number of household members, so our measure of income loss per household is measured independently of the size of the household. As an additional robustness check, we adopt a more restrictive coding of the treatment variable that excludes individuals who may have lost income as a result of life events that are sometimes voluntary (retirement, divorce, and having children). The results of this analysis are in Supplementary Appendix F.

It is important to note several possible limitations of measuring financial strain through changes in self-reported nominal household income. Although nominal household income loss entails real income loss (since the USA was not experiencing deflation during the period we study), it is not the only cause of financial strain. Households can experience financial strain even with a stable nominal income if they experience shocks that increase their expenses or if inflation erodes the real value of a stable nominal income. Given the limits of the survey, we cannot measure all of the idiosyncratic household shocks that might impose financial strain by stretching a given nominal income across a greater number of expenses (e.g. medical bills). Inflation is less of a concern for our analysis, despite its substantive importance: since the effect of inflation is approximately the same for every household in the same income category during a given time period, our empirical design effectively controls for the attitudinal effect of inflation by controlling for respondents' prior income and for period fixed effects. By comparing respondents in households that experienced a decline in nominal income against households at the same prior income level, we estimate the effect of nominal income loss among respondents experiencing a similar degree of income losses through inflation.

A further limitation of the measure of financial strain that we use is that the VSG does not allow us to distinguish between pre- and posttax-and-transfer income. It would be preferable to know whether income losses are driven by changes in market income or by changes in the social benefits that a household receives. In principle, these could have different attitudinal effects. That said, it is not easy to define the boundaries of pretransfer income: even in academic scholarship, there is no consensus about whether, say, a public

pension counts as pre- or posttax-and-transfer income (e.g. Blanchet, Chancel, and Gethin 2022). This means that attempts to get respondents to distinguish between pre- and posttax-and-transfer income might introduce problems of its own. More generally, we acknowledge that self-reported family income can be an imprecise measure. We think it reasonable to assume that any measurement error is random and does not bias the binary coding of income loss (i.e. it is unlikely that those who are coded as losing income because of imprecise survey responses are also more likely than all other respondents to undergo a progressive shift in tax preferences). Supplementary Appendix E discusses the possibility of random survey responses. Table 1 shows the share of respondents in each panel wave who experienced income loss.

We employ a standard battery of control variables for our panel analysis. These include partisanship, education, age, race/ethnicity, gender, and prior income level. Partisanship is coded with indicator variables for Republican and Democratic identification (0 or 1); education is coded 0 for less-than-college and 1 for college; age is measured as birth year; race/ethnicity is white or nonwhite; gender is male or female; family income level is measured by the 1–12 scale. Importantly, all of these control variables are measured at the t-1 period to avoid posttreatment bias.

4.1. Panel analysis estimation strategy

In the panel analyses below, we compare the survey responses of individuals at time t to their own responses to the same questions at time t-1. This allows us to test whether those who experience income loss are more likely to change their preferences in a progressive direction from t-1 to t than are those who did not experience income loss.

We follow the literature in employing several panel data estimators to study the determinants of changes in respondents' preferences over time (from t-1 to t). The first is a two-way fixed effects model, which approximates a generalized form of the standard "difference-in-difference" model, employing fixed effects for every unit and every time period. This controls for time-invariant respondent characteristics as well as for differences between survey waves (see, e.g. O'Grady 2019). When employing two-way fixed effects, covariates for time-invariant respondent characteristics are not necessary. In this model, we omit controls for time-variant characteristics because these introduce the risk of posttreatment bias. For instance, a respondent's marital status could change between waves, but this could be caused by income loss.

The second model we use is a lagged dependent variable model for which the outcome variable is simply the respondent's stated preference in period t, using the lagged preference at period t-1 as a control variable (e.g. Margalit 2013). As Angrist and Pischke (2009: 246) write, "You can think of [two-way] fixed effects and lagged dependent variables as bounding the causal effect of interest." This is a good reason to use the two-way fixed effects and lagged dependent variable models in conjunction with one another. We complement these

Table 1. Share of VSG respondents experiencing income loss by wave.

