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ABSTRACT

A vast theoretical literature in public finance has studied the question of the desirability of capital taxation. Distinct from questions of the optimality of taxing wealth is whether it is politically feasible. We provide, to our knowledge, the first investigation of individuals' preferences over jointly taxing income and wealth, via a survey on Amazon's Mechanical Turk. We provide subjects with a set of hypothetical individuals' incomes and wealth and elicit subjects' preferred (absolute) tax bill for these individuals. Our method allows us to unobtrusively map both income earned and accumulated wealth into desired tax levels. Our regression results yield roughly linear desired tax rates on income of about 14 percent. Respondents' suggested tax rates indicate positive desired wealth taxation. When we distinguish between sources of wealth we find that, in line with recent theoretical arguments, subjects' implied tax rate on wealth is three percent when the source of wealth is inheritance, far higher than the 0.8 percent rate when wealth is from savings. We show these tax rates are consistent with reasonable parameterizations of recent theoretical optimal wealth tax formulae.

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1 Introduction

The question of how to treat capital in an optimal taxation framework is of first-order importance to both theory and policy. Earlier contributions to optimal tax theory, in particular Atkinson and Stiglitz (1976), Judd (1985), and Chamley (1986), argue that tax on capital should be zero, albeit for distinct reasons. More recently, these classic results in optimal taxation have been challenged by, among others, Piketty and Saez (2013), Diamond and Saez (2011), Kopczuk (2013a), Farhi and Werning (2010), Straub and Werning (2014), and Piketty (2014).[1]

These questions of optimality of tax policy are distinct from questions of *political feasibility*, i.e., whether the political economy of tax setting would allow for wealth taxation. Putting aside legal impediments and the practical challenges of implementation, there is the separate issue of whether a wealth tax is even desired by the electorate. And if it is, what are the wealth tax parameters that a responsive legislator would aim to translate into policy? This question is taking on practical significance given recent discussion of wealth taxation among policy-makers: for example, many prominent Democratic Party politicians are endorsing a policy providing "Medicare for All", and proposals to finance this include an increase in the estate tax and, more novel, a new wealth tax beginning at $21 million in net worth.[2]

We provide, to our knowledge, the first investigation into individuals' preferences toward *jointly* taxing wealth and income, via a survey on Amazon's Mechanical Turk (MTurk). Each subject in our study was confronted with scenarios describing an individual's income *and* wealth. For each scenario, the subject then provided the level of taxation he thought was appropriate for the individual to pay. By asking for *absolute* levels of taxation in response to a hypothetical individual's (multi-dimensional, in our case two-dimensional) financial situation, we believe our approach is less likely to lead subjects to use misplaced heuristics (for example, to choose current levels or to confuse marginal and average rates). We also argue that, by asking for desired absolute tax levels rather than rates on income and wealth *per se*, our methodology is unobtrusive—the implied $T(income, wealth)$ function, which we trace out from individual responses, may be a complicated nonlinear function that would be much more costly to elicit, for example, by asking for separate tax rates on a large set of

[1] In assessing the gaps between theory and practice in tax policy Mankiw *et al.* (2009) find that the gap between the optimal policy of 0 and actual tax policy is farthest for capital taxes, suggesting that either the normative theory is underdeveloped or political/administrative constraints are particularly binding.

[2] See `https://www.sanders.senate.gov/download/options-to-finance-medicare-for-all?inline=file`.

income and wealth brackets (at the same time). However, we recognize that our approach is not without problems: as McCaffery and Baron (2006) show, desired income tax rates differ when elicited in absolute versus percentage terms—for large values of a tax base, subjects tend to choose higher taxes when asked to give a percentage as opposed to an absolute tax bill. As such, our methodology is less likely to exhibit *progressive* tax schedules than the more traditional method of asking subjects to give preferred rates. We return to discuss this limitation later in the paper.

Our empirical findings are as follows: First, subjects' tax recommendations over income versus wealth are, roughly speaking, "sensible." Respondents seem to intuitively understand the difference between a stock and a flow and choose implied wealth tax rates that are typically an order of magnitude smaller than those on income. Second, their chosen tax bills imply a linear tax rate on income of approximately 13-15 percent, in line with past work, another sign that our respondents appear roughly representative in their views and to have taken the task seriously.

Third, and of greater interest, subjects' choices imply positive rates of wealth taxation. When we restrict the relationship of the tax bill and wealth to be linear, the implied average tax rate on wealth is about 1.2 percent in our baseline estimate. In follow-up sessions, we tell subjects the *source* of the hypothetical wealth. In one treatment they are told it is from saving past income, while in another treatment they are told it is from a bequest from a deceased relation. Preferred taxes on wealth from savings are 0.8 percent, versus 3.0 percent on wealth from inheritance. For wealth from savings, the point estimates suggest a progressive tax schedule, though we cannot reject linearity at conventional levels of significance. However, as noted earlier our methodology makes it hard to pick up progressive tax preferences, so we find the progressivity in the point estimates to be noteworthy, despite their imprecision.

We complement our analysis of subjects' chosen tax rates with an examination of respondents' open-ended explanations of how they made their decisions. In general, subjects do not mention efficiency concerns (e.g., that higher taxes on wealth would reduce savings or induce capital flight or that higher labor income taxes would discourage work). Simplicity of the tax *schedule* (e.g., a flat tax) is attractive to many. Also, "double taxation" is often noted as an objection to taxing wealth, with respondents saying it was "already taxed" at the time it was earned. These considerations are quite removed from the trade-offs that economists weigh in the classic optimal tax framework.

In the final part of the paper, we interpret our empirical estimates through the lens of recent theoretical work on capital taxation. While empirical work on preferences for — and consequences of — capital taxation is limited, the theoretical literature is vast. While classical theories suggest zero capital taxation, recent models have found non-zero optimal

wealth taxes (see Kopczuk, 2013b for a survey).[3] A recent paper by Saez and Stantcheva (2016b) alters the utility function to include direct preferences over wealth, and yields closed form expressions characterizing the optimal joint wealth and income tax formulae, which we use to calibrate our results in the discussion below.[4] The formulas are general enough to incorporate some of the non-utilitarian normative ideas expressed by our subjects.

While wealth taxes have only recently re-entered the political discourse, they were more commonly discussed in the nineteenth century. Indeed, prior to the 16th Amendment, in a period of similarly high wealth inequality and wealth-income ratios, many U.S. state governments had "general property taxes" where real estate, financial assets, livestock, jewelry and vehicles were all taxed at value. But feasibility issues arose then as well. Economists of the late 19th century decried such taxes as inefficient, given the widespread evasion and avoidance that occurred, and advocated instead for the income tax. With the income tax, state governments gave up taxing personal property, and devolved real estate taxation to the local level (Einhorn (2008)).

Recent policy and public interest in wealth taxation has been stimulated by Piketty (2014), who proposes a one to two percent *net* global wealth tax on wealth above one million euros.[5] The theoretical basis for this recommendation partly derives from Piketty and Saez (2013), who show positive optimal tax rates in a model with both received bequests and stochastic savings rates. They calculate an optimal bequest tax that depends on the percentile of the bequest distribution: the median bequest receiver would prefer an optimal bequest tax of 50 percent.

Interestingly, we find that both the desired wealth tax rates as well as the differential

[3]The classic theoretical argument against capital taxation of Atkinson and Stiglitz (1976) follows from the general logic of indirect versus direct taxation. If leisure is separable from consumption and fully non-linear labor income taxes are available, there is no need to distort intertemporal consumption (or any other type of consumption) at the optimum. The famous Judd (1985) and Chamley (1986) result follows from the infinite horizon nature of the optimal growth model: any permanent wedge between the rate of return on capital and the intertemporal rate of substitution would distort consumption and saving every period, leading in the limit to either 0 or infinite consumption in steady-state. Straub and Werning (2014) show that this result is due to a particular assumption on the intertemporal elasticity of substitution.

[4]Also using Mechanical Turk, Weinzierl (2014) shows that there is support for both "equal sacrifice" as well as utilitarian normative principles among subjects.

[5]"At what rate would [a global wealth tax] be levied? One might imagine a rate of 0 percent for net assets below 1 million euros, 1 percent between 1 and 5 million, and 2 percent above 5 million. Or one might prefer a much more steeply progressive tax on the largest fortunes (for example, a rate of 5 or 10 percent on assets above 1 billion euros). There might also be advantages to having a minimal rate on modest-to-average wealth (for example, 0.1 percent below 200,000 euros and 0.5 percent between 200,000 and 1 million)", Piketty (2014), Chapter 15. Note that he envisions this tax as replacing the property tax, which is a tax on *gross* property wealth.

treatment of saved versus inherited wealth line up closely with the proposed capital taxation of Piketty (2014). Thus, while there may be objections to capital taxation on theoretical grounds or owing to legal or logistical impediments (which we discuss in the conclusion), our findings indicate that there appears to be support among the electorate for such policies.

We view our main contribution as two-fold. First, to the best of our knowledge we are among the first to directly elicit preferences for wealth taxation from prospective voters.[6] While there are no immediate payoff consequences for survey respondents, the sensible estimates we obtain on income taxation suggest that subjects exert effort in providing responses. Following Weinzierl (2014) and Saez and Stantcheva (2016a), incorporating these tax schedules into recent optimal wealth tax formulas allows us to recover the implicit normative weights our respondents have over wealth (rather than just income) holdings.

The credibility of our estimates on desired wealth taxation is bolstered by our novel methodology, which we view as our second contribution. Since we elicit subjects' preferred tax rates through their (absolute) tax choices over a number of hypothetical income/wealth pairs we avoid, for example, leading subjects to gravitate toward responses that reflect current tax rules. Our methodology likely understates desired progressivity (at least relative to the traditional method of eliciting preferred rates), so we suspect that our estimates for implied wealth tax rates serve as lower bounds. With sufficient data, this methodology could be extended across many tax-relevant characteristics (for example, consumption, real estate holdings, and age) to elicit the full tax schedule preferred by respondents. The disadvantage, as we have noted above, is that respondents are typically unaccustomed to thinking in terms of absolute tax bills, and based on past work our methodology will tend to give lower and less progressive rates than when choices are framed as percentages.

The remainder of the paper proceeds as follows. Section 2 outlines our experimental design. Section 3 describes our data collection procedures and provides summary statistics on our resulting sample of subjects. Section 4 describes results from the baseline experiment, in which we do not specify to subjects the source of the wealth values they are asked to consider, and then Section 5 shares results from the surveys that compare responses for wealth accumulated via saving past income versus wealth gained via a bequest. Section 6 uses our results, past estimates of relevant elasticities, and recent models of optimal capital taxation to calculate the implied social welfare weights our subjects' place on individuals

[6]See, for example, McCaffery and Baron (2006), Singhal (2008), and Kuziemko *et al.* (2015) for attempts at quantifying *income* tax preferences. More commonly, researchers have explored the determinants of redistributive preferences using responses to attitudinal questions on whether there should be, for example, more or less equal incomes in society (see, for example, Alesina and Ferrara (2005) and Ashok *et al.* (forthcoming) and citations therein). We discuss how our estimates compare to these in Section 4.

with varying levels of wealth. Section 7 concludes and offers suggestions for future work.

2 Experimental Design

We developed our survey experiment with two main goals in mind. First, we wanted to be as unobtrusive as possible, allowing subjects to consider both income and wealth levels when choosing their desired tax but not asking them explicitly how much they wanted to tax income versus wealth. We worried that asking for specific rates on income and wealth would prime them, perhaps toward submitting the current tax rate on income or, more worrisome in our context, presuming that there *should* be a non-zero rate on wealth. Second, we wanted to gather the most information on individuals' preferred tax schedule with minimal cost to our subjects. Asking for absolute tax bills under varying levels of income and wealth allows us to trace out the implied schedule of tax rates on both bases. We worried that the most obvious alternative—asking subjects to explicitly set the rate and bracket structure—would be tedious for our subjects and difficult to aggregate.

2.1 Experimental Procedures

We recruited and compensated our subjects through Amazon's Mechanical Turk (mTurk) market place, but redirected them to surveys that we built with Qualtrics' online survey software. The experiments were conducted over several waves spread out from November 2014 through December 2015. The full set of dates, along with details on the differences in survey design across waves, are included in Appendix Tables 1 and 2.