Wave 1	Wave 2	Wave 3
–	21.4%	16.6%

two models with a third estimator: a "first difference" estimator for which the outcome variable is constructed by subtracting the period t-1 preference measure from the period t measure [which we refer to as a "change score," borrowing language from Allison (1990) and Frymer and Grumbach (2021)]. In Section 5, we report estimates using these three models, which take the following forms:

(1) Two-way fixed effects model:

$$P_{i,t} = \beta_0 + \beta_1 L_{i,t} + \beta_2 G_{i,t} + \alpha_i + \lambda_t + \varepsilon_{i,t}$$

(2) Lagged dependent variable model:

$$P_{i,t} = \beta_0 + \beta_1 L_{i,t} + \beta_2 G_{i,t} + \beta_3 P_{i,t-1} + \beta_4 X_{i,t-1} + \lambda_t + \varepsilon_{i,t}$$

(3) First difference (change score) model:

$$P_{i,t} - P_{i,t-1} = \beta_0 + \beta_1 L_{i,t} + \beta_2 G_{i,t} + \beta_3 X_{i,t-1} + \lambda_t + \varepsilon_{i,t}$$

where $P_{i,t}$ indicates the tax preference of individual i at time t, $L_{i,t}$ indicates income loss for individual i in the period leading up to time t, $G_{i,t}$ indicates income gain for individual i in the period leading up to t, $X_{i,t-1}$ is a vector of control variables measured for individual i at time t-1, α_i indicates respondent fixed effects, and λ_t indicates time fixed effects.

In the Supplementary Appendix, we report results from an additional estimator: the weighted fixed effects estimator recently developed by Imai and Kim (2021), which corrects a subtle shortcoming of the standard two-way fixed effects model. The results from this model are substantively similar to the results reported in the main text. The details about the supplementary Imai and Kim specification are given in Supplementary Appendix C. Overall, our use of a wide range of estimators (each of which has idiosyncratic advantages and drawbacks) increases the plausibility of our findings relative to much existing scholarship on attitudinal responses to economic shocks, which often uses a single estimator. On the relative strengths and weaknesses of the estimators we use, see Allison (1990: 105–10), Angrist and Pischke (2009: 243–6), and Imai and Kim (2021).

Identifying the effect of income loss depends on the assumption that potential outcomes are independent of treatment, conditional on covariates. Our ability to control for respondents' attitudes toward the tax policies of interest before they experience income loss (in each of the various ways shown above) significantly ameliorates concerns that the treated respondents differ from their untreated peers in terms of their baseline (pretreatment) support for progressive tax proposals. Supplementary Appendix G shows that the preferences of respondents who experienced income loss were not significantly diverging from the preferences of otherwise similar respondents *before* they experienced income loss. A remaining possibility is that individuals who experience income loss are already more likely to change their tax preferences in a progressive direction between waves. Both income loss and a change in tax preferences could be downstream from another life experience between waves that induces a person to select into a lower-paying occupation and to become more egalitarian. This is unlikely to characterize the experiences of most people who undergo income loss, since people tend to prefer higher to lower incomes. The generally involuntary character of income loss leads us to conclude that those who experience it are unlikely to be

distinctively predisposed to a progressive shift in tax preferences. This is also why we focus on income *loss*. This choice is in keeping with the existing literature on economic shocks (see Margalit 2019), which focuses on adverse events in part because of the greater plausibility that they are exogenous. Income gain is a less plausibly exogenous economic experience because certain individuals may select into higher income categories between waves by switching occupations. Income loss, on the other hand, is generally involuntary. As mentioned above, Supplementary Appendix F includes an analysis in which we exclude from the treatment group individuals who may have lost income as a result of life events that are sometimes voluntary. The results are similar to those in the main text.