In each experiment, subjects were asked how much hypothetical individuals should pay in taxes, based on their income and wealth levels. In the first two survey dates, subjects were provided the following definitions:

> *Wealth* is the total amount of assets an individual owns minus any debt. Examples of assets include money in savings or retirement accounts, stocks, and the value of real estate owned; examples of debt include remaining mortgages, credit card balances, and student loans.
>
> *Income* is the amount of money an individual earns in a year. Examples of income include salary from employment, interest on savings accounts, and stock dividends.

Subjects were then asked to consider a hypothetical individual with a certain amount of income and wealth. These values were randomized within and across subjects (so, subjects

do not all see the same sequence of wealth and income values). Specifically, subjects were confronted with a sequence of ten questions that all had the following form (note that the underlining appears in the original):

> Consider a person who, at the end of 2014, had $X in wealth. His 2014 income was $Y. How much should this person pay in taxes for the year?

Subjects were asked to type in the amount. The field into which they typed was formatted so that only numeric values could be entered. If a subject typed more than three digits, a comma automatically appeared, to help subjects see exactly the amount entered. The comma was not pre-populated, so as to avoid priming subjects that they "should" enter a value of at least a thousand. Subjects answer ten iterations of this question. Interested readers can take the survey themselves at the following link: `https://az1.qualtrics.com/jfe/preview/SV_cOqUTFMhLulW3dP`.

In the surveys we fielded in 2015, subjects were initially randomized into a "savings" and "inheritance" treatment. For those who were randomized into the "inheritance" treatment, questions took the form:

> Consider a person who, at the end of 2014, had $X in wealth, accumulated mostly from inheritance received from a deceased relative. His 2014 income was $Y. How much should this person pay in taxes for the year?

For those who were randomized into the "savings" treatment, questions took the form:

> Consider a person who, at the end of 2014, had $X in wealth, accumulated mostly by saving his past earnings. His 2014 income was $Y. How much should this person pay in taxes for the year?

Subjects answered seven iterations of each of these questions. We collect fewer iterations for each question, because they then went on to answer seven iterations of whichever version they did not initially encounter (i.e., the "reverse experiment," savings questions for those randomized to encounter the inheritance questions first, and vice versa). We selected the wealth levels presented to subjects to be below the estate tax thresholds. In comparing tax preferences on wealth from savings versus inheritance, we focus on the between-subject variation driven by initial randomization, though we also show that results hold using the within-person variation driven by the reverse experiment.

The distributions from which income and wealth values were randomly drawn vary slightly by survey date. In early rounds, wealth values were drawn at random from $50,000,

$100,000, $200,000, $500,000, $1,000,000, and $2,000,000; income values were drawn from $13,000, $27,000, $50,000, $86,000, and $210,000. While the wealth values were chosen in order to capture salient levels of wealth, the income values were chosen to roughly match the tenth, twentieth, fiftieth, seventy-fifth and ninety-fifth percentiles in the U.S. income distribution.

To "fill out" the distribution, in the two November 2015 waves we added two new wealth values, $300,000 and $750,000. Finally, in late November 2015, we "jittered" both the wealth and income values to ensure we were not picking up "round number" effects from, for example, very high tax rates on wealth values of $1,000,000. In this wave, wealth and income figures were generated by (a) drawing a value at random from the same distribution as earlier experiments; (b) adding or subtracting 5 percent (with equal probability) of the parameter value, rounded to the nearest thousand. So, for example, $100,000 would be 'jittered' to either $95,000 or $105,000, and $86,000 would be jittered to $82,000 and $90,000.

Finally, in December of 2015, we sampled from the joint distribution of income and wealth in the 2013 Survey of Consumer Finance (SCF). As such, in this survey, wealth and income were *not* drawn independently, as they were in all the others.

Following the tax scenarios, subjects were asked whether they believe the government should redistribute from the rich to the poor (the wording of this question is taken from the General Social Survey), the importance of luck in life's outcomes, whom they supported in the 2012 presidential election, as well as basic socio-demographic data, such as gender, household income, age and marital status. We also asked respondents if they felt the survey was biased. Finally, we gave respondents the chance to respond to open-ended questions on whether the survey was confusing and also invited them to share, in words, how they made their tax decisions.[7]

Before describing the data, two aspects of our experimental design warrant elaboration. First, in defining income, we use a rough description of *taxable* income under *current* law, which includes some capital income as well as labor income. We suspect that most of our respondents merely thought of "income" as earnings. If anything, including capital income would likely make respondents less likely to choose to tax wealth, though we return to this issue in some detail in Section 4.2. Second, as we only allowed numerical entries, respondents are not able to enter negative values (which, in full disclosure, we had not anticipated when originally designing the survey), implicitly disallowing transfers. However, not a single respondent complained about this restriction in the open-ended responses. There was no mention of the EITC; the only subsidy mentioned, noted by one subject, was for food. The

[7]The exact wording of this question is: "Please describe how you decided on the level of tax payments for the hypothetical individuals in the survey."

one relevant mention of "negative" was a respondent who wrote that: "[o]ne's total wealth should not factor in since people that have negative wealth due to student loan debts etc do not get a credit." Future work may wish to allow for negative taxation, but given the responses of our subjects it appears this constraint was rarely binding.

3 Data

3.1 Data collection procedures

All of our subjects were recruited through MTurk, an online labor market where "requesters" can post *human intelligence tasks* (HITs) to be completed by "workers." At the time our experiments were fielded, MTurk advertised that requesters can "access more than 500,000 workers."[8]

Over the past few years, social scientists have increasingly used MTurk to perform experiments and collect survey data (see Kuziemko *et al.*, 2015 and papers cited therein for a review). We registered as a requester and posted a HIT with the following description: "The survey asks your opinion on a variety of topics. There are no right or wrong answers." We tried to use a neutral description that would limit selection bias while also giving workers an honest description of the task. As we are interested in respondents' *preferences*, we also emphasized that there were "no right or wrong answers" to limit to the extent possible social-desirability bias. Compensation was set to \$1, which approximated minimum wage assuming that subjects took eight minutes to complete the task. Actual median completion time was indeed eight minutes, implying an hourly wage of \$7.50. Though we cannot find official data on average wages on MTurk, reading through worker forums suggests that we are paying a very generous wage (and indeed when we post a request for 300 survey takers, the full sample is typically gathered within an hour).

Each MTurk worker logs in with unique ID. Because we collected data across multiple dates, we drop any worker who has taken a previous survey with the same ID, to ensure that we gather a fresh set of participants each time (though we will show that our estimated tax preferences change little when we do not drop repeat-takers from the sample).[9]

Another issue that arises on MTurk is the possibility of 'robots,' algorithms that masquer-

[8]Based on viewing the mTurk website on January 18, 2016.

[9]If workers maintain multiple mTurk IDs then some individuals remaining in our main sample may have participated in a previous session. Outside of surveys (which appear to make up a very small fraction of all tasks), in which case requesters may want unique workers, there is little incentive for workers to create multiple IDs. It is not possible to rule out the possibility that some workers may have done so, however, and thus could have passed through our screening process.

ade as humans. To address this concern we begin each survey with a "captcha" (non-standard writing difficult for computers to interpret), followed by a series of animal sketches (hand-drawn by one of the authors) that subjects needed to identify before starting the experiment, in case robots have been trained to read captchas.[10]

To limit heterogeneity of the sample, we collect all data on workdays during daylight hours on the East Coast of the United States. Given our focus on American tax policy, we limited the survey's availability to those with U.S. billing addresses; we also asked respondents to confirm their residency in the United States. To further ensure the attentiveness of our subjects, we limit respondents to those with positive ratings from at least 90 percent of past requesters.

The data pass basic reality checks (for example, subjects that report having supported Mitt Romney in 2012 tend to be white and male, mirroring patterns observed in polling data). Almost all respondents went on to answer open-ended "feedback" questions, providing answers in colloquial, American English. In particular, we asked whether any part of the survey had been confusing, and the vast majority wrote that no part had been unclear to them.

3.2 Data sample and randomization check

Table 1 provides detail on the MTurk workers who completed our survey (pooling across all survey rounds), comparing them to the (weighted) population of adults sampled in the 2014 General Social Survey (GSS), which is representative of the U.S. adult population. Consistent with past work using MTurk, we find that younger, male, and college-educated subjects are over-represented in our sample.

Importantly, however, the political and redistributive views of our sample match those in the GSS very closely. In both samples, just under two-thirds of respondents supported Barack Obama in the 2012 election (included in this share for both our sample and the GSS are those who did not vote but nonetheless report having supported Obama over Romney at the time). To gauge redistributive preferences, we asked our MTurk sample a question taken verbatim from the GSS:

> Some people think that the government in Washington ought to reduce the income differences between the rich and the poor, perhaps by raising the taxes of wealthy families or by giving income assistance to the poor. Others think that the government should not concern itself with reducing this income difference

[10]Examples of "captchas" can be found here: `http://www.fileflash.com/graphics/screens/Captcha_Creator_PHP_Script-69.gif`.

> between the rich and the poor. Here is a card with a scale from 1 to 7. Think of a score of 1 as meaning that the government ought to reduce the income differences between rich and poor, and a score of 7 meaning that the government should not concern itself with reducing income differences. What score between 1 and 7 comes closest to the way you feel?

In both samples, we flip this question so that it is increasing in the redistributive position. The average responses in our sample and in the GSS are nearly identical, with values of 4.3 and 4.2 respectively (on the slightly more redistributive side of the neutral answer of 4.0). Roughly a third of our respondents say that "luck and help from others" is more important than hard work in determining success.[11]

In general, the redistribution question and 2016 election question left us encouraged by how representative our sample appears to be in terms of political ideology. Additionally, we will show that our results are robust to weighting along the dimensions in which our sample and the GSS sample differ the most: gender, age and attainment of a college degree.

Table 1 also shows the average wealth and income values that our subjects are asked to consider in the tax scenarios. The average income value our respondents evaluate is roughly $83,000 and the average wealth value is roughly $624,000 (thought the median is only $44,000, as both our sample and the actual wealth distribution is extremely right-skewed). The average income and wealth values are comparable to average family income ($87,200) and net wealth ($534,600) in 2013, though our survey question was vague on whether the income and wealth of the hypothetical individual was personal or household.[12]

In the Appendix, we show that our randomization rendered treatment status uncorrelated with subjects' observable characteristics. Appendix Tables 3 and 4 show that in our baseline surveys (in which the source of wealth is unspecified), the demographic and other characteristics of our subjects have no ability to predict the levels of income and wealth they evaluated. Appendix Table 5 and Appendix Table 6 show that this experimental balance also holds in the surveys in which wealth sources are specified. Finally, Appendix Table 7 shows that subjects randomized to see the savings questions first appear no different on observables than those who initially saw inheritance questions.

[11] While we took this question from the GSS as well, we inadvertently did not include a "both" option as the GSS did, so we cannot make a direct comparison.

[12] Statistics on U.S. averages can be found here: `http://www.federalreserve.gov/pubs/bulletin/2014/pdf/scf14.pdf`.

4 Baseline results when the source of wealth is not specified

We begin with an analysis of preferred tax schedules using the surveys in which the source of the hypothetical individuals' wealth was unspecified. These results will serve as a baseline for examining how preferred tax rates are affected by the source of wealth.

In our initial specification we assume that the tax-income and tax-wealth relationships are linear in levels. That is, we estimate

$$Tax_{ij} = \beta^W Wealth_{ij} + \beta^I Income_{ij} + \gamma X_{ij} + e_{ij},$$

where i indexes the subject and j the question order, Tax_{ij} is the chosen tax bill, $Wealth_{ij}$ is the wealth level subject i encounters in question j, $Income_{ij}$ is the income level subject i considers in question j, and X_{ij} are additional covariates that vary to probe robustness. The coefficients on the wealth and income levels will be the implied linear tax rates on these two tax bases.

4.1 Graphical evidence

Before estimating the regression equation above, we show the relationship between the preferred total tax bill and hypothetical income and wealth values graphically. Figure 1 depicts vintiles of the chosen tax bills as a function of vintiles of the wealth values. We residualize these values by survey date and income value and then add back in the means of the tax bill and the hypothetical wealth values. We fit a quadratic line through the scatter plot to allow the data to display non-linear relationships. In fact, the graph shows that the relationship between chosen tax bill and wealth levels is similar throughout the wealth distribution. Note that the fitted line does not hit (0,0), nor would we expect it to do so. As $T = T(income, wealth)$, for low values of $wealth$ the average income is still considerable (around \$100,000) and thus not surprisingly respondents on average choose non-zero tax bills in such scenarios.