To interpret the coefficients on our treatment variable (income loss) as causal estimates, we need to be confident that the observed variation in the outcome variable was not caused by anything other than household economic hardship as measured by household income loss. Of course, involuntary household income loss is itself caused by several forms of misfortune that are difficult if not impossible to exhaustively measure in a survey. For example, household income loss can be driven by job loss, the imposition of reduced work hours, a demotion, the need to take unpaid sick leave, the onset of a disability, or the need to leave the labor market to care for a sick relative. Each of these misfortunes can befall the respondent, the respondent's spouse, or another contributor to the household income (e.g. an adult child). Likewise, household income can decline if the respondent's spouse or another contributor to the household income becomes incarcerated. Using household income loss as the treatment variable captures the general or average effect of household financial strain, irrespective of its particular sources, which are manifold.

Having introduced our data sources and estimation strategy, it is worth noting how our design differs from that of existing scholarship that has addressed related questions. O'Grady (2019) finds that income loss has little effect on tax preferences among Swiss respondents. Our article represents an advance over O'Grady's agenda-setting contribution in several respects. First, we develop a theory linking financial strain to changes in tax preferences through shifting beliefs about the fairness of inequality. We then test the steps in this theory through cross-sectional and panel data. Our panel estimates are more reliable than those of O'Grady because our outcome variable (i.e. tax preferences) clearly specifies the threshold for the proposed tax increase. In O'Grady's study, respondents who experience income loss may oppose tax increases on unspecified "high incomes" because they fear that they will be included within the group targeted for tax hikes. This is likely to yield a downwardly biased estimate of the effect of income loss on support for tax increases on high earners. In our panel study, by contrast, the income threshold for proposed tax hikes is stated explicitly. This allows us to isolate the effect of financial strain on support for progressive tax hikes without interference from the possibly countervailing negative effect of financial strain on tolerance for paying higher taxes oneself (as discussed in Jacques and Weisstanner 2022). By employing a variety of estimators and a range of methods for measuring the independent variable, our study offers the most reliable estimate to date of the effect of income loss on support for progressive tax hikes. Our data also allow us to address questions about the role of partisanship that are not addressed by O'Grady and to speak to the large literature on tax politics in the USA. Given differences between the Swiss and American welfare states, it is unclear whether findings from Switzerland travel to the USA.

Other studies that examine the effect of income loss using panel data from the USA, like Margalit (2013) and Owens and Pedulla (2014), use dependent variables that focus

respondents' attention on policies aimed at helping the poor and/or the unemployed. Our focus is instead on explaining support for progressive tax increases. As discussed in Section 2, there is a growing recognition in existing scholarship that support for taxing the rich does not tightly correlate with assistance for the disadvantaged (especially Cavaillé and Trump 2015; Cavaillé 2023). Studies that focus on policies that help the disadvantaged carry unclear implications for taxation. Perhaps for this reason, they are not typically cited in the literature on tax preferences. This article pivots to study the effect of financial strain on tax preferences while also testing a novel theory about how financial strain increases support for progressive taxation by inducing a change in individuals' views about the acceptability of inequality. Unlike Hvidberg et al. (2023), who use panel data from Denmark to study the effect of household economic shocks on views regarding the fairness of inequality, our panel analysis studies the effect of shocks on support for a concrete progressive tax proposal in the USA. This is an important difference, since it is well known that generally egalitarian sentiments do not necessarily translate into support for progressive tax hikes, as stressed by McCall and Kenworthy (2009) and Bartels (2016). Likewise, given the possibility that household economic difficulties trigger an increased aversion to tax increases (Jacques and Weisstanner 2022), it is important to directly investigate the effect of household financial strain on support for progressive tax hikes. This is what we do in the analysis that follows.