Figure 2 performs the same analysis for the hypothetical income values, this time absorbing the wealth values. The relationship is again quite linear, with a steeper slope, consistent with a higher rate on flows than stocks. The intercept on this graph is notably lower than that in Figure 1. As we will see in the regression analysis, respondents put far greater weight on income than on wealth in determining the total annual tax bill, and thus for individuals with very low income, respondents indeed choose very low tax bills, so the implied intercept is much closer to zero.

4.2 Regression results

Col. (1) of Table 2 shows results from the tax regression specified at the beginning of this section, including only survey date fixed effects as controls. Subjects choose tax bills that yield a 1.2 percent linear tax on wealth and a 15.8 tax on income. This result is precisely estimated and essentially unchanged when we include fixed effects for each of the ten rounds the subject completes and subject-specific fixed effects (cols. 2 and 3, respectively).

Given that our focus is on preferences over wealth taxation, in col. (4) we absorb fixed effects for each of the income values that subjects encounter, essentially treating income as a nuisance variable. Since wealth and income values are chosen independently, it is largely unsurprising that controlling more flexibly for income has no effect on the wealth coefficient. In col. (5), we drop subjects who completed the survey in less than four minutes (the fifth percentile of survey duration); in col. (6) we drop answers that give a tax bill of zero. Neither of these sample restrictions affect the coefficient of interest.

A common worry in repeated survey experiments is anchoring bias: in later rounds, respondents may be unconsciously influenced by responses given in early rounds.[13] A simple version of anchoring bias (anchoring, in levels, to the first-round response) would drive our coefficients of interest toward zero, as it makes respondents less responsive to the wealth and income values in subsequent vignettes.[14] In col. (7) we simply use the very first observation from each respondent. While the coefficient is somewhat smaller (0.074) it is statistically indistinguishable from our estimate derived from the larger sample. In fact, when we include the first (*income*, *wealth*) pair as an explanatory variable in a regression using data from the subsequent nine questions, coefficients on these variables are small and insignificant (results available upon request).

In col. (8) we use the GSS to generate weights that correct for our under-representation of women and individual over age 30 and over-representation of those with a college education (i.e., we weight observations in our sample so that the proportions in the eight cells defined by these three binary variables are the same as in the GSS). In fact, weighting makes almost no difference to the coefficient of interest. As weighting makes little difference, in the remainder of the paper we present unweighted results only.

Finally, as we noted earlier, our definition of income was essentially taxable income under current law, meaning it includes some capital income. While we felt that using the current

[13] See Green *et al.* (1998) for evidence of anchoring bias in respondents' valuation of policy (in their case environmental protection) and Beggs and Graddy (2009) for evidence of anchoring bias even in high-stakes settings (art auctions).

[14] Of course, one could imagine more complicated versions of anchoring bias—e.g., anchoring to the *rate* chosen in the first round, which might over or under-state the preferred rate if individual's true (non-anchored) preferred rates are non-linear.

definition of taxable income would be the most natural baseline from which to measure whether individuals had, in addition, a preference to tax wealth, one might worry that a careful reader would note that wealth is being implicitly taxed twice, first as wealth and then as capital income. While not a single respondent in the baseline survey voiced this concern—either in their open-ended response explaining how they made their choices or in any open-ended response where we invited them to describe any confusing aspect of the survey—we nonetheless try to gauge the potential size of any bias. Col. (9) replaces the income measure with a measure of imputed labor income, which subtracts $0.05 \times Wealth_i$ from income (we set negative values to 0). This procedure results in coefficients on the wealth variable that are larger, as the labor income variable is negatively correlated with wealth.[15]

4.3 Reliability of survey answers

There are inherent challenges in interpreting hypothetical survey results; our experiment is no exception. We ask unfamiliar and potentially challenging questions to subjects who have no direct monetary incentive to exert cognitive effort. Some respondents may have low levels of numeracy. Given that the U.S. does not have, strictly speaking, a wealth tax, respondents may have been especially unfamiliar with the concepts we seek to study (though they should have some familiarity with the property tax). While we do not believe we can ever fully dispel these worries, we provide some evidence that respondents in fact understood our questions and took the survey seriously.

First, we find very few "reversals" in our data. For any pair of scenarios in which the income and wealth levels are *both* higher in one scenario than in the other, we define a "reversal" as an occasion where the subject chooses a larger tax bill in the scenario in which the hypothetical individual is strictly poorer. For the ten scenarios each subject confronts, there are $\binom{10}{2} = 45$ pairs, though not all will be comparable (e.g., within a pair, one could have a higher income level but a lower wealth level than the other). On average, our subjects confront 15 comparable pairs, ranging from zero to 35. We find that fewer than five percent of comparable pairs indicate "reversals" of the form described above. Not surprisingly, we find that reversals are more common among those who finish the survey in an unrealistically short amount of time.

While the small number of reversals suggest that the respondents understood the questions, we also directly asked subjects at the survey's conclusion to tell us if any part of it

[15]This follows from the partitioned regression formula, where $\beta^W = \frac{Cov(W,Tax) - \beta^{LI} Cov(LI,W)}{Var(W)}$, and we expect β^{LI}, the coefficient on labor income, to be > 0, as $Cov(LI, W) < 0$, so the β^W from this specification will be greater than $\frac{Cov(W,Tax)}{Var(W)}$, the estimate when income and wealth are drawn independently.

was confusing. While almost all respondents answer this question (usually with some variant of "no," "nope") less than four percent tell us they felt confused at any point.[16]

Third, social-desirability bias (see, e.g., Bernardi, 2006, Dalton and Ortegren, 2011) is a concern in our context, though some work suggests that web-based surveys may be less prone to it than tradition in-person interviews (Kreuter *et al.*, 2008). We did our best to remind readers that *any* answer they gave was valid by stressing in the introduction to the task that it was an *opinion* survey with no "right or wrong answers." Nonetheless, we might still worry that respondents attempt to provide the responses that they perceive the conductors of the survey to want. For this reason, at the end of our survey, we ask respondents whether they perceived it to be biased in any manner. The vast majority (85 percent) indicate that they perceived no bias, eleven percent a left-wing bias, four percent a right-wing bias, and less than one percent a bias of some other type.

Finally, respondents' open-ended answers to how they chose their preferred tax bills suggests they took the task seriously. After all decisions were made and demographic questions posed, we asked respondents to explain in words their general thinking when choosing the hypothetical tax bills. More than 99 percent of respondents wrote at least something in response to this question, which we take to be a testament to the care they seemed to devote to our survey. Moreover, answers were written in colloquial English, indicating that our attempts to screen out non-American residents were largely successful. We discuss the actual responses in the next subsection.

4.4 Discussion of results

Are the coefficients that we estimate based on respondents' answers "reasonable" in a public-finance sense? To the extent that our methodology unobtrusively tests individuals' general understanding of the difference between income and wealth (that wealth, a stock, would quickly disappear if taxed at the same rate as income, a flow), these results are encouraging. The tax rate on income is more than an order of magnitude larger than that on wealth. While our question abstracts from federal versus state tax ("how much should this person pay in taxes?"), 15.8 percent is in fact very close to the average federal plus state income tax rate in the U.S. in 2011 (the actual value is 14.5 percent).[17]

[16]We include in this number those who describe not so much being confused but just challenged by the task ("just the estimating of taxes—a calculation chart would be helpful") and who had temporary problems with the interface (" the first question i couldn't type in a number," or "they way you had to enter the money amounts. it took me a few questions just to figure that out").

[17]The most recent year available is 2011. See `http://users.nber.org/~taxsim/allyup/ally.html`.

Since we are, to our knowledge, the first to estimate wealth tax preferences, we cannot compare our wealth tax estimates to past work. We can, however, compare our implied preferred average income tax rates to prior estimates. The most directly comparable paper is McCaffery and Baron (2006), who estimate income tax preference by asking subjects to give an absolute tax bill (as we do) for different values of income. They find that the implied preferred average rate is 16.8 percent on those making $200,000 and 11.7 percent on those making $50,000, so our point estimate falls in between these values. As we noted earlier, they find that preferred average tax rates are substantially higher when rates (rather than absolute amounts) are directly solicited. Their subjects' give a preferred average rate of 24.6 percent on those making $200,000 and 13.0 percent for those making $50,000. Other recent work on income tax preferences tend to ask for preferred *rates* directly and also focus on top earners. These estimates are thus unsurprisingly higher than what we find (e.g., Kuziemko *et al.* (2015) and Charité *et al.* (2015) find that subjects choose average tax rates of around thirty percent on, respectively, those in the top one percent and those making $250,000 a year).

Finally, to gain a better understanding of respondents' tax preferences, we analyze their answers to the open-ended question: "Please describe how you decided on the level of tax payments for the hypothetical individuals in the survey." In Table 3 we report the most common two-word (bigram) and three-word (trigram) phrases that appear in these open-ended responses.[18] Simplicity, in the sense of a single bracket, appears attractive to many respondents, with "flat tax" and "everyone pay 10 [percent]" appearing frequently. We also note that efficiency concerns (that high taxes would make individuals work or save less) are rarely voiced, a point we return to later.

In summary, we take away from our baseline results that our elicitation procedure produces reasonable differences between preferred levels of income and wealth taxation (with the preferred rate on wealth being much lower than the preferred rate on income, and the preferred rate on income matching well with past work). In the next section we focus on how preferred taxes differ when subjects are told that wealth comes from savings versus bequests.

5 Results when the source of wealth is specified

We now turn to data from surveys in which we specify the source of the hypothetical individual's wealth. Before describing these results, we note that the data pass the same "qual-

[18] We use the "tm" package in R to process the text of the responses to this question. We convert all text to lowercase, strip punctuation and common English stopwords, and stem words with a Porter stemmer. We then take all 2-word (bigram) and 3-word (trigram) sequences in the remaining text, and calculate frequencies across subject responses.

ity checks" as the baseline data. We find that only five percent of comparable pairs of $(income, wealth)$ values lead to reversals (in the sense that a subject chooses a lower tax bill in a scenario A versus B when the individual is strictly richer in A). A somewhat higher share, eight percent, tell us that they were confused at some point in the survey, though the increase relative to the baseline survey is driven by a handful of respondents who appeared to have trouble with the interface. Similar to the baseline surveys, 83 percent of respondents felt the surveys were unbiased, with eleven, five and one percent indicating they perceived bias in the left-wing, right-wing, or "other" direction, respectively. Over 98 of respondents go on to explain in the open-ended question how they made their decisions.

5.1 Assuming a linear functional form

The results in the previous section showed that our estimated wealth coefficients were robust to a variety of specification checks. For brevity, we will present a more limited set of specifications in this section. Our preferred specification, which we present first, controls for question order and subject fixed effects (as in, for example, col. 3 of Table 2). Col. (1) of Table 4 is identical to col. (3) of Table 2 except that we include only observations for which (a) wealth is specified as coming from savings *and* (b) the subject was randomized into seeing the savings questions first (that is, we do not use the reverse experiment).

The coefficient on income in col. (1) in Table 4 is slightly smaller than that in col. (3) of Table 2, 13.2 versus 15.7 percent. Of greater interest, the coefficient on wealth in Table 4 is over a third smaller than its analogue in Table 2: 0.766 versus 1.17 percent. Subjects in these surveys appear to reward wealth from savings with a lower implied tax rate relative to surveys in which the source of wealth is unspecified. Col. (2) is identical to col. (1) except that income is treated as a nuisance variable and fully absorbed; results remain unchanged.