5. Results

The results of our analyses show that the experience of financial strain is indeed related to beliefs about fairness and inequality, and that financial strain in the form of income loss induces higher support for tax increases on high earners. First, our cross-sectional analysis of ISSP data shows that Americans whose households experience financial strain are significantly more likely to feel that inequality is objectionable and worthy of correction through progressive tax increases (Section 5.1). Second, our panel survey analysis of VSG data shows that respondents whose households experience financial strain in the form of income loss become more likely to want to raise taxes on high incomes than they had been previously. This finding holds when using a range of standard panel regression model strategies (Section 5.2).

5.1. Financial strain and beliefs about inequality

In this section, we show that the experience of financial strain is related to beliefs about inequality. Figure 3 reports the coefficients of multivariate OLS regressions analyzing the cross-sectional ISSP data. In addition to financial strain, other independent variables include: income, age, partisan ID, racial/ethnic identification, education, and gender. See Supplementary Appendix N for the regression table. The results show that Americans experiencing household financial strain are statistically significantly more likely to believe that the scale of economic inequality is too big in the USA (row 1), feel angry about economic inequality (row 2), believe that the government should reduce income differences (row 3), and believe that higher-income people should pay a higher share of their income in taxes (row 4). Specifically, respondents experiencing financial strain are between 7 and 10 percentage points more likely to hold those positions, on average, than are otherwise similar respondents who are not experiencing financial strain. Since the opinion gap between lower
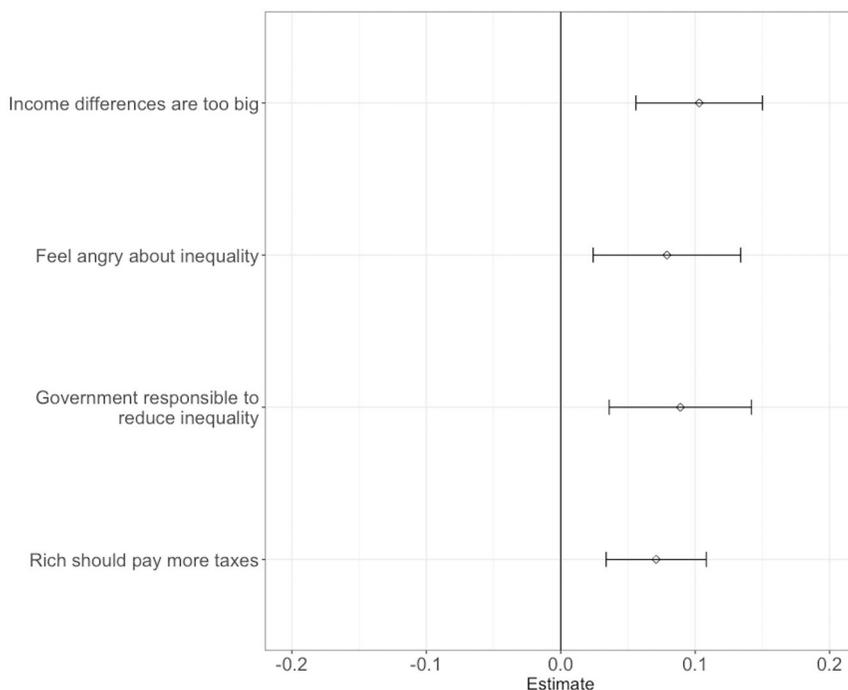
Figure 3. Financial strain and political-economic beliefs with 95% confidence intervals.

Note: These coefficients come from OLS regressions that also include the following control variables: family income (1–10), gender (0/1), racial/ethnic identification (0/1), age (1–7), education (0/1), Democratic ID (0/1), and Republican ID (0/1). The N for each analysis is, in descending order, 891, 769, 889, and 881. See Supplementary Appendix N for the regression table.

(i.e. earning less than $70,000) and higher income respondents is between 1 and 7 percentage points on each of these questions, the coefficients displayed in Fig. 3 are substantively considerable. Supplementary Appendix P includes an analysis with a broader sample of countries that participated in the ISSP; the cross-national results are similar. Supplementary Appendix Q uses a matching technique and yields results similar to those reported in Fig. 3.

5.2. Panel survey analysis

Analyzing the three waves of the VSG, we obtain results that are consistent with the hypothesis that financial strain in the form of household income loss induces individuals to become more supportive of progressive tax proposals.

Table 2 displays the results from the two-way fixed effects models. Results from analysis of the VSG data indicate that experiencing income loss (i.e. moving down one or more income brackets of $10,000–$30,000) induces a 2.5 percentage point increase in the likelihood of supporting tax increases on family incomes above $200,000. Given that low- and high-income groups in the USA disagreed about this policy (between 2011 and 2020) by about 20 percentage points, as shown in Fig. 1, the effect of income loss appears to be considerable but not enormous. This estimate from the VSG is highly significant, with a *P*-value

Table 2. Income loss and support for high-income tax increases, two-way fixed-effects model (VSG).

	Raise taxes
Lost income (t-1 to t)	0.025**
	(0.009)
Gained income (t-1 to t)	−0.009
	(0.008)
Year FE	Yes
Individual FE	Yes
No. obs.	15,689
No. clusters	7,716

**P < 0.01.
*P < 0.05; SEs are robust and clustered by individual.

Table 3. Income loss and support for high-income tax increases lagged DV and change score models (VSG).

	Raise taxes (lagged DV)	Raise taxes (change score)
Lost income (t-1 to t)	0.030**	0.031**
	(0.008)	(0.009)
Gained income (t-1 to t)	−0.026**	−0.019*
	(0.008)	(0.008)
Income (t-1)	−0.005**	−0.002**
	(0.001)	(0.001)
Raise taxes (t-1)	0.659**	
	(0.001)	
Birth year	−0.000	0.000
	(0.000)	(0.000)
Democratic ID (t-1)	0.098**	0.004
	(0.011)	(0.011)
Republican ID (t-1)	−0.096*	0.017
	(0.013)	(0.012)
White (0/1) (t-1)	0.010	0.001
	(0.008)	(0.008)
College (0/1) (t-1)	0.003	0.003
	(0.007)	(0.007)
Female (0/1) (t-1)	0.021**	-0.009
	(0.006)	(0.006)
(Intercept)	0.231**	0.023
	(0.023)	(0.017)
Year FE	Yes	Yes
Num. obs.	7,736	7,736
No. clusters	5,655	5,655

**P < .01.
*P < .05; SEs are robust and clustered by individual.

below .01. In these and all following regressions, we cluster standard errors at the level of the individual respondent.

Table 3 displays the main results from the VSG panel using the lagged DV and change score models. The lagged DV model in Column 1 shows that experiencing income loss induces a 3.0 percentage point increase in the likelihood of supporting tax increases on family incomes above $200,000. The change score model in the second column shows that losing income results in a 3.1 percentage point increase. These estimates' *P*-values are both below .01. We also observe that the effect of gaining income on tax preferences is uncertain and model-dependent. In the two-way fixed effects models, there was no significant correlation between income gain and changes in tax preferences. We see a significant negative coefficient in the lagged DV and change score models with the VSG data.

In this article, we focus on income loss for reasons discussed at the end of the preceding section. As mentioned in the previous section, Supplementary Appendix Tables C1 and C2 present the results of analyses run on the VSG data using weighted fixed effects (Imai and Kim 2021) and random effects models (Bell and Jones 2015), whose results are also significant. Supplementary Appendix D presents models analogous to those shown here with

Table 4. Effects by partisan identification group.