The next two columns perform the parallel analysis for observations in which wealth was specified as coming from inheritance (and in which subjects were randomized to see these questions first). The coefficients on income are nearly identical to the wealth-from-savings observations. However, the coefficient on wealth is over four times larger, at just over 3.0 percent. Interestingly, the implied tax from wealth when the source of wealth was left unspecified (roughly 1.1 percent, as in Table 2) falls between that on savings and that on inheritance. While few respondents spelled out their assumptions on the source of wealth in the baseline survey, of the five that did, four mention they assume it came from savings of past earnings.[19] As such, it is not surprising that the results on generic wealth are closer to

[19]For example, one person in the open-ended answers to the baseline surveys wrote: "After the first one, I set it at 10% of income, regardless of wealth, because the wealth should have been taxed in the year it was earned." Another wrote: "People should only be taxed in [*sic*] annual income.

those from savings.

The final columns test whether the large differences in preferred tax rates on wealth from savings versus inheritance can be detected within-person as well, using the reverse experiment and comparing, within person, whether subjects choose higher taxes when they encounter the wealth-from-inheritance. The differences are still significant and in the expected direction, but smaller than those implied by the between-subject identification of this difference. For example, the first four columns imply a difference of about 2.2 percentage points (3.03−0.77), whereas the difference identified within-person is only 1.3 percentage points.

In fact, the smaller within-person results seem to suggest some anchoring bias on the first set of questions that the respondent encounters. While (as shown in Table 4) respondents choose a tax on savings of 0.76 percent when they encounter these questions first, this figure rises to 1.3 percent when they encounter them *after* the inheritance questions, consistent with subjects' being primed to respond with relatively larger tax bills (see Appendix Table 8). Similarly, while respondents who see the inheritance questions first choose to tax wealth from inheritance at three percent, those who first view the savings questions choose to then tax wealth from inheritance at 1.7 percent. Nonetheless, even those who are "anchored" to give a lower inheritance tax (because they see the savings questions first) give higher inheritance questions than those who are anchored to give a higher savings tax (because they see the inheritance questions first). This type of anchoring bias makes us prefer the between-person estimates, which we focus on for the rest of the paper.

In summary, we find a robust, average difference in respondents' willingness to tax wealth from bequests versus wealth from their own past savings. On the one hand, this result is not surprising, given the large literature from lab experiments showing that subjects acting as social planners are more willing to redistribute endowments gained via luck versus those gained through effort or skill (see, e.g., Cherry *et al.* (2002) and Oxoby and Spraggon (2008)). On the other hand, it is surprising given survey evidence showing that large majorities of Americans are opposed to the estate tax. Consistent with past surveys, a recent Gallup poll showed that 54 percent of Americans favor eliminating the estate tax, relative to 19 percent who oppose its elimination.[20] Whereas we do not use the term estate tax, our results in fact imply robust support for taxes on inheritance. In that sense, it echoes results in Kuziemko *et al.* (2015) that Americans' views on an inheritance tax may be sensitive to framing and information.

They've already been taxed once on the money they earned in the past."

[20]See `http://www.gallup.com/poll/190067/americans-react-presidential-candidates-tax-proposals.aspx`.

5.2 Exploring non-linear functional form

Figures 3 and 4 show the shape of the implied tax schedule over wealth separately for the savings and inheritance scenarios (we relegate the analogous figures for income to Appendix Figures 1 and 2.) Again, we fit quadratic lines to see whether the data imply a linear or non-linear relationship. The solid gray line is the fitted quadratic line for the full distribution of wealth values and appears linear. Cognizant that our methodology understates progressivity for large values of the tax base (relative to asking for tax preference as rates), we also estimate fitted lines in which we exclude wealth values above $2 million (long dashed line) and $1.75 million (short dashed line). For these truncated distributions, some evidence of progressivity emerges.

For the wealth-from-inheritance data depicted in Figure 4, the tax bill appears very well explained as a linear function throughout the wealth distribution. Our respondents appear willing to tax even modest amounts of inherited wealth at the same rate they would tax, say, $2,000,000 in inherited wealth.

In Table 5, we explore whether the progressivity depicted in Figure 3 (over wealth from savings) can be distinguished from linearity at conventional levels of significance. While in no case can we reject linearity (either when we specify progressivity as a quadratic function of wealth or as a spline function of wealth), we find the point estimates to be suggestive.[21] First, our method is known to understate progressivity relative to asking for preferred rates, so even positive point estimates implying some degree of progressivity may be noteworthy.[22] Second, once we drop the very largest levels of wealth, we get an implied tax schedule of around zero for wealth under $500,000 and 1.5 percent for wealth above that value. This schedule is close to that proposed by Piketty (2014).

Finally, we explore whether individuals consider the interaction between wealth and income when setting the total tax bill. Table 7 displays results for three samples, based on how the source of wealth was presented to respondents: the generic baseline sample, the wealth-from-savings sample, and the wealth-from-inheritance sample. In the first column for each of the three samples, we include the interaction between income and wealth (scaled by 100 million for readability), as well as the main effects of income and wealth. While the coefficients do not lend themselves to straightforward interpretation, in no case do any point estimates approach statistical significance and in fact they even vary in sign. As another indication that subjects view the interaction as unimportant, the coefficients on the main

[21] The data suggest a break point of roughly $500,000 in a spline specification, so we use this value as the "knot" of our spline specification.

[22] The result that asking about taxes in levels understates progressivity relative to asking it in rates is also found in Reimers (2009).

effects of wealth and income are identical to their original values (i.e., col. 3 of Table 2 and cols. 1 and 3 of Table 4).

We may further ask whether respondents' views on taxing the hypothetical individual's wealth differ if the individual's *income* is modest. To that end, in the even-numbers columns, we interact wealth with a dummy variable denoting whether the hypothetical individual's income is below $50,000. While the point estimates are negative in all cases (as one would expect), they are small and insignificant, with all p-values greater than 0.45. Again, the coefficient on the wealth main effect is essentially unaffected across all specifications.

We find these results to be somewhat surprising, as standard models in which only consumption enters the utility function would imply that wealth is merely a source of capital income, and is substitutable for labor income in generating consumption. In such cases, a social planner would generally impose a low tax rate on individuals with limited income, regardless of wealth holdings, whereas our subjects continue to impose significant wealth taxes on these individuals. We return to this point in Section 6.

5.3 Heterogeneity in tax preferences

How do demographic and political characteristics mediate the relationship between preferred taxation over wealth levels, and, further, is any difference mediated by whether wealth is gained via savings or inheritance? We explore these questions using the following regression specification:

$$Tax_{isj} = \beta Wealth_j \times Inheritance_s \times X_i + \lambda_{ijs} + e_{isj},$$

where Tax_{isj} is subject i's preferred tax on the wealth observed in question j when the source of the wealth is $s \in \{inheritance, savings\}$; $Wealth$ is the amount of wealth being considered in question j, $Inheritance_s$ is a dummy variable denoting whether the source of wealth is from inheritance; X_i is a given set of individual characteristics; and λ_{isj} is a vector of all lower-order terms of the triple interaction term. As usual, we only use observations that come from the first set of questions each subject encounters.

The results are displayed in Table 6 for individual characteristics related to political views. In col. (1) we see that non-Obama supporters want to tax inherited wealth significantly more than saved wealth, but this tendency is in fact significantly more pronounced for Obama supporters. Otherwise, Obama supporters appear similar to other subjects. Similarly, belief that the government should redistribute income and wealth is associated with higher preferred wealth tax rates *and* a preference for taxing inherited wealth more than other types of wealth.

In the final column, we include interactions with a dummy variable indicating that the respondent feels luck is more important than effort in determining success. The triple interaction is small and insignificant in this specification, perhaps consistent with these respondents believing that luck also determines *past savings* as well, as would be the case with uninsurable and idiosyncratic rates of return to past savings or luck being integral in determining past income flows.

Finally, we find no mediating effect for gender, age, own household income, race or parenthood (see Appendix Table 9).

5.4 Discussion

Table 8 displays the most common bigrams and trigrams in the open-ended answers in the surveys that specify the source of wealth. Interestingly, phrases (e.g., "alreadi tax," "alreadi paid tax") often suggest an aversion to "double taxation," which did not emerge as a key concern in the baseline survey. It appears that specifying the source of wealth (especially in the case of savings) reminds individuals that income taxes may already have been paid on it. As economists focus almost entirely on the elasticity of relevant tax bases to determine efficiency consequences of taxation, "double taxation" is merely an accounting issue, and yet it appears very salient to our respondents.

Bigrams and trigrams allow us to derive some broad patterns from the universe of responses, but obviously subtle meanings are lost. We therefore randomly sampled 100 of these responses for further scrutiny. As a very rough count, approximately 14 percent of respondents stated explicit opposition to a wealth tax (e.g., "how much savings or inheritance should not determine the amount of tax paid. I used their income and took 5% ; the govn't [sic] is too big and needs to get out of our business."). Another 12 percent suggested decision rules that did not include wealth but did not state explicitly any opposition to the concept (e.g., "10% of all income earned in the year").[23]

The remaining explanations were either too vague to classify (e.g, "I kept taxes low for everyone, as they should be" or "I took mental evaluations and gave a good answer" or "Randonmly [*sic*]") or explicitly supported including wealth in the tax base at least under some circumstances (e.g., "I taxed people with inheritance more because it's not like they

[23]For the purposes of this definition, we do not code as one if the respondent left the door open for *some* wealth taxation even if for the most part they felt income was more important. For example, "to be honest I don't know how taxes are decided but I was going off their income of that year *more so* [emphasis added]" was not coded as implicitly excluding wealth from their calculation. Similarly, "I really couldn't decide how to factor in wealth so I decided to focus more on income" was not coded as explicitly or implicitly against a wealth tax.

had that money before so how much could it harm them?" or "The most important factor was the income to determine the tax amount though in some cases I also took into account a person's wealth").

Notable in both the bigrams and trigrams and our close reading of the random sample of responses was the absence of efficiency concerns (in both the baseline survey in Section 4 and in the current section in which wealth sources are specified). No one argued that taxation would reduce savings or work effort. Those who voiced general opposition to taxes did not rely on efficiency arguments but instead made more moral claims (e.g., it's not "fair" to be taxed twice) or libertarian ones (e.g., the government needs to "get out of our business"). Neither sentiment is easily embodied in familiar social welfare functions, but are suggestive of more complex normative theories that can provide rationales for limited redistribution even in the presence of no incentive effects (Saez and Stantcheva, 2016a; Weinzierl, 2014).

6 Calibrating with Optimal Tax Formula

In a standard optimal tax model, the observed tax preferences will be a function of the normative weights the social planner puts on wealth holders as well as the elasticities of wealth and income with respect to net-of-tax rates. For the purposes of this section, we assume agents see the economic environment just as a traditional, Mirleesian social planner would, and know the supply elasticity of wealth perfectly. Saez and Stantcheva (2016b) simplify the taxation of capital literature by putting wealth directly into the utility function (with linear utility in consumption), and show numerous other models can be embedded in this framework. Putting wealth directly in the utility function is motivated, in their paper, by either bequest motives, entrepreneurship, service flows from wealth (e.g., the peace of mind of potential liquidity, housing services) or motivated beliefs and social norms.

The resulting optimal tax formulas are transparent and easy to calculate, and nest a wide variety of normative justifications and dynamic models. In their model, the government raises revenue from capital and labor income taxes, used to transfer a fixed demogrant to each individual in society. When welfare is weighted inversely with (the sum of capital and labor) income and utility is separable over capital and labor income, they find that the optimal nonlinear tax schedule calibrated to the US joint capital and labor income distribution is quite close to linear. If e_K is the supply elasticity of aggregate capital, then the capital income tax rate is given by 0.8 ($e_K = 0.25$) or 0.5 ($e_K = 1$). If we assume constant rates of return of five percent, this rate corresponds to wealth taxes of between two and four percent, on a similar order of magnitude as our subjects' elicited tax rates on wealth.

We use the linear tax version of their model to calibrate our results and recover the

required normative weights a social planner would need to have over wealth-holding to generate the preferred tax rates we observe (under a series of elasticity assumptions). There is a population of measure 1 with average (aggregate) wealth K. The weight put on the welfare of agent i is g_i, which may be a function of the agent's wealth k_i or other characteristics. Given the results in Table 7 that our subjects do not consider *interactions* between income and wealth in setting the total tax bill, we also use the version of the formula that assumes separability of wealth and income taxes.