	Raise taxes (lagged DV) among Democrats	Raise taxes (change score) among Democrats	Raise taxes (lagged DV) among Republicans	Raise taxes (change score) among Republicans
Lost income (*t*-1 to *t*)	0.021*	0.025*	0.042*	0.038*
	(0.009)	(0.010)	(0.018)	(0.019)
Gained income (*t*-1 to *t*)	−0.009	−0.006	−0.025	−0.015
	(0.008)	(0.009)	(0.015)	(0.017)
Income (*t*-1)	−0.004**	−0.003**	−0.004**	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Raise taxes (*t*-1)	0.486**		0.670**	
	(0.039)		(0.017)	
Birth year	0.000*	0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)
White (0/1) (t-1)	0.009	−0.001	0.011	0.005
	(0.009)	(0.009)	(0.018)	(0.019)
College (0/1) (*t*-1)	0.006	−0.005	−0.014	0.001
	(0.008)	(0.008)	(0.013)	(0.014)
Female (0/1) (*t*-1)	0.004	−0.001	0.044**	−0.015
	(0.007)	(0.007)	(0.013)	(0.013)
(Intercept)	0.486**	0.005	0.153	0.079
	(0.041)	(0.015)	(0.107)	(0.185)
Year FE	Yes	Yes	Yes	Yes
Num. obs.	3,993	3,993	2,742	2,742
No. clusters	2,950	2,950	2,139	2,139

**P < .01.
*P < .05; SEs are robust and clustered by individual.

income loss and gain coded continuously. Supplementary Appendix O presents models with income loss coded as the *share* of income lost. Supplementary Appendix L reports results without controlling for gained income. All of these results are very similar to those reported in the main text. In Supplementary Appendix I, we examine whether the effect of income loss significantly varies by respondents' prior household income. We find that it does not.

Table 4 reports the results decomposed by partisan group. The results among Democrats (first and second columns) show that income loss induced a 2.1 or 2.5 percentage point increase in support for a progressive tax hike. The third and fourth columns show that income loss induced a 4.2 or 3.8 percentage point increase in support among Republicans. The findings in Table 4 may reflect the fact that the progressive tax preferences of Republicans have more "room to move" than those of Democrats (see Fig. 2). That said, the interaction effect models presented in Supplementary Appendix H indicate that there is no statistically significant partisan difference in responsiveness to income loss. This suggests that Republicans and Democrats respond to the experience of income loss in broadly similar ways. Supplementary Appendix M displays similar analyses among Independents.

The effect of income loss on support for tax increases on high-income households appears to persist for a considerable share of respondents. In the VSG panel survey, 59 per cent of respondents who lost income and adopted a new, more progressive position between 2011 and 2016 retained this new preference in 2020. This suggests considerable but imperfect persistence, a finding consistent with work in behavioral economics that has shown that experiences can exert a long-term influence on attitudes, but that new events can partially overwrite these effects (Malmendier 2021). Margalit (2013) found suggestive evidence that the effect of shocks on policy preferences may be ephemeral, but later work that more directly tests for persistence has shown that the attitudinal effects of economic shocks can be quite persistent over several years (Naumann et al. 2016). In our study, more waves of panel survey data would be necessary to robustly test for persistence.

It is reasonable to wonder whether income loss leads to increased support for progressive tax hikes simply because individuals drop out of the tax brackets that would be affected by the proposed tax hike. In Supplementary Appendix J, we show that income loss exerts a statistically significant and substantively similar effect on support for tax hikes even among respondents whose household income was nowhere near the threshold to be affected by the proposed tax hike before they experienced income loss, indicating that our results are not driven by a threshold effect. Likewise, it is reasonable to ask whether income loss affects tax preferences by leading individuals to downgrade their expectations of future income growth, which could lead to increase in support for progressive taxation (e.g. Rueda and Stegmueller 2019). If this dynamic explains our findings, the effect of income loss should be strongest among respondents whose prior income was close to the threshold for the proposed tax hike. It is these individuals who could most reasonably expect to enter the affected tax bracket in the future and whose expectations may shift in response to income loss. In Supplementary Appendix I, we show that this is not the case: individuals whose prior income was within $50,000–$100,000 of the threshold for the proposed tax hike are not significantly more likely than other respondents to react to income loss with an increase in support for progressive taxation. These tests weigh against alternative explanations of our findings based on threshold effects and future income expectations.