In the separable case, the optimal formula for a linear capital tax τ_k is given by:

$$\tau_K = \frac{1 - \bar{g_K}}{1 - \bar{g_K} + e_K} \tag{1}$$

where e_K is the supply elasticity of aggregate K, and $\bar{g}_K = \int_{i=0}^{1} g_i \frac{k_i}{K} d_i$ is the inner product of the welfare weights (normalized so that $\int_i g_i di = 1$) with wealth shares. It is easy to show that $\bar{g}_K$ is equal to the covariance of welfare weights with the wealth shares plus 1.[24] Redistributive motives can be captured with $g_i(k_i)$ decreasing in k_i. If $\bar{g}_K = 0$ then the optimal tax rate is the revenue maximizing one (equivalent to no consideration being given to wealth-holders and thus the only objective being to maximize the demogrant, which benefits the worst off). If taxes are being chosen by a social planner who cares equally about the wealthy and the poor (so the covariance of the weight with wealth shares is 0) then $\bar{g}_K = 1$ and the optimal tax is 0. The formula also reflects the standard result that the optimal tax declines with the supply elasticity of the tax base, and it is immediate that an infinite elasticity implies a zero optimal tax.

We can rearrange (1) to obtain an expression for the implicit weight put on wealth-holders:

$$\bar{g}_K = \frac{1 + e_K \tau_k}{1 + \tau_k} \tag{2}$$

Our estimates for $\bar{g}_K$ obviously depend on the estimate for e_K. The empirical literature estimating e_K is sparse and unsettled, and indeed e_K may differ for savings and bequests. Seim (2017) uses kinks in the Swedish wealth tax schedule to estimate e_K, finding small responses of wealth and no response of labor income.[25] These micro short-run elasticities will be different from the macro or long-run elasticities, which may be much larger.

[24] By definition, $Cov(g_i, \frac{k_i}{K}) = \int g_i \frac{ki}{K} d_i - \frac{1}{K}\mathbf{E}(g_i) \cdot \mathbf{E}(k_i)$. Recall that over an interval of measure one, the average and aggregate values are equal, so $\mathbf{E}(g_i) = \int g_i d_i$, which equals 1 by assumption, and $\mathbf{E}(k) = \int k_i d_i$. As such, $\bar{g}_K = \int g_i \frac{k_i}{K} d_i = Cov(g_i, \frac{k_i}{K}) + 1$.

[25] Seim (2017) also estimates the cross-elasticity of labor income with respect to capital taxes, and finds a zero, which justifies the use of the separable utility formula.

Table 9 shows the resulting $\bar{g}_K$ for our different sources of wealth and different assumptions about e_K. Unsurprisingly, the higher the elasticity, the higher the redistributive motive required to rationalize a given tax rate, and thus the lower $\bar{g}_K$.

An important special case is $e_K = 0$, which implies there is no supply response of wealthholders to taxation. Given the evidence above that none of our subjects mentioned any evasion or avoidance margin as a reason for limiting wealth taxes, it could be that our subjects believe the true elasticity is zero. If this is the case, traditional utilitarian welfare weights would imply that all wealth should be equalized, with tax rates set at one, making our observed tax rates *below* what would be expected. However, Saez and Stantcheva (2016a) show that richer non-utilitarian ideas can be expressed with more general weights. If subjects prefer tax rates less than one even in the absence of supply responses, then it suggests more complex normative ideas than in the standard model. For example, it could be that subjects indeed put additional weight on the welfare of the wealthy or believe that taxation is unjustly punitive. Put differently, in a society where 50% of the people have \$1 in wealth and the other 50% have $W_{rich} >> 1$ in wealth, the social value of giving \$1 to the rich class is 62 cents when the tax base is all wealth, 73 cents when the tax is levied on saved wealth only, and only 23 cents when inherited wealth is taxed. This result follows because in this example the inner product of g_i and $\frac{k_i}{K}$ is given by $\bar{g}_K = \frac{0.5(1-g_{rich})+0.5g_{rich}W_{rich}}{0.5+0.5\times W_{rich}} \approx g_{rich}$.

Are these values for $\bar{g}_K$ large or small? We can compare our estimated $\bar{g}_K$ to those that would obtain under a natural baseline normative weight of $g_i = \frac{1}{k_i}$.[26] In this case the implied $\bar{g}_K$ would be $\frac{1}{K}$, the inverse of mean wealth (which is also aggregate wealth given unit mass population). Given the high mean wealth subjects saw in our experiment, this would result in an extremely small $\bar{g}_K$, on the order of 10^{-6}, implying that one dollar transferred to the rich in the case above is virtually worthless to the social planner.[27] Our estimates above, under the assumption that $e_K = 0$, imply that agents are much less redistributive than this benchmark. A similar logic applies to our finding of a 14% income tax rate and the lack of any mention of taxable income responses.

Consider the other extreme, where our subjects are internalizing a much higher capital supply elasticity of $e_K = 1$. In contrast to the $e_K = 0$ case, the implied welfare weights here are extremely punitive of wealthholders, particularly inheritors. If g_i is monotonically

[26] $\frac{1}{k_i}$ would be the weight under a utilitarian social welfare function with utilities that are logs of wealth only. Saez and Stantcheva (2016b) have agents with quasi-linear utility over consumption as well as wealth, so utilitarian weights imply no redistribution in their model. Instead, they use more general social welfare weights, set equal to the inverse of disposable income, in their normative analysis.

[27] A higher but still extremely small number would obtain if the weight was the inverse of capital income (rather than the stock of wealth) with a rate of return of 5%: $g_i = \frac{1}{.05\times k_i}$.

decreasing in wealth, and $\bar{g}_K < 0$ there must be negative weight put on the wealth of large inheritors. This willingness to actively punish large inheritors rules out Pareto-optimal allocations of inherited capital: there is no regular social welfare function that implements allocations consistent with these weights (Saez and Stantcheva, 2016a). This result is consistent with evidence on fairness preferences from ultimatum games, in which receiving subjects sacrifice their own payoffs in order to deny the giver too unequal a share of unearned income (Fehr and Gächter, 2000), as well as recent experimental evidence that individuals seek to lower the income of the richest person in larger distributions (Fisman *et al.*, 2017).

Finally, recall that our subjects imposed a non-zero wealth tax even on individuals with limited income. Saez and Stantcheva (2016b) offer one interpretation for our result above that wealth and income taxes seem to be set independently. In their model, if wealth and income both enter the utility function, but are independent (i.e. additively separable) sources of utility, then the optimal wealth tax does not take income into account. Another interpretation is that subjects believe idle wealth should be mobilized into productive uses that generate income, or be taxed.[28]

Let us put aside for the moment the difficulties we noted in previous sections in interpreting subjects' answers as preferred tax rates and interpreting their responses to the open-ended questions. Two key results from the paper are that respondents have non-trivial preferred tax rates on wealth *and* that they have little (stated) concern about the elasticity of the tax base with respect to the net of tax rate. In an optimal tax framework, these two conditions imply that respondents must *also* have relatively limited redistributive motives (as, given an inelastic tax base, even a utilitarian would choose full redistribution). This section has allowed us formalized that intuition. Indeed our respondents (again, assuming, as they seem to suggest in their open-ended responses, that they believe there is no or very limited aggregate capital elasticity) appear orders of magnitude less redistributive than common baselines assumed in the literature. Of course, this exercise requires that we shoehorn our respondents' preferences into an optimal tax model (when perhaps they think of the problem in a completely different manner), but it is still noteworthy that they seem to have the opposite concerns of the classical social planner, who has strong redistributive motives due to diminishing marginal utility of consumption but is constrained by efficiency concerns.

[28]Piketty (2014) describes this argument, which is associated with Allais (1977). Those wealth holders who can only manage, say, a two percent annual return would quickly see their wealth taxed away, presumably redistributed to sectors of the economy that enjoy higher returns.

7 Discussion and Conclusion

A recent literature documents the increasing importance of wealth and wealth inequality. Saez and Zucman (2016) find that 20% of American wealth is held by the top 0.1% of owners, a share that has doubled in the last forty years.[29] Piketty (2014) documents a secular increase in wealth-income ratios over the same period. In eras of high wealth inequality and high wealth-income ratios, it is perhaps not surprising for wealth taxes to enter the political debate. We elicit taxes over joint income and wealth holdings using an online survey. We find that Mechanical Turk subjects appear to understand the difference between stocks and flows, choosing wealth tax rates that are an order of magnitude smaller than those on income. Our estimates indicate that on average subjects prefer a 0.8% tax rate on saved wealth, a 3% tax rate on inherited wealth, and a 13-15% percent tax on income. Desired wealth taxes remain at the same rate even at low income levels, and there is some evidence of progressivity, which varies in expected ways with political affiliation.

Were they to be implemented, the budget implications of these taxes would be substantial. Aggregate net wealth in the United States at the end of 2016 was 93 trillion dollars, and Davies and Shorrocks (2000) estimates that between 35-45% of wealth is inherited. Ignoring supply responses, our subjects' implied tax rates would result in an extra 1.11 trillion dollars in government revenue if no consideration were given to the source of wealth, and between 1.4 and 1.6 trillion dollars if preferred inherited and saved wealth taxes were levied separately. This is an enormous sum, well over a quarter of the United States federal government budget.

Our results also suggest that much of the theoretical literature on capital taxation, with the exception of Piketty and Saez (2013) and Kopczuk (2013a), does not capture the intuitive tastes individuals have for taxing wealth. Far from the prescribed zero capital tax or positive subsidy predicted by various models, it appears that respondents have a preference for positive wealth taxation, even for wealth accumulated out of savings and even for low-income individuals. Indeed, some of our calibrations suggest that for plausible wealth bequest elasticities, the implied welfare weight put on inherited wealth would be negative. However, none of our subjects list bequests, or indeed any type of wealth supply response, as their justification for their chosen tax rate, implying that our subjects are much *less* redistributive than would be expected given no supply response.

As noted in the introduction, separate from the proscriptions of economic theory or the extent of popular support, questions about the practical and legal feasibility of wealth taxes remain. Legal scholars have debated the constitutionality of a wealth tax in the United States

[29]Wolff (2014) also finds an increase in wealth inequality since 1962, even in the Survey of Consumer Finance, which is generally viewed as unable to sample very large wealth-holders and thus under-states inequality.

(see Bankman and Shaviro (2014)). Assessing the value of different forms of wealth may be difficult, particularly given sophisticated tax-sheltering services or tax havens, for complex financial contracts or assets that are not transacted very often (although see Posner and Weyl (2016) for both why low transaction rates imply optimal positive wealth taxes as well as how technological changes may make this less of a problem in the future). Wealth taxes may also be inferior to capital income taxation when rates of return vary widely and unpredictably, as they would exempt transitory changes in returns on wealth. But the infeasibility of wealth taxes in the United States should not be taken for granted, and as we discussed earlier they used to play a more prominent role in the US. Thick financial markets, cross-border information sharing, and modern digital records may improve enforcement, and, given our findings, make the wealth tax a policy option Americans may be willing to entertain again. Further research on the costs, benefits, and political economy of wealth taxation may become of increasing policy relevance.