6. Discussion and implications

Existing scholarship has demonstrated that rising top-end inequality has not led to higher mass support for progressive taxation. This article shifts focus toward economic circumstances at the household level, which may play a more important role in shaping individuals' political attitudes than do gradual shifts in the national income distribution (Graetz and Shapiro 2020). Drawing on survey data from the USA, we have shown that respondents in households experiencing financial strain are more likely than otherwise similar respondents to object to inequality, to express anger about income differences, and to support government intervention to reduce inequality, including through progressive tax increases. We then leverage panel survey evidence to show that the experience of financial strain in the form of household income loss makes American respondents significantly more supportive of tax hikes on top earners than they had been previously. This panel evidence lends support to a causal interpretation of the relationship between financial strain and support for progressive taxation.

This article's findings carry significant implications for our understanding of how individuals form tax preferences. The dominant trend in recent research is to attribute tax preferences to ostensibly time-invariant individual characteristics like ideology or underlying beliefs about fairness. This article challenges this literature by demonstrating that material factors do matter for tax preferences, even if trends in national-level inequality do not: we show that individuals' tax preferences are shaped by their economic circumstances at the household level. As we have argued, this does not mean that ideological or fairness beliefs are irrelevant. It is undoubtedly true that when people reason about tax policy, they think in terms of fairness. The question is whether individuals' views about the fairness of inequality (and, consequently, their tax preferences) are endogenous to their material circumstances. This article gives reason to think that they are.

It is important to note the limitations of research on tax politics based on individual preferences. First, mass demand for progressive tax increases has an indirect effect on tax policy, since interest group influence and counter-majoritarian institutions also play an important role (Page and Seawright 2023). Second, in a multidimensional policy space, voters who favor progressive tax increases may cast their votes for political parties that do not share their views on tax policy because they like these parties' stances on other issues (Roemer 1998). This means that widespread popular support for progressive tax increases does not necessarily translate into an electoral mandate for parties that favor tax progressivity, since voters may be put off by these parties' stances on other issues. Third, it must be emphasized that surveys are an imperfect tool for gauging the true level of public support for changes in tax policy, since expressions of support for progressive tax increases on surveys may not reflect firmly held opinions (Fastenrath and Marx 2025). Fourth, individuals' responses to economic difficulties at the household level may be importantly shaped by the rhetoric adopted by competitors in the electoral arena, suggesting that political responses to adverse shifts in economic circumstances may be context-dependent (Marx 2020). Finally, economic difficulties at the household level may reduce political interest and undermine political participation at the same time that they change individuals' policy preferences (Emmenegger, Marx, and Schraff 2015; Marx 2023). Thus, even if respondents become more supportive of progressive tax hikes after experiencing financial strain, this may not translate into political action.

Despite these considerations, it remains important to understand the factors that may lead to shifts in popular support for progressive tax increases. Even though majority support for progressive tax hikes is no guarantee of policy change, it is reasonable to conclude that an increase in popular support for progressive taxation makes progressive policy change more likely. Similarly, even if one doubts that stated support for progressive tax increases on cross-sectional surveys reflects real demand for tax hikes on high earners, one may grant that systematic *changes* in individual respondents' answers between panel survey waves capture a meaningful and politically relevant psychological process. By demonstrating that financial strain induces a change in the way that American voters view progressive taxation, this study provides the strongest evidence to date on the relationship between changes in household economic circumstances and tax preferences. Future scholarship should more fully investigate how economic experiences and contextual factors interact to determine a person's attitudes toward inequality and her support for taxing the rich.

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Supplementary data

Supplementary data is available at *SOCECO Journal* online.

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