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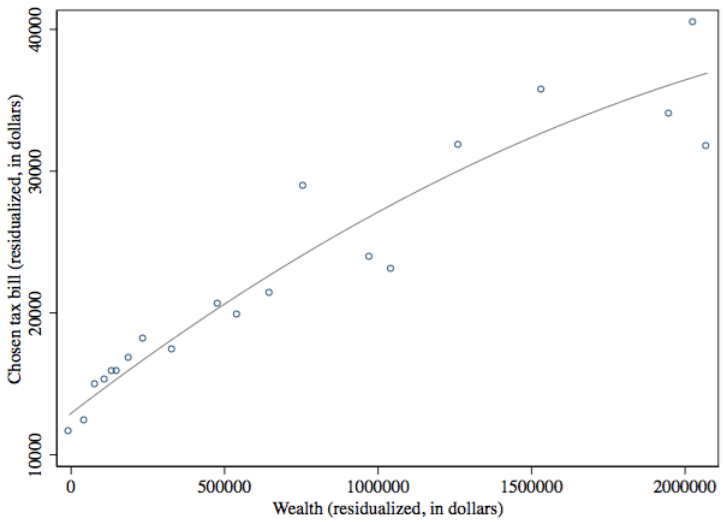
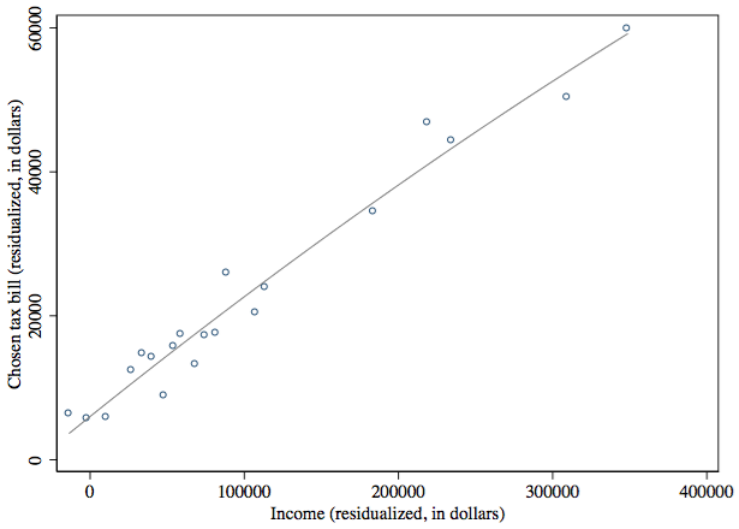
Figure 1: Tax bill as a function of wealth (source of wealth unspecified)



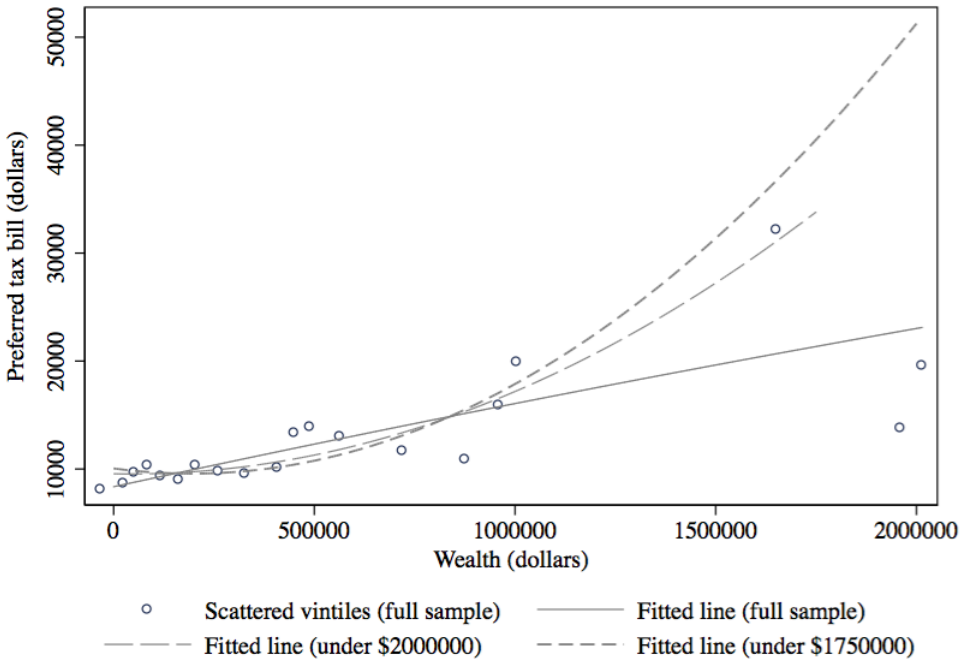
Notes: Data are taken from surveys in which we do not specify to respondents the source of wealth in the vignettes. The figure shows residualized vintiles of the tax and wealth data using the Stata binscatter package. The tax choices have been adjusted for income decile fixed effects and survey date fixed effects. We then add back in the means of the x- and y-axis variables. Note that the scatter points are collapsed to vintiles; subjects were confronted with *more* than the twenty wealth choices plotted in the figure. Fitted lines are based on the underlying data, not the scatter points.

Figure 2: Tax bill as a function of income (source of wealth unspecified)



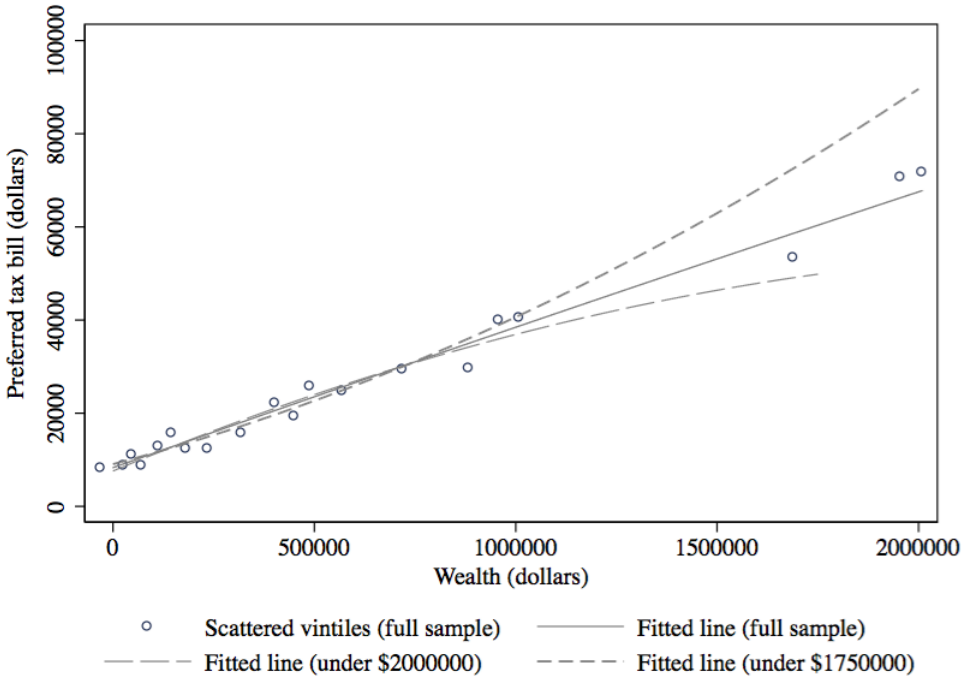
Notes: Data are taken from surveys in which we do not specify to respondents the source of wealth in the vignettes. The figure shows residualized vintiles of the tax and income data using the Stata binscatter package. The tax choices have been adjusted for wealth decile fixed effects and survey date fixed effects. We then add back in the means of the x- and y-axis variables. Note that the scatter points are collapsed to vintiles; subjects were confronted with *more* than the twenty income choices plotted in the figure. Fitted lines are based on the underlying data, not the scatter points.

Figure 3: Tax bill as a function of wealth (wealth from savings)



Notes: Data are taken from surveys in which we specify to respondents the source of wealth in the vignettes. This figure uses only those subjects who encountered the *savings* vignettes first and uses their preferred tax bills when wealth comes from savings. The figure shows residualized vintiles of the tax and wealth data using the Stata binscatter package. The tax choices have been adjusted for income decile fixed effects and survey date fixed effects. We then add back in the means of the x- and y-axis variables. Note that the scatter points are collapsed to vintiles; subjects were confronted with *more* than the twenty wealth choices plotted in the figure. Fitted lines are based on the underlying data, not the scatter points.

Figure 4: Tax bill as a function of wealth (wealth from inheritance)



Notes: Data are taken from surveys in which we specify to respondents the source of wealth in the vignettes. This figure uses only those subjects who encountered the *inheritance* vignettes first and uses their preferred tax bills when wealth comes from inheritance. The figure shows residualized vintiles of the tax and wealth data using the Stata binscatter package. The tax choices have been adjusted for income decile fixed effects and survey date fixed effects. We then add back in the means of the x- and y-axis variables. Note that the scatter points are collapsed to vintiles; subjects were confronted with *more* than the twenty wealth choices plotted in the figure. Fitted lines are based on the underlying data, not the scatter points.

Table 1: Summary statistics in our sample compared to the General Social Survey

	(1) MTurk sample	(2) GSS sample
Female	0.422 (0.494)	0.545 (0.498)
Age	33.17 (10.29)	47.46 (17.24)
White	0.754 (0.431)	0.743 (0.437)
Has at least college education	0.605 (0.489)	0.316 (0.465)
Household income	49869.1 (37047.7)	80999.9 (80637.8)
Supported Obama in 2012	0.646 (0.478)	0.632 (0.482)
Supports gov't redistribution (scale 1-7)	4.345 (1.962)	4.244 (2.062)
Luck, help from others more important to success than hard work	0.329 (0.470)	
Wealth value considered in tax scenarios	623510.3 (631022.1)	
Income value considered in tax scenarios	82780.4 (81769.5)	
Observations	1899	2538

Notes: GSS sample is taken from the 2014 GSS. GSS surveys weights are used. The MTurk sample pools subjects from all survey dates.

Table 2: Relationship between total tax bill and income and wealth values (surveys where source of wealth not specified)

	Dep't variable: Subjects' chosen total tax bill (dollars)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Wealth (dollars)	0.0119***	0.0119***	0.0117***	0.0117***	0.0124***	0.0117***	0.00741**	0.0114***	0.0166***
	[0.00301]	[0.00300]	[0.00271]	[0.00271]	[0.00289]	[0.00272]	[0.00351]	[0.00261]	[0.00283]
Income (dollars)	0.158***	0.158***	0.157***						
	[0.00897]	[0.00896]	[0.00920]						
Imputed labor income									0.163***
									[0.00939]
Dept. var. mean	22415.1	22415.1	22415.1	22415.1	22821.0	22514.8	20668.8	22413.7	22415.1
Question order FE?	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
mTurk ID FE?	No	No	Yes	Yes	Yes	Yes	No	Yes	No
Income FE?	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Ex. short	No	No	No	No	Yes	No	No	No	Yes
Ex. zero tax bills?	No	No	No	No	No	Yes	No	No	No
First obs. only?	No	No	No	No	No	No	Yes	No	No
Weighted?	No	No	No	No	No	No	No	Yes	No
Observations	5420	5420	5420	5420	5060	5396	542	5410	5420

Notes: Data taken from surveys where the source of wealth in the vignettes is not specified. Question order fixed effects include ten dummies for each of the ten iterations of the question each respondent encountered. mTurk ID fixed effects include a fixed effect for each unique mTurk id (roughly speaking, for each subject, unless they take the survey with multiple IDs). "Ex. short" drops subjects who complete the survey in less than four minutes, roughly the fifth percentile of the duration distribution. "Ex. zero tax bills" drops those who enter a preferred tax bill of zero. "First obs. only" includes only the very first iteration that each subject encounters, in order to address concerns about anchoring bias. "Weighted" shows results after weighting our mTurk observations to match the 2014 GSS in terms of the $2 \times 2 \times 2$ weights based on dummies for being greater than thirty, female and having a BA (those characteristics where our mTurk and GSS samples differ the most). Finally, "imputed labor income" takes into account the fact that our definition of income also includes capital income and thus uses $\max(0, income - .05 \cdot wealth)$ as an approximation of *labor* income. Standard errors (clustered by mTurk ID) are reported in brackets. $^{*}p < .1$,** $p < .05$,*** $p < 0.01$

Table 3: Most common bigrams and trigrams (surveys where source of wealth not specified)

Bigrams		Trigrams	
Phrase	Count	Phrase	Count
base incom	48	base incom wealth	7
incom wealth	40	flat tax rate	6
incom tax	36	base incom year	5
tax rate	32	incom made year	5
flat tax	28	tax rate incom	5
incom year	22	think flat tax	5
year incom	22	base incom level	4
pay tax	20	base much wealth	4
10 incom	19	everyon pay 10	4
incom level	19	flat tax incom	4
tax incom	19	incom accumul wealth	4
wealth incom	19	incom high wealth	4
percentag incom	18	pay amount tax	4
amount wealth	16	percentag incom tax	4
annual incom	13	take wealth consider	4
everyon pay	13	tax base incom	4
much wealth	13		
person wealth	13		
tax bracket	13		
thought fair	13		

Notes: Data are taken from surveys were we do not specify the source of wealth in the vignettes. At the end of these surveys (after all chosen tax bills and entered and demographic questions are asked) we ask respondents "Please describe how you decided on the level of tax payments for the hypothetical individuals in the survey." We use the "tm" package in R to process the text of the responses to this question. We convert all text to lowercase, strip punctuation and common English stopwords, and stem words with a Porter stemmer. We then take all 2-word (bigram) and 3-word (trigram) sequences in the remaining text, and calculate frequencies across subject responses.

Table 4: Chosen tax bill as a function of income and wealth (source of wealth specified)

	Dependent variable: Total tax bill (dollars)					
	Wealth from savings		Wealth from inherit.		Pooled, w/in-subject	
	(1)	(2)	(3)	(4)	(5)	(6)
Wealth (dollars)	0.00766***	0.00758***	0.0303***	0.0306***	0.0112***	0.0111***
	[0.00218]	[0.00216]	[0.00354]	[0.00357]	[0.00187]	[0.00181]
Income (dollars)	0.132***		0.135***		0.136***	
	[0.00759]		[0.0178]		[0.00793]	
Wealth is from inheritance					36.99	35.95
					[715.1]	[713.3]
Wealth x Inheritance					0.0130***	0.0129***
					[0.00243]	[0.00242]
Dept. var. mean	13008.0	13008.0	26570.0	26570.0	19125.0	19125.0
Question order FE?	Yes	Yes	Yes	Yes	Yes	Yes
mTurk ID FE?	Yes	Yes	Yes	Yes	Yes	Yes
Inc. decile FE?	No	Yes	No	Yes	No	Yes
Observations	4503	4503	4802	4802	18572	18572

Notes: All regressions include fixed effects for survey date, question order and MTurk ID. In the first four columns, only the subjects' first seven questions are used in the sample. Half the sample was randomized so that the first seven questions involve wealth from *savings* and half so that the first seven questions involve wealth from *inheritance*. So, one set of individuals is sampled in cols. (1) and (2) and another set in cols. (3) and (4). In cols. (5) and (6) we combine both sample *and* use all 14 questions (so the sample size increases by a factor of four). As we retain the mTurk ID fixed effects, identification of the Wealth x Inheritance coefficient is coming from contrasting how the same person answers the first set of seven questions versus the second set of seven questions. Standard errors (clustered by MTurk ID) are in brackets. $^{*}p < .1$,$^{**}p < .05$,$^{***}p < 0.01$

Table 5: Testing for convexity of tax schedule over wealth (wealth from savings)

	Dependent variable: Chosen tax bill (in dollars)					
	(1)	(2)	(3)	(4)	(5)	(6)
Wealth (dollars)	0.00575*	-0.00135	-0.00800	0.00380	0.00132	0.00242
	[0.00336]	[0.00747]	[0.0131]	[0.00296]	[0.00434]	[0.00369]
Wealth squared / 10M	0.00902	0.0794	0.146			
	[0.0236]	[0.0696]	[0.132]			
Max(Wealth - 500,000, 0)				0.00481	0.0136	0.0115
				[0.00581]	[0.0108]	[0.0103]
Dept. var. mean	13008.0	12118.1	11697.3	13008.0	12118.1	11697.3
Question order FE?	Yes	Yes	Yes	Yes	Yes	Yes
mTurk ID FE?	Yes	Yes	Yes	Yes	Yes	Yes
Ex. if wealth above...	N/A	2M	1.75M	N/A	2M	1.75M
Observations	4503	4011	3932	4503	4011	3932

Notes: All regressions include fixed effects for survey date, question order, MTurk ID and income decile fixed effects. Squared terms are scaled for readability. Standard errors (clustered by MTurk ID) are in brackets. $^{*}p < .1$,$^{**}p < .05$,$^{***}p < 0.01$

Table 6: Testing for heterogeneous tax preferences on wealth

	(1) Var: Obama supporter	(2) Var: Supports redistr.	(3) Var: Luck important
Var x Wealth x Inheritance	0.0151*	0.00308*	0.000526
	[0.00811]	[0.00179]	[0.00814]
Wealth x Inheritance	0.0120*	0.00715	0.0249***
	[0.00628]	[0.00734]	[0.00507]
Inheritance question	1264.8	67.27	-1726.2
	[2090.0]	[2195.5]	[1347.5]
Var x Wealth	-28.31	151.9*	465.1
	[510.8]	[80.41]	[367.2]
Var x Inheritance questions	-1452.4	43.85	2822.8
	[2558.9]	[543.2]	[2603.3]
Wealth (dollars)	0.00777	0.000487	0.00461***
	[0.00473]	[0.00244]	[0.00121]
Var	2384.5	290.8	350.6
	[1896.8]	[330.2]	[1586.6]
Dept. var. mean	20006.9	20006.9	20025.3
Observations	9305	9305	8290

Notes: All regressions include fixed effects for survey date, question order, MTurk ID and income decile fixed effects. Support for Obama and belief that luck is more important than hard work are binary variables. Support for redistribution is on a 1-7 scale. Standard errors (clustered by MTurk ID) are in brackets. $^{*}p < .1,^{**}p < .05,^{***}p < 0.01$

Table 7: Testing for separability between wealth and income tax preferences

	Dependent variable: Total tax bill (dollars)					
	Generic wealth		Wealth from savings		Wealth from inherit.	
	(1)	(2)	(3)	(4)	(5)	(6)
(Income x Wealth)/100M	1.129		-0.431		1.468	
	[1.046]		[1.662]		[3.591]	
Wealth (dollars)	0.0105***	0.0122***	0.00797**	0.00877***	0.0292***	0.0308***
	[0.00285]	[0.00281]	[0.00312]	[0.00315]	[0.00446]	[0.00419]
Income (dollars)	0.147***	0.157***	0.135***	0.124***	0.126***	0.139***
	[0.0106]	[0.00954]	[0.0105]	[0.0128]	[0.0173]	[0.0221]
Wealth x (Inc. <50,000)		-0.00143		-0.00273		-0.00116
		[0.00194]		[0.00388]		[0.00471]
Income <50,000		1397.5		-29.20		1399.8
		[1595.8]		[1453.1]		[2616.2]
Dept. var. mean	22415.1	22415.1	13008.0	13008.0	26570.0	26570.0
Observation	5420	5420	4503	4503	4802	4802

Notes: Data for the first two columns are taken from the baseline surveys (where the source of wealth is not specified). Data for the middle two columns uses the surveys where the source is specified, but only use the answers to the vignettes where wealth comes from savings (and only from those who saw the savings vignettes first). The last two columns are analogues to the middle two but use the questions where wealth comes from inheritance. $^{*}p < .1,^{**}p < .05,^{***}p < 0.01$

Table 8: Most common bigrams and trigrams (surveys where source is specified)

Bigrams		Trigrams	
Phrase	Count	Phrase	Count
base incom	100	went gut feel	12
incom tax	87	base incom wealth	11
pay tax	80	just went gut	11
tax rate	77	10 tax incom	10
flat tax	68	alreadi paid tax	10
tax incom	64	base tax payment	10
year incom	49	flat tax rate	10
alreadi tax	46	money alreadi tax	10
inherit money	45	tax base incom	10
inherit tax	42	10 flat tax	9
incom wealth	41	level tax payment	9
10 incom	40	base incom level	8
tax payment	37	flat 10 tax	8
incom year	35	incom regardless wealth	8
earn year	34	most base incom	8
save inherit	34	peopl pay tax	8
tax inherit	34	think peopl pay	8
10 tax	32	think peopl tax	8
incom level	32	believ flat tax	7
peopl pay	32	decid base incom	7
tax money	31	flat tax 10	7
percentag incom	30	money save inherit	7
save money	29	peopl inherit money	7
decid base	28	percentag base incom	7
tax peopl	28	tax money save	7
wealth incom	28		

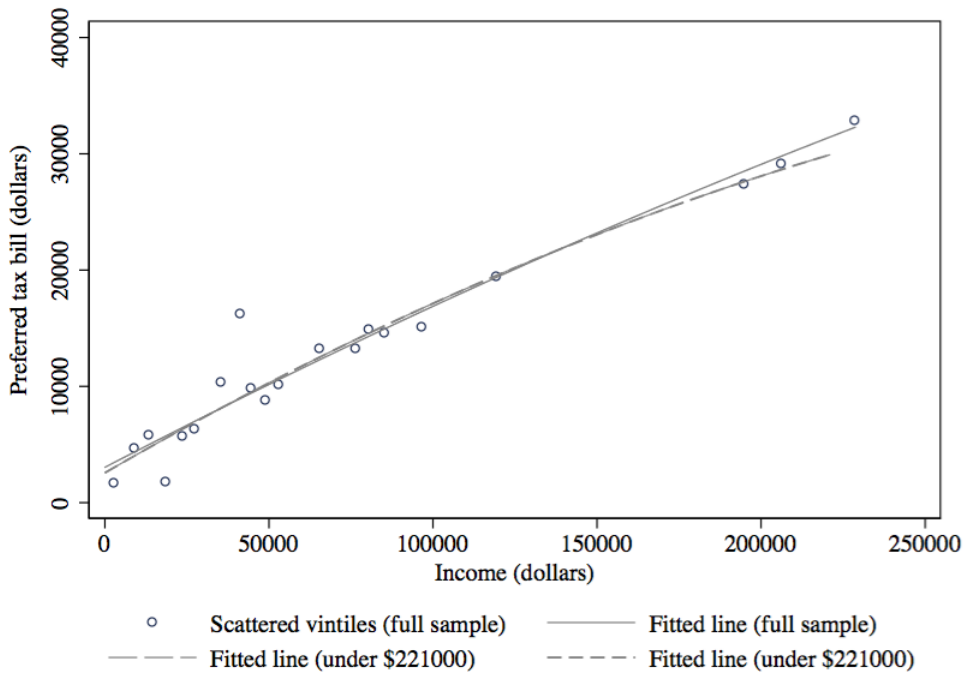
Notes: Data are taken from surveys in which we specify the source of wealth in the vignettes. At the end of these surveys (after all chosen tax bills are entered and demographic questions are asked) we ask respondents "Please describe how you decided on the level of tax payments for the hypothetical individuals in the survey." We use the "tm" package in R to process the text of the responses to this question. We convert all text to lowercase, strip punctuation and common English stopwords, and stem words with a Porter stemmer. We then take all 2-word (bigram) and 3-word (trigram) sequences in the remaining text, and calculate frequencies across subject responses.

Table 9: Implied redistributive motives, given subjects' preferred tax rates and select elasticity assumptions)

	Supply elasticity of aggregate capital K				
Subjects' chosen τ...	(1) e_K =0	(2) e_K =0.1	(3) e_K =0.25	(4) e_K =0.5	(5) e_K =1.0
...on generic K inc. (23.3%)	0.622	0.603	0.574	0.527	0.432
...on K inc. from savings (15.2%)	0.737	0.724	0.704	0.671	0.605
...on K inc. from bequests (61.3%)	0.240	0.202	0.145	0.0499	-0.140

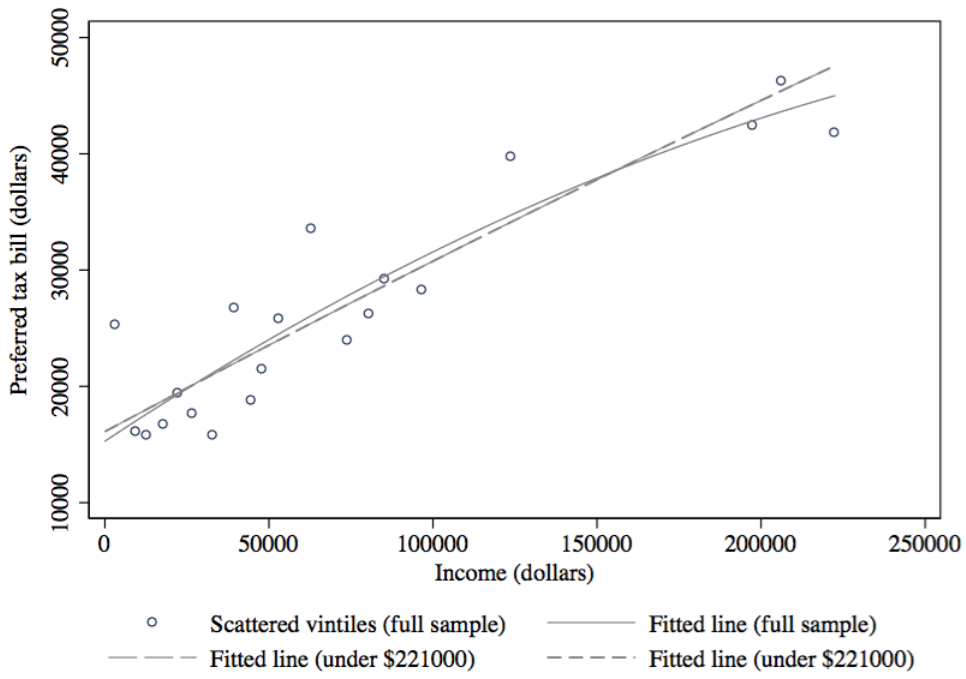
Notes: See Section 6 for a full definition of redistributive motives. Briefly, the redistributive motive is defined as $\frac{\int_i g_i k_i}{\int_i k_i}$, where g_i is the welfare weight put on an individual i with capital income k_i. By assumption, $\int_i g_i = 1$, so that if welfare weights are *negatively* correlated with wealth then $\frac{\int_i g_i k_i}{\int_i k_i} < 1$. For $\frac{\int_i g_i k_i}{\int_i k_i} < 0$ welfare weights on the wealthy are negative. Subjects' preferred capital tax rates are taken from col. (4) of Table 2 and cols. (2) and (4) of Table 4. We multiply these rates on wealth by 20 to convert them into rates on capital income (assuming a five percent rate of return). $^{*}p < .1$,$^{**}p < .05$,$^{***}p < 0.01$

Appendix Figure 1: Tax bill as a function of income (wealth from savings)



Notes: The figure shows residualized vintiles of the tax and wealth data. The tax choices have been adjusted for income decile fixed effects and survey date fixed effects. Note that as the scatter points are collapsed to vintiles, subjects were confronted with *more* than the twenty wealth choices plotted in the figure. Fitted lines are based on the underlying data, not the scatter points.

Appendix Figure 2: Tax bill as a function of income (wealth from inheritance)



Notes: The figure shows residualized vintiles of the tax and wealth data. The tax choices have been adjusted for income decile fixed effects and survey date fixed effects. Note that as the scatter points are collapsed to vintiles, subjects were confronted with *more* than the twenty wealth choices plotted in the figure. Fitted lines are based on the underlying data, not the scatter points.

Appendix Table 1: Survey rounds where the source of wealth is not specified

Round	Date	Sample size	Variation
1	2014-11-11	2,740	Basic
2	2014-12-12	2,680	Extended Wealth Support

Notes: "Basic" indicates that wealth values were drawn from the distribution {$50,000, $100,000, $200,000, $500,000, $1,000,000, $2,000,000}. Extended Wealth Support adds values $300,000, $750,000 and $1,500,000 to the support of the wealth distribution.

Appendix Table 2: Survey rounds where the source of wealth is specified

Round	Date	Sample size	Variation
1	2015-04-06	2,618	Basic
3	2015-04-14	3,010	Basic
4	2015-11-10	3,962	Extended Wealth Support
5	2015-11-24	4,214	Jittered
6	2015-12-22	4,200	Jittered
7	2015-12-23	4,228	SCF Values

Notes: "Basic" indicates that wealth values were drawn from the distribution {$50,000, $100,000, $200,000, $500,000, $1,000,000, $2,000,000}. Extended Wealth Support adds values $300,000 and $750,000 to the support of the wealth distribution. Jittered means that wealth values from the extended distribution were additionally given a 5% addition or subtraction. SCF values means that wealth, income pairs were drawn from 2010 Survey of Consumer Finance survey. Round 2 (N=32) was dropped due to implementation problems.

Appendix Table 3: Verifying that levels of wealth subjects are asked to consider are uncorrelated with their characteristics (in surveys where source of wealth is unspecified)

	(1) Female	(2) Obama	(3) Age	(4) College	(5) White	(6) Black	(7) Own HH inc.	(8) Married	(9) Emp. FT
Wealth/100,000	0.000692	0.000227	-0.00210	-0.000289	-0.000122	-0.000290	-16.66	-0.000564	0.0000903
	[0.000967]	[0.000931]	[0.0190]	[0.000983]	[0.000881]	[0.000493]	[62.38]	[0.000940]	[0.00100]
Observations	5420	5420	5410	5420	5410	5410	5410	5420	5410

Notes: Data are taken from surveys where the source of wealth is not specified. Each coefficient is from a regression of the form $Var_i = \beta Wealth_{it} + \lambda_t + e_{it}$, where Var take the values of the characteristics listed in the columns. These regressions include survey date fixed effects (λ_t), given our different sampling rules for income and wealth employed across survey dates. As in our main regressions, we cluster standard errors by mTurk ID. $^{*}p < .1,^{**}p < .05,^{***}p < 0.01$

Appendix Table 4: Verifying that levels of income subjects are asked to consider are uncorrelated with their characteristics (in surveys where source of wealth is unspecified)

	(1) Female	(2) Obama	(3) Age	(4) College	(5) White	(6) Black	(7) Own HH inc.	(8) Married	(9) Emp. FT
Income/10,000	-0.000290	-0.000159	0.0101	-0.000759	0.000171	-0.000352	-29.12	0.000370	-0.000162
	[0.000681]	[0.000694]	[0.0139]	[0.000677]	[0.000614]	[0.000366]	[38.11]	[0.000665]	[0.000692]
Observations	5420	5420	5410	5420	5410	5410	5410	5420	5410

Notes: Data are taken from surveys where the source of wealth is not specified. Each coefficient is from a regression of the form $Var_i = \beta Income_{it} + \lambda_t + e_{it}$, where Var take the values of the characteristics listed in the columns. These regressions include survey date fixed effects (λ_t), given our different sampling rules for income and wealth employed across survey dates. As in our main regressions, we cluster standard errors by mTurk ID. $^{*}p < .1,^{**}p < .05,^{***}p < 0.01$

Appendix Table 5: Checking randomization of wealth values within survey date (surveys where source of wealth is specified)

	(1) Female	(2) Obama	(3) Age	(4) College	(5) White	(6) Black	(7) Own HH inc.	(8) Married	(9) Emp. FT
Wealth/100,000	-0.000285	-0.000242	0.0106	0.0000184	0.000382	-0.0000928	1.645	-0.000227	-0.00101
	[0.000710]	[0.000711]	[0.0152]	[0.000730]	[0.000627]	[0.000331]	[57.45]	[0.000691]	[0.000740]
Observations	9305	9305	9305	9305	9305	9305	9305	9305	9305

Notes: Data are taken from surveys where the source of wealth is specified. Each coefficient is from a regression of the form $Var_i = \beta Wealth_{it} + \lambda_t + e_{it}$, where Var take the values of the characteristics listed in the columns. These regressions include survey date fixed effects (λ_t), given our different sampling rules for income and wealth employed across survey dates. As in our main regressions, we cluster standard errors by mTurk ID. $^{*}p < .1,^{**}p < .05,^{***}p < 0.01$

Appendix Table 6: Checking randomization of income values within survey date (surveys where source of wealth is specified)

	(1) Female	(2) Obama	(3) Age	(4) College	(5) White	(6) Black	(7) Own HH inc.	(8) Married	(9) Emp. FT
Income/10,000	-0.000388	-0.000271	-0.00435	-0.00106	-0.000167	-0.000128	-27.76	0.000582	0.000771
	[0.000647]	[0.000653]	[0.0131]	[0.000656]	[0.000548]	[0.000325]	[53.47]	[0.000626]	[0.000657]
Observations	9305	9305	9305	9305	9305	9305	9305	9305	9305

Notes: Data are taken from surveys where the source of wealth is specified. Each coefficient is from a regression of the form $Var_i = \beta Income_{it} + \lambda_t + e_{it}$, where Var take the values of the characteristics listed in the columns. These regressions include survey date fixed effects (λ_t), given our different sampling rules for income and wealth employed across survey dates. As in our main regressions, we cluster standard errors by mTurk ID. $^{*}p < .1,^{**}p < .05,^{***}p < 0.01$

Appendix Table 7: Comparing respondents randomized into first seeing savings versus inheritance questions

	(1) Income	(2) Wealth	(3) Female	(4) Obama	(5) Age	(6) College	(7) White	(8) Black	(9) Own HH inc.	(10) Married	(11) Emp. FT
Saw savings	749.4	1907.9	-0.00419	0.000184	0.320	-0.0220	0.00515	-0.00706	-242.1	-0.0257	-0.00295
questions first	[1328.7]	[12369.2]	[0.0269]	[0.0259]	[0.558]	[0.0265]	[0.0233]	[0.0140]	[2119.9]	[0.0258]	[0.0271]
Mean, inheritance	72664.7	608291.3	0.429	0.652	33.18	0.618	0.757	0.0743	51027.2	0.356	0.541
Observations	9305	9305	9305	9305	9305	9305	9305	9305	9305	9305	9305

Notes: Data taken from surveys where the source of wealth is specified. Each coefficient is from a regression of the form: $Var_{it} = \beta Saw\ savings\ first_{it} + \lambda_t + e_{it}$, where $Saw\ savings\ first$ is a dummy for having been randomized to see first the vignettes where wealth is due to savings. $^{*}p < .1,^{**}p < .05,^{***}p < 0.01$

Appendix Table 8: Do respondents' answers depend on which types of vignette (savings versus inheritance) they encounter first?

	Wealth from savings		Wealth from inherit.	
	(1)	(2)	(3)	(4)
Wealth (dollars)	0.00766***	0.0134***	0.0303***	0.0170***
	[0.00218]	[0.00318]	[0.00354]	[0.00254]
Income (dollars)	0.132***	0.149***	0.135***	0.122***
	[0.00759]	[0.0227]	[0.0178]	[0.0111]
Dept. var. mean	13008.0	17080.1	26570.0	19367.4
Module viewed first	Savings	Inheritance	Inheritance	Savings
Round FE?	Yes	Yes	Yes	Yes
mTurk ID FE?	Yes	Yes	Yes	Yes
Observations	4503	4570	4802	4697

Notes: Data taken from surveys where the source of wealth is specified. All regressions include question-order and mTurk ID fixed effects. The headings indicate the type of vignette (wealth from savings or wealth from inheritance) the respondents are answering. Standard errors clustered by mTurk ID. $^{*}p < .1,^{**} p < .05,^{***} p < 0.01$

Appendix Table 9: Testing for heterogeneous tax preferences on wealth (additional results)

	(1) Var: Female	(2) Var: Older than 30	(3) Var: Above med. inc.	(4) Var: Has kids	(5) Var: Has BA	(6) Var: White
Var x Wealth x Inheritance	-0.00196	0.000316	0.000243	0.00685	-0.00365	-0.0105
	[0.00845]	[0.00802]	[0.00784]	[0.00805]	[0.00864]	[0.0105]
Wealth x Inheritance	0.0227***	0.0216***	0.0218***	0.0171***	0.0244***	0.0300***
	[0.00453]	[0.00631]	[0.00526]	[0.00638]	[0.00746]	[0.00965]
Inheritance question	-1128.5	604.1	819.1	546.5	519.5	-2122.1
	[1313.3]	[1974.8]	[1667.6]	[1732.8]	[2101.5]	[2705.8]
Var x Wealth	453.7	-263.7	-239.7	-125.2	-389.8	-189.3
	[474.3]	[429.6]	[352.9]	[385.3]	[457.5]	[441.4]
Var x Inheritance questions	3357.2	-474.1	-1269.4	-328.4	-504.4	3145.6
	[2566.2]	[2406.6]	[2278.8]	[2293.7]	[2521.0]	[3000.7]
Wealth (dollars)	0.00570***	0.00904**	0.00851***	0.00847***	0.00988**	0.00906**
	[0.00151]	[0.00398]	[0.00307]	[0.00282]	[0.00419]	[0.00373]
Var	-3966.2**	685.2	1286.2	338.4	2588.2	380.0
	[1726.3]	[1597.7]	[1343.5]	[1468.4]	[1670.5]	[1723.6]
Dept. var. mean	20006.9	20006.9	20006.9	20006.9	20006.9	20006.9
Observations	9305	9305	9305	9305	9305	9305

Notes: Data taken from surveys where the source of wealth is specified. All regressions include income fixed effects. Standard errors clustered by mTurk ID. $^{*}p < .1,^{**}p < .05,^{***}p < 0.01